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Land Classification / Soil Survey Project of the

SYRIAN ARAB REPUBLIC

VOLUME 10

Analytical Soil Data in Support of the 1:500,000, 1:100,000, and the 1:25,000 scale Soil Surveys of Syria.

October 1982

Prepared for

United States Agency for International Development
and the
Syrian Arab Republic

Prepared by

Louis Berger International, Inc.
East Orange, New Jersey, U.S.A.

Remote Sensing Institute
South Dakota State University
Brookings, South Dakota , U.S.A.

and the
Ministry of Agriculture and Agrarian Reform
Directorate of Soils

Contract AID/NE-C-1644

VOLUME 10

Analytical Soil Data in Support of the 1:500,000, 1:100,000, and the 1:25,000 scale Soil Surveys of Syria.

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FOREWORD

INTRODUCTION*

The soil surveys of Syria at the scales of 1:500,000, 1:100,000, and 1:25,000 are among the major objectives of the "Syria Land Classification/Soil Survey Project". Analytical data for the 1:500,000 and 1:25,000 scale surveys are included in this volume. The 1:100,000 scale survey utilized the data of the 1:500,000 scale survey.

The project is mainly a technical assistance project for the United States Agency for International Development (USAID) to the Syrian Arab Republic Government (SARG). The objective of the project is defined as "to assist the Syrian Arab Republic to expand and accelerate its program of land classification and soil survey in order to facilitate the implementation of the government decisions to intensify both agricultural output and income through more efficient and appropriate use of limited land and other productive resources." One of the main objectives of the project is to establish an effective land classification/soil survey unit within the Directorate of Soils of the Ministry of Agriculture and Agrarian form through specialized training of the personnel and to prepare several general soil survey maps.

The Syria land classification project was carried out by Louis Berger, International, Inc., East Orange, New Jersey, as the main contractor with the primary administrative responsibility of the project, and by the Remote Sensing Institute of the South Dakota State University, Brookings, South Dakota, with primary responsibility for the technical aspect of the project, under the contract A.I.D./NE-C-1644 (Syria). The participation of the Syrian Arab Republic was provided through the Directorate of Soils, Ministry of Agriculture and Agrarian Reform and the State Planning Commission of the Prime Minister's Office.

The soil reports of 1:500,000 and 1:100,000 surveys are the major soil studies currently undertaken in accordance with the guidelines put forward by the Grant Agreement between SARG and USAID. The primary purpose of these studies is to classify, map and describe the nature of soils in Syria and within the

*Profile descriptions and soil samplings by Haluk Yuksel, Riad Rizik, Inam Daya, Adib Jaber, Sami Darwish and Samira Kabbas. Mr. Yuksel is a soil scientist with Louis Berger International, Inc., East Orange, N.J., USA. Mr. Rizik, Mr. Daya, Mr. Jaber, Mr. Darwish and Miss Kabbas are staff members with the Directorate of Soils, Ministry of Agriculture and Agrarian Reform, Syria.

First Settlement Zone, with particular attention to the interpretations of soils according to their physical and chemical properties. This will provide a sound and complete information base for the present and future planning efforts in Syria by providing the necessary information on Syrian land/soil resources and by determining the areas which possess high potential for future development.

In these studies, the soils of Syria and the First Settlement Zone are described according to the new Comprehensive Soil Classification System of the United States Department of Agriculture, which is almost universally accepted. The soil mapping was done with the aid of Landsat false color composite imagery of 1:500,000 and 1:100,000 scales. Final soil maps are prepared and published on 1:500,000 and 1:100,000 scale black and white mosaics prepared from Landsat imagery. This appendix presents descriptions and data on physical and chemical characteristics of soils. Soils were described in the field and soil samples were collected from every major horizon. Soil samples were analyzed in the regional Soil Laboratory of the Directorate of Soils, Ministry of Agriculture and Agrarian Reform, Damascus, Syria.

1:500,000 Soil Data Sheets

(1:100,000 Soil Data Sheets)

SYRIAN ARAB REBUBLIC
MINISTRY OF AGRICULTURE AND AGRARIAN
REFORM DIRECTORATE OF SOILS
DEPARTMENT OF SOIL SURVEY

SOIL SERIES _____ TAXONOMY : _____ SOIL. No. SP - 1

LOCATION _____ LAB Nos. 1068 - 1100 - 1132 - 1085

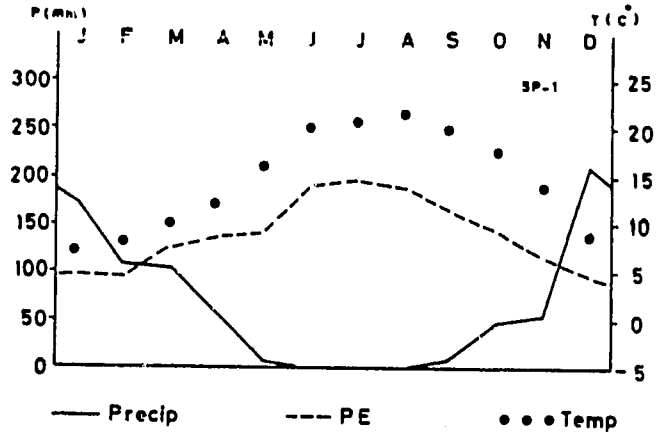
Depth (cm)	Horizon	Size Class and particle diameter (mm) — Total: Sand (2-0.05)	Total: Silt (0.05-0.002)	Total: Clay (<0.002)	Sand: Very coarse (2 - 1)	Sand: Coarse (1 - 0.5)	Sand: Medium (0.5 - 0.25)	Sand: Fine (0.25 - 0.1)	Sand: Very fine (0.1 - 0.05)	Silt: 0.05 - 0.02	Silt: 0.02 - 0.002	Coarse fragments: >2 % of whole soil	Coarse fragments: 2 - 19 % of <75 mm	Coarse fragments: 19 -75 % of <75 mm	Texture class
		%, of < 2 mm													
0- 16	A11	71	12	17											SL
16- 23	A12	73	11	16											SL
23- 50	B21	51	11	38											SC
50- 67	B22	50	16	34											SCL

Depth (cm)	Organic Carbon %	Nitrogen %	C / N	Ext. Iron as Fe %	Carbonate as Ca Co 3 <2 mm %	Carbonate as Ca Co 3 <0.002 mm %	Bulk Density 1/3 bar g / cc	Bulk Density ovendry g / cc	COLE	Water Contents 1/3 bar %	Water Contents 15 bar %	pH Satur. paste	pH H_2O	pH K Cl
0- 16	.5				2.5	2.9				13.6	5.2		6.7	
16- 23	.5				.5	3.6				13.0	4.9		6.8	
23- 50	.4				3.0	tr				23.5	10.4		7.2	
50- 67	.4				8.0	5.8				22.3	9.8		7.3	

Depth (cm)	Extractable Bases Ca	Mg	Na	K	Sum	Ext Acidity	C. E. C. Sum of Cations	C. E. C. Na OAc	Ext. Al me / 100 g	Ratios to clay C. E. C	Ext. Fe	15 bar water	Ca/ Mg	Total Solu. Salts ppm	Base saturation Sum of Cations %	Base saturation Na OAc %
	me / 100 g															
0- 16			.8	123.0				25.0		1.5		.3				100.0
16- 23			.9	85.0				30.0		1.9		.3				100.0
23- 50			.7	76.7				46.2		1.2		.3				100.0
50- 67			1.6	90.7				42.5		1.3		.3				100.0

Depth (cm)	Electrical Conductivity mmho / cm	Water Extract From Saturated Paste — Cations: Ca	Mg	Na	K	CO_3	HCO_3	Cl	SO_4	Water at Satur. %	ESP %	SAR	CEP %	Gypsum %	Ext P_2O_5 ppm	Available Nutrients Ca mg / 100 g	Mg	K
		me / liter																
0- 16	.6										3.2	.1	100.0		12.0	8.0		>100
16- 23	.5										3.0	.1	100.0		tr	28.5		>100
23- 50	.5										1.5	.1	100.0		tr	30.0		>100
50- 67	.4										3.8	.2	100.0		17.7	11.5		>100

Classification: Typic Xerochrept; fine loamy, mixed, thermic.
Location: Tartous province, Syria. Approximately 28 km south of Tartous, 7.5 km south of Kharabeh, 200 m east of the road from Tartous to Lebanon. Approximate coordinates 34o 39' N latitude and 35o 58' E longtitude.
Physiographic Position: Coastal plains; elevation about 5 m.a.s.l.
Topography: Level topography with a characteristic slope of 1 percent.
Drainage: Well drained, slow surface run-off, slow permeability.
Parent Material: Quaternary or more recent aluvium and aluvial fan deposits.
Sampled by: H. Yuksel, R. Rizek and S. Darwish on June 18, 1980
Soil No.: SP - 1



Hori.	Depth (cm)	Description
A11	0 - 16	Dark brown (10 YR 3/3 m) to dark grayish brown (10 YR 4/2 d) fine sandy loam; massive; very hard (dry), very friable (moist), non sticky and non plastic; many, very fine, continuous, irregular pores; many, very fine roots; gradual, smooth boundary; pH 6.7
A12	16 - 23	Very dark grayish brown (10 YR 3/2 m) to dark brown (10 YR 3/3 m) fine sandy loam; massive; very hard (dry), very friable (moist), non sticky and non plastic; very fine, continuous, irregular pores; few, very fine roots; abrupt, smooth boundary; pH 6.8
B21	23 - 50	Dark reddish brown (5 YR 3/3 m) sandy clay; strong, medium, subangular blocky structure; very firm (moist), sticky and plastic; continuous, thin cutanes, probably of clay minerals, mainly on horizontal and vertical ped faces; few, very fine, discontinuous, irregular pores; few insect nests; few, very fine roots; abrupt, smooth boundary; pH 7.2
B22	50 - 67	Reddish brown (5 YR 4/4 m) gravelly sandy clay loam; massive; many, angular gravels of limestone, constituting approximately 85 percent of the horizon; pH 7.3

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REFORM DIRECTORATE OF SOILS
DEPARTMENT OF SOIL SURVEY

SOIL SERIES _____ TAXONOMY _____ SOIL No SP - 3

LOCATION _____ LAB Nos 1082 - 1096 - 1067 - 1097 - 1056 - 1134

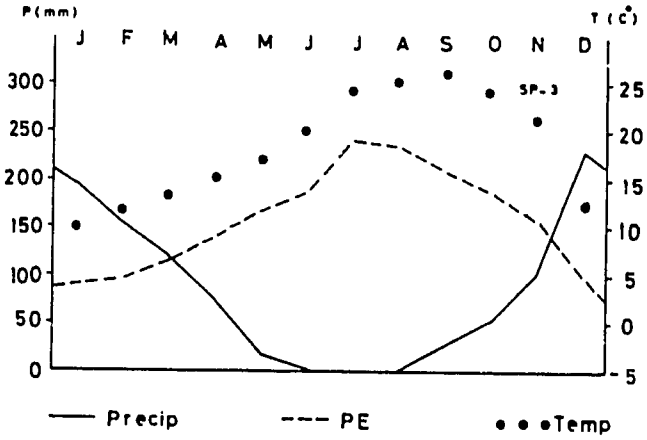
Depth (cm)	Horizon	Size Class and particle diameter (mm)																Texture class
		Total			Sand					Silt					Coarse fragments			
		Sand (2-0.05)	Silt (0.05-0.002)	Clay (<0.002)	Very coarse (2 - 1)	Coarse (1 - 0.5)	Medium (0.5 - 0.25)	Fine (0.25 - 0.1)	Very fine (0.1 - 0.05)	0.05 - 0.02	0.02 - 0.002				>2 % of whole soil	2 - 19%	19 -76 %	
		%, of < 2 mm														of <76 mm		
0- 12	A11	29	31	40														CL
12- 20	A12	34	32	34														CL
20- 48	B2	nd	nd	nd														-
48- 60	B3	33	31	36														CL
60- 80	C1	36	31	33														CL
80-125	C2	37	30	33														CL

Depth (cm)	Organic Carbon %	Nitrogen %	C / N	Ext. Iron as Fe %	Carbonate as Ca Co 3		Bulk Density			COLE	Water Contents					pH		
					< 2 mm	< 0.002 mm	1/3 bar	ovendry			1/3 bar	15 bar				Satur. paste	H_2O /	K Cl /
					%,		g / cc				%,							
0- 12	1.8				29.0						27.3	12.4					7.1	
12- 20	.9				55.0						24.6	11.0					7.0	
20- 48	1.4				40.5												7.3	
48- 60	.8				1.0						25.4	11.4					7.0	
60- 80	.5				72.5						24.0	10.6					7.2	
80-125	.3				60.0						23.8	10.6					7.6	

Depth (cm)	Extractable Bases					Ext Acidity	C. E. C.			Ext. Al me / 100 g	Ratios to clay			Ca/ Mg	Total Solu. Salts ppm		Base saturation	
	Ca	Mg	Na	K	Sum		Sum of Cations	Na OAc			C. E. C	Ext. Fe	15 bar water				Sum of Cations	Na OAc
	me / 100 g																%	
0- 12			1.5	168.5				67.5			1.7		.3					100.0
12- 20			1.1	52.5				52.5			1.5		.3					100.0
20- 48			1.3	82.3				57.5										100.0
48- 60			1.2	58.5				47.5			1.3		.3					100.0
60- 80			.2	48.3				52.5			1.6		.3					100.0
80-125			.5	23.5				56.2			1.7		.3					100.0

Depth (cm)	Electrical Conductivity mmho / cm	Water Extract From Saturated Paste								Water at Satur %,	ESP %/	SAR	CSP %,	Gypsum %,	Ext P_2O_5 ppm	Available Nutrients		
		Cations																
		Ca	Mg	Na	K	CO 3	HCO 3	Cl	SO 4							Ca	Mg	K
		me / liter														mg / 100 g		
0- 12	.4										2.2	.2	100.0			30.0		>100
12- 20	.5										2.1	.2	100.0			30.0		>100
20- 48	.4										2.3	.2	100.0			24.0		>100
48- 60	.4										2.5	.2	100.0			24.9		>100
60- 80	.2										.4	.0	100.0			24.0		>100
80-125	.4										.9	.1	100.0			18.0		>100

: Classification: Typic Xerochrept; fine loamy, mixed, thermic.
Location: Tartous province, Syria. Approximately 25 km southeast of Tartous, 4 km east of Kharabeh to Tell Kalakh; approximate coordinates 34o 43' N latitude and 35o 59' E longtitude.
Physiographic Position: On the back slope of low, gently sloping hills; elevation about 37 m.a.s.l.
Topography: Gently sloping with a characteristic slope of 4 percent towards northeast.
Drainage: Well drained, medium run-off, moderate permeability.
Vegetation: Olives.
Parent Material: Pliocene Limestone.
Sampled by: H. Yuksel, R. Rizek and S. Darwish on June 19, 1980
Soil No.: SP - 3



Hori.	Depth (cm)	Description
A11	0 - 12	Very dark grayish brown (10 YR 3/2 m) to very dark gray (10 YR 3/2 d) clay loam; moderate, medium, subangular blocky structure breaking to strong, medium, granular structure; very hard (dry), firm (moist), sticky and plastic; many, very fine and fine, continuous, vertical, open pores; common, fine and medium roots mostly inside peds; clear, smooth boundary; pH 7.1
A12	12 - 20	Very dark gray (10 YR 3/2 m to 10 YR 3/1 d) clay loam; weak, medium, subangular blocky structure; breaking to moderate, medium, granular structure; very hard (dry), firm (moist), sticky and plastic; many, very fine and fine, continuous, vertical, open pores; common, fine and medium roots, mainly inside and between peds; clear, smooth boundary; pH 7.0
B2	20 - 48	Very dark gray (10 YR 3/1 m) clay loam; strong, medium, subangular blocky structure; very firm (moist), very sticky and very plastic; continuous, thin cutanes, probably of clay minerals, mainly on horizontal and vertical ped faces; few, fine, continuous, vertical, open pores; few, fine roots, mainly inside and between peds; clear, smooth boundary; pH 7.3
B3	48 - 60	Brown (10 YR 5/3 m) clay loam; weak, medium, subangular blocky structure; friable (moist), slightly sticky and slightly plastic; few, fine, continuous, vertical, open pores; common, fine and medium roots, mainly between peds; diffuse, smooth boundary; pH 7.0
C1	60 - 80	Yellowish brown (10 YR 5/4 m) clay loam; massive; friable (moist), slightly sticky and slightly plastic; few, coarse, discontinuous, open pores; few, angular limestone fragments and stones, constituting approximately 10 percent of the horizon; diffuse, smooth boundary; pH 7.2
C2	80 - 126	Light yellowish brown (2.5 YR 6/4 m) clay loam; massive; friable (moist), sticky and plastic; few, fine, discontinuous, vertical, open pores; many, angular limestone fragments, constituting approximately 25 percent of the horizon; pH 7.6

SYRIAN ARAB REBUBLIC
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REFORM DIRECTORATE OF SOILS
DEPARTMENT OF SOIL SURVEY

SOIL SERIES _____ TAXONOMY _____ SOIL No SP - 4

LOCATION _____ LAB Nos 1106 - 1109

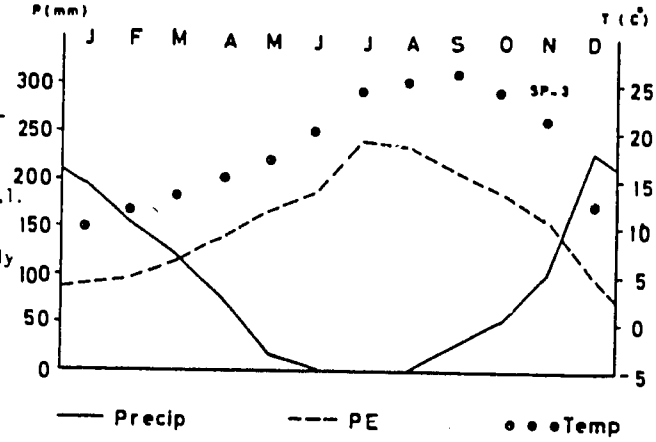
Depth (cm)	Horizon	Size Class and particle diameter (mm)																
		Total			Sand					Silt					Coarse fragments			
		Sand (2-0.05)	Silt (0.05-0.002)	Clay (<0.002)	Very coarse (2-1)	Coarse (1-0.5)	Medium (0.5-0.25)	Fine (0.25-0.1)	Very fine (0.1-0.05)	0.05-0.02	0.02-0.002				>2 % of whole soil	2-19 %	19-76 %	Texture class
		% of < 2 mm													% of <76 mm			
0- 6	A1	72	17	11														SL
6- 26	C	50	37	13														L

Depth (cm)	Organic Carbon %	Nitrogen %	C / N	Ext. Iron as Fe %	Carbonate as $CaCO_3$		Bulk Density		COLE	Water Contents				pH		
					<2 mm	<0.002 mm	1/3 bar	ovendry		1/3 bar	15 bar			Satur paste	H_2O	KCl
					%		g / cc			%						
0- 6	.6				.5	16.3				11.5	4.1				6.5	
6- 26	.7				.5	11.2				15.3	6.1				7.1	

Depth (cm)	Extractable Bases					Ext Acidity	C. E. C.			Ext. Al me / 100 g	Ratios to clay				Total Solu. Salts ppm		Base saturation	
	Ca	Mg	Na	K	Sum		Sum of Cations	Na OAc			C. E. C	Ext. Fe	15 bar water	Ca / Mg			Sum of Cations	Na OAc
	me / 100 g																%	
0- 6			1.4	422.5				45.0			4.1		.4					100.0
6- 26			2.4	467.5				62.0			4.8		.5					100.0

Depth (cm)	Electrical Conductivity mmho / cm	Water Extract From Saturated Paste								Water at Satur %	ESP %	SAR	CSP %	Gypsum %	Ext P_2O_5 ppm	Available Nutrients		
		Cations														Ca	Mg	K
		Ca	Mg	Na	K	CO_3	HCO_3	Cl	SO_4							mg / 100 g		
		me / liter																
0- 6	.4										3.1	.1	100.0		21.6	9.4		>100
6- 26	1.8										3.9	.2	100.0		25.7	34.1		>100

Classification: Lithic Xerorthent; coarse loamy, mixed, thermic.
Location: Tartous province, Syria. Approximately 35 km southeast of Tartous, 1 km south of Safsafi, 15 m east of the road from Safsafi to Tartous; approximate coordinates 34o 43' N latitude and 36o 30' E longtitude.
Physiographic Position: Moderately steep summit and shoulder of high hills; elevation about 130 m.a.s.l.
Topography: Hilly topography with a characteristic slope of 30 percent towards north.
Drainage: Well drained, rapid surface run-off, moderately rapid permeability.
Vegetation: Olives.
Parent Material: Pliocene Basalt.
Sampled by: H. Yuksel, R. Rizek and S. Darwish on June 19, 1980
Soil No.: SP - 4



Hori.	Depth (cm)	Description
A1	0 - 6	Very dark grayish brown (10 YR 3/2 m) to dark brown (10 YR 4/3 d) gravelly sandy loam; weak, medium, granular structure; hard (dry), very friable (moist), non sticky and non plastic; few, medium, continuous, vertical, simple pores; abundant, angular gravels, constituting approximately 50 percent of the horizon; few insect nests; many, fine roots; clear, smooth boundary; pH 5.5
C	6 - 26	Very dark brown (10 YR 2/3 m) to dark brown (10 YR 4/3 d) gravelly loam; weak, medium, subangular blocky structure; hard (dry), friable (moist), slightly sticky and slightly plastic; few, medium and coarse, continuous, simple pores; abundant angular gravel, constituting approximately 40 percent of the horizon; many, very fine and medium roots; abrupt, broken boundary to the bedrock; pH 7.1
R	26+	Pliocene Basalt.

SYRIAN ARAB REBUBLIC
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DEPARTMENT OF SOIL SURVEY

SOIL SERIES _____ TAXONOMY _____ SOIL No SP - 5

LOCATION _____ LAB Nos. 0 - 0 - 0

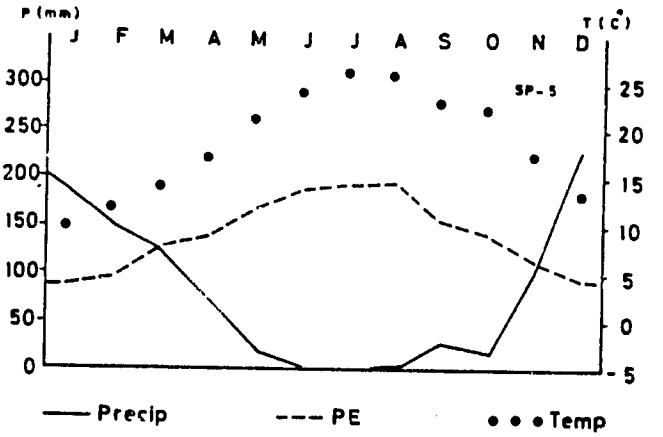
Depth (cm)	Horizon	Size Class and particle diameter (mm) — Total: Sand (2-0.05)	Total: Silt (0.05-0.002)	Total: Clay (<0.002)	Sand: Very coarse (2-1)	Sand: Coarse (1-0.5)	Sand: Medium (0.5-0.25)	Sand: Fine (0.25-0.1)	Sand: Very fine (0.1-0.05)	Silt: 0.05-0.02	Silt: 0.02-0.002	Coarse fragments: >2 % of whole soil	Coarse fragments: 2-19 % of <76 mm	Coarse fragments: 19-76 % of <76 mm	Texture class
		% of < 2 mm													
0- 7	A1	48	31	21											L
7- 24	B2	42	26	32											CL
24- 38	C	54	19	27											SCL

Depth (cm)	Organic Carbon %	Nitrogen %	C / N	Ext. Iron as Fe %	Carbonate as $CaCO_3$ <2 mm %	Carbonate as $CaCO_3$ <0.002 mm %	Bulk Density 1/3 bar g/cc	Bulk Density ovendry g/cc	COLE	Water Contents 1/3 bar %	Water Contents 15 bar %	pH Satur. paste	pH H_2O	pH KCl
0- 7	.3				.5	15.2				18.2	7.6		6.3	
7- 24	3.5				tr	18.0				22.8	10.0		6.4	
24- 38	.5				.5	tr				19.4	8.2		6.4	

Depth (cm)	Extractable Bases Ca	Mg	Na	K	Sum (me / 100 g)	Ext Acidity	C.E.C Sum of Cations	C.E.C Na OAc	Ext. Al me / 100 g	Ratios to clay C.E.C	Ratios to clay Ext. Fe	Ratios to clay 15 bar water	Ca/Mg	Total Soluble Salts ppm	Base saturation Sum of Cations %	Base saturation Na OAc %
0- 7			.8	56.2				57.5		2.7		.4				100.0
7- 24			1.0	37.5				60.0		1.9		.3				100.0
24- 38			11.2	38.2				85.0		3.1		.3				100.0

Depth (cm)	Electrical Conductivity mmho / cm	Water Extract From Saturated Paste — Cations: Ca	Mg	Na	K	CO_3	HCO_3	Cl	SO_4 (me / liter)	Water at Satur %	ESP %	SAR	CSP %	Gypsum %	Ext P_2O_5 ppm	Available Nutrients Ca (mg / 100 g)	Mg	K
0- 7	.4										1.4	.1	100.0		18.7	16.5		>100
7- 24	.3										1.7	.2	100.0		20.5	22.0		>100
24- 38	.4										13.2	2.0	100.0		tr	12.2		>100

Classification: Lithic Xerochrept; fine loamy, thermic.
Location: Tartous province, Syria. Approximately 35 km southeast of Tartous, 3 km south of Safsafi, 250 m south of the road from Tartous to Homs. Approximate coordinates 34o 43'N latitude and 36o 04' E longitude.
Physiographic Position: Middle slope of gently rolling hills; elevation about 60 m.a.s.l.
Topography: Moderately sloping topography with a characteristic slope of 8 percent towards north.
Drainage: Well drained, medium surface run-off, moderate permeability.
Vegetation: Wheat.
Parent Material: Pliocene Basalt.
Sampled by: H. Yuksel, R. Rizek and S. Darwish on June 19, 1980
Soil No.: SP - 5



Hori.	Depth (cm)	Description
A1	0 - 7	Very dark grayish brown (10 YR 3/2 m) to dark brown (10 YR 3/3 d) gravelly loam; moderate, medium, subangular blocky structure, breaking to moderate, fine, granular structure; very hard (dry), firm (moist), slightly sticky and slightly plastic; many, fine and medium, discontinuous, vertical, open pores; abundant, rounded and subrounded gravel, constituting approximately 40 percent of the horizon; clear, smooth boundary; pH 6.3
B2	7 - 24	Very dark grayish brown (10 YR 3/2 m) to dark brown (10 YR 3/3 d) clay loam; moderate, medium, subangular blocky structure; very hard (dry), firm (moist), slightly sticky and slightly plastic; few, fine, discontinuous, vertical, open pores; few, subrounded gravel, constituting approximately 10 percent of the horizon; clear, smooth boundary; pH 6.4
C	24 - 38	Very dark grayish brown (10 YR 3/2 m) sandy clay loam; weak, medium, subangular blocky structure; very firm (moist), very sticky and very plastic; few, fine, discontinuous, open pores; few, rounded and subrounded gravel, constituting approximately 10 percent of the horizon; clear, broken boundary to the bedrock; pH 6.4
R	38+	Pliocene Basalt; partially weathered.

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MINISTRY OF AGRICULTURE AND AGRARIAN
REFORM DIRECTORATE OF SOILS
DEPARTMENT OF SOIL SURVEY

SOIL SERIES _____ TAXONOMY _____ SOIL No SP - 7

LOCATION _____ LAB Nos 1074 - 1115 - 1099 - 1048

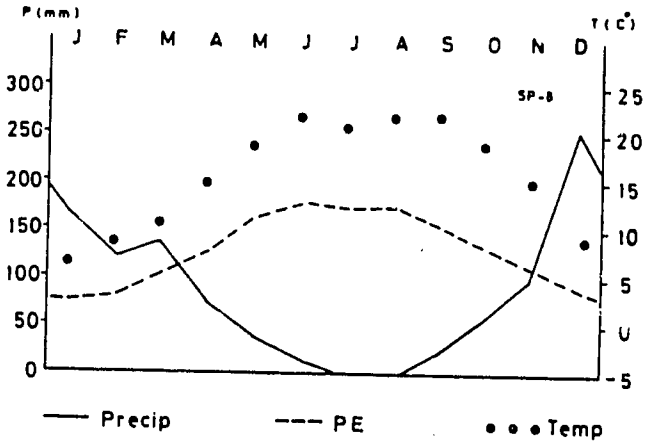
Depth (cm)	Horizon	Size Class and particle diameter (mm)																Texture class
		Total			Sand					Silt					Coarse fragments			
		Sand (2-0.05)	Silt (0.05-0.002)	Clay (<0.002)	Very coarse (2-1)	Coarse (1-0.5)	Medium (0.5-0.25)	Fine (0.25-0.1)	Very fine (0.1-0.05)	0.05-0.02	0.02-0.002				>2 % of whole soil	2-19 %	19-76 %	
		%, of < 2 mm													% of <76 mm			
0-20	A11	28	38	34														CL
20-40	A12	31	43	26														CL
40-88	B21	31	31	38														CL
88-140	B22	25	39	36														CL

Depth (cm)	Organic Carbon %	Nitrogen %	C / N	Ext. Iron as Fe %	Carbonate as $CaCO_3$		Bulk Density			COLE	Water Contents				pH		
					<2 mm	<0.002 mm	1/3 bar	ovendry			1/3 bar	15 bar			Satur paste	H_2O	KCl
					%,		g / cc				%,						
0-20	1.1				2.0	20.2					25.5	11.4				6.6	
20-40	1.8				tr	11.3					22.4	9.8				6.8	
40-88	.3				1.0	29.8					26.4	11.9				6.4	
88-140	1.1				1.0	tr					26.6	12.0				6.5	

Depth (cm)	Extractable Bases					Ext Acidity	C. E. C.		Ext. Al me / 100 g	Ratios to clay			Ca / Mg	Total Solu. Salts ppm	Base saturation	
	Ca	Mg	Na	K	Sum		Sum of Cations	Na OAc		C. E. C	Ext. Fe	15 bar water			Sum of Cations	Na OAc
	me / 100 g														%	
0-20			1.2	48.0				45.0		1.3		.3				100.0
20-40			.1	197.5				30.0		1.9		.4				100.0
40-88			1.7	68.7				67.5		1.8		.3				100.0
88-140			9.5	38.7				70.0		1.9		.3				100.0

Depth (cm)	Electrical Conductivity mmho / cm	Water Extract From Saturated Paste								Water at Satur %	ESP %	SAR	CSP %	Gypsum %	Ext P_2O_5 ppm	Available Nutrients		
		Cations																
		Ca	Mg	Na	K	CO_3	HCO_3	Cl	SO_4							Ca	Mg	K
		me / liter														mg / 100 g		
0-20	.4										2.7	.2	100.0		22.5	11.5		>100
20-40	2.0										.2	.0	100.0		22.5	33.5		>100
40-88	.5										2.5	.3	100.0		27.8	26.0		>100
88-140	.4										13.6	1.8	100.0		tr	13.5		>100

Classification: Typic Haploxeroll; fine loamy, mixed, thermic.
Location: Homs province, Syria. Approximately 45 km east of Tartous, 45 km west of Homs, 1km west of Talkalakh, 10 m north of the road from Homs to Tartous; approximate coordinates 34o 40' N Latitude and 36o 15' longtitude.
Physiographic Position: Foot slopes of moderately steep hills; elevation about 350 m.a.s.l.
Topography: Hilly topography with a characteristic slope of 15 percent towards south.
Drainage: Well drained, rapid surface run-off, moderate permeability.
Parent Material: Quaternary or more recent coluvium derived mainly from Pliocene Basalt.
Sampled by: H. Yuksel, R. Rizek and S. Darwish on June 19, 1980
Soil No.: SP -7



Hori.	Depth (cm)	Description
A11	0 - 20	Very dark brown (10 YR 2/3 m) and very dark grayish brown (10 YR 3/2 d) clay loam; moderate, fine, subangular blocky structure, breaking to moderate, medium granular structure; approximately 1 cm wide craks extending up to 20 cm; very hard (dry), firm (moist), sticky and plastic; many fine and few medium, continuous, vertical, open pores; many, fine and medium roots; gradual, smooth boundary; pH 6.6
A12	20 - 40	Very dark brown (10 YR 2/2 m) and very dark grayish brown (10 YR 3/2 d) clay loam; moderate, coarse, subangular blocky structure; very hard (dry), firm (moist), sticky and plastic; many, fine and medium, continuous, vertical, open pores; few, fine roots; abrupt, smooth boundary; pH 6.8
B21	40 - 88	Very dark brown (10 YR 2/2 m) and very dark grayish brown (10 YR 3/2 d) gravelly clay loam; strong, medium, subangular blocky structure; very hard (dry), firm (moist), very sticky and very plastic; patchy, thin cutanes, probably of clay minerals mainly on horizontal ped faces; abundant, subrounded and angular gravels and stones, constituting approximately 60 percent of the horizon; common, medium roots mostly between peds; gradual, smooth boundary; pH 6.4
B22	88 - 140	Dark brown (7.5 YR 3/2 m) clay loam; strong, coarse, subangular blocky structure; very firm (moist), very sticky and very plastic; continuous, moderate, thick cutanes probably of clay minerals, mainly on horizontal ped faces and on voids; few, fine, continuous, vertical, open pores; pH 6.5

SYRIAN ARAB REBUBLIC
MINISTRY OF AGRICULTURE AND AGRARIAN
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DEPARTMENT OF SOIL SURVEY

SOIL SERIES _____ TAXONOMY _____ SOIL No SP - 8

LOCATION _____ LAB Nos. 1122 - 1127 - 1118 - 1120 - 1105

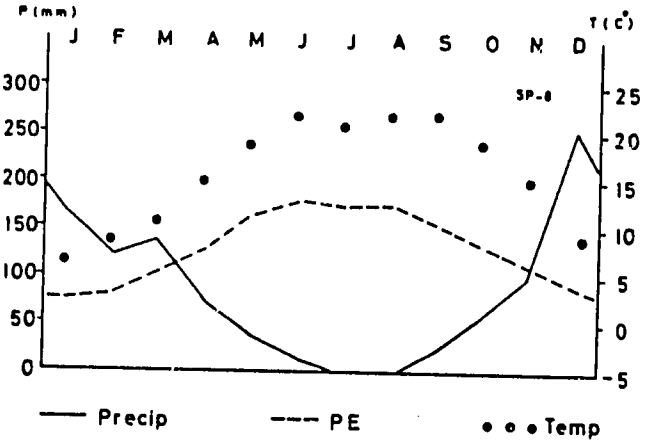
Depth (cm)	Horizon	Size Class and particle diameter (mm) — Total: Sand (2-0.05)	Total: Silt (0.05-0.002)	Total: Clay (<0.002)	Sand: Very coarse (2-1)	Sand: Coarse (1-0.5)	Sand: Medium (0.5-0.25)	Sand: Fine (0.25-0.1)	Sand: Very fine (0.1-0.05)	Silt: 0.05-0.002	Silt: 0.02-0.002	Coarse fragments: >2 % of whole soil	Coarse fragments: 2-19 % of <76 mm	Coarse fragments: 19-76 % of <76 mm	Texture class
		% of < 2 mm													
0- 18	AP	31	38	41											C
18- 36	B21	32	26	42											C
36- 65	B22	31	25	44											C
65- 73	B3	13	29	58											C
73- 89	C	21	33	46											C

Depth (cm)	Organic Carbon %	Nitrogen %	C / N	Ext. Iron as Fe %	Carbonate as $CaCO_3$ <2 mm %	Carbonate as $CaCO_3$ <0.002 mm %	Bulk Density 1/3 bar g/cc	Bulk Density ovendry g/cc	COLE	Water Contents 1/3 bar %	Water Contents 15 bar %	pH Satur. paste	pH H_2O	pH KCl
0- 18	1.1				25.0					29.1	13.3		7.1	
18- 36	.8				23.0					27.5	12.5		7.3	
36- 65	11.3				19.5					28.4	12.9		7.4	
65- 73	.3				34.0					35.6	16.7		7.3	
73- 89	.5				45.0					30.5	14.0		7.2	

Depth (cm)	Extractable Bases Ca (me/100 g)	Mg	Na	K	Sum	Ext Acidity	C.E.C. Sum of Cations	C.E.C. Na OAc	Ext Al me/100 g	Ratios to clay C.E.C	Ratios to clay Ext. Fe	Ratios to clay 15 bar water	Ca/Mg	Total Solu. Salts ppm	Base saturation Sum of Cations %	Base saturation Na OAc %
0- 18			.7	101.7				85.0		2.1		.3				100.0
18- 36			.8	73.2				91.2		2.2		.3				100.0
36- 65			1.1	72.5				70.0		1.6		.3				100.0
65- 73			.7	72.5				65.0		1.1		.3				100.0
73- 89			.6	33.7				45.0		1.0		.3				100.0

Depth (cm)	Electrical Conductivity mmho/cm	Water Extract From Saturated Paste: Cations Ca (me/liter)	Mg	Na	K	CO_3	HCO_3	Cl	SO_4	Water at Satur. %	ESP %	SAR	CSP %	Gypsum %	Ext P_2O_5 ppm	Available Nutrients Ca (mg/100 g)	Mg	K
0- 18	.5										.8	.1	100.0		tr	22.0		>100
18- 36	.3										.9	.1	100.0		tr	29.5		>100
36- 65	.4										1.6	.2	100.0		tr	23.0		>100
65- 73	.3										1.1	.1	100.0		24.8	31.0		>100
73- 89	.4										1.3	.1	100.0		tr	4.2		>100

Classification: Typic Xerochrept; fine, mixed, thermic.
Location: Lattakia province, Syria. Approximately 1 km northeast of Lattakia, 1 km northeast of Soubine, 50 m southeast of the road from Lattakia to Karsana; approximate coordinates 35o 34' N latitude and 35o 50' E longtitude.
Physiographic Position: Gently undulating summits of low hills; elevation about 105 m.a.s.l.
Topography: Gently sloping topography with a characteristic slope of 3 percent towards east.
Drainage: Well drained, slow surface run-off, moderately slow permeability.
Vegetation: Olives.
Parent Material: Pliocene marls and Limestones.
Sampled by: H. Yuksel, R. Rizek and S. Kabbas on June 21, 1980
Soil No.: SP - 8



Hori.	Depth (cm)	Description
Ap	0 - 18	Very dark gray (10 YR 3/1 m) to dark grayish brown (10 YR 4/2 d) clay; moderate, medium, subangular blocky structure; slightly hard (dry), very firm (moist), very sticky and plastic; many, fine to coarse, vertical, irregular open pores; few angular gravels and limestone fragments; common, fine and medium roots; clear, smooth boundary; pH 7.1
B21	18 - 30	Dark grayish brown (10 YR 4/1 m) clay; strong, medium, subangular blocky structure; firm (moist), very sticky and plastic; continuous thin cutanes, probably of clay minerals, mostly on horizontal and vertical ped faces; few, fine, vertical, irregular open pores; few rounded and subrounded gravels, constituting 10 percent of the horizon; few, fine and medium roots; gradual, smooth boundary; pH 7.3
B22	30 - 65	Very dark gray (10 YR 3/1 m) clay; moderate, medium, subangular blocky structure; firm (moist), very sticky and very plastic; continuous thin cutanes, probably of clay minerals, mainly on horizontal and vertical ped faces; few, fine, vertical, irregular open pores; few, fine and medium roots; gradual, smooth boundary; pH 7.4
B3	65 - 73	Dark grayish brown (10 YR 4/2 m) clay; weak, fine, subangular blocky structure; firm (moist), very sticky and very plastic; broken thin cutanes, probably of clay minerals, mainly on horizontal and vertical ped faces; few, fine, open pores; few, very fine roots; clear, smooth boundary; pH 7.3
C	73 - 89	Weak red (2.5 YR 5/2 m) clay; weak, fine, subangular blocky structure; firm (moist), very sticky and very plastic; few, very fine and fine, vertical, irregular pores; few, very fine and fine roots; pH 7.2
R	89+	Saprolite of pliocene limestone and/or marl.

SYRIAN ARAB REBUBLIC
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DEPARTMENT OF SOIL SURVEY

SOIL SERIES _____ TAXONOMY _____ SOIL No SP - 9

LOCATION _____ LAB Nos 1107 - 1126 - 1058

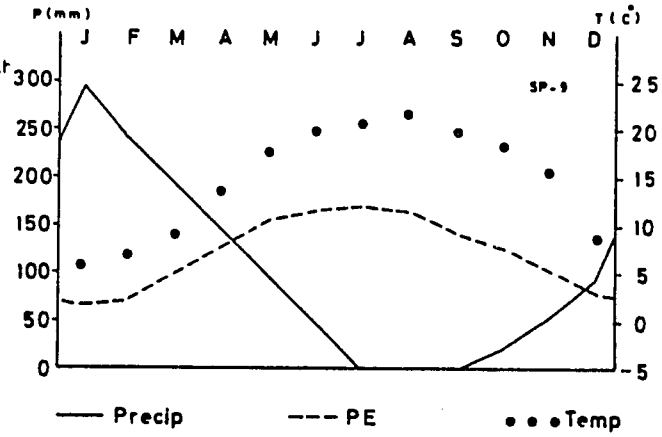
Depth (cm)	Horizon	Size Class and particle diameter (mm) — Total: Sand (2-0.05)	Total: Silt (0.05-0.002)	Total: Clay (<0.002)	Sand: Very coarse (2-1)	Sand: Coarse (1-0.5)	Sand: Medium (0.5-0.25)	Sand: Fine (0.25-0.1)	Sand: Very fine (0.1-0.05)	Silt: 0.05-0.02	Silt: 0.02-0.002	Coarse fragments: >2 % of whole soil	Coarse fragments: 2-19 % of <76 mm	Coarse fragments: 19-76 % of <76 mm	Texture class
		% of < 2 mm													
0- 2	A1	24	22	54											C
2- 16	B2	38	21	41											C
16- 32	C	24	28	48											C

Depth (cm)	Organic Carbon %	Nitrogen %	C / N	Ext Iron as Fe %	Carbonate as $CaCO_3$ <2 mm %	Carbonate as $CaCO_3$ <0.002 mm %	Bulk Density 1/3 bar g/cc	Bulk Density ovendry g/cc	COLE	Water Contents 1/3 bar %	Water Contents 15 bar %	pH Satur paste	pH H_2O	pH KCl
0- 2	.8				1.0					32.7	15.2		6.5	
2- 16	.9				8.0					26.3	11.9		6.2	
16- 32	.6				19.0					30.7	14.2		7.2	

Depth (cm)	Extractable Bases Ca (me/100 g)	Mg	Na	K	Sum	Ext Acidity	C.E.C Sum of Cations	C.E.C Na OAc	Ext. Al me/100 g	Ratios to clay C.E.C	Ratios to clay Ext. Fe	Ratios to clay 15 bar water	Ca/Mg	Total Solu. Salts ppm	Base saturation Sum of Cations %	Base saturation Na OAc %
0- 2			tr	222.5				50.0		.9		.3				100.0
2- 16			.8	123.7				57.5		1.4		.3				100.0
16- 32			.4	121.7				53.7		1.1		.3				100.0

Depth (cm)	Electrical Conductivity mmho/cm	Water Extract From Saturated Paste — Cations: Ca (me/liter)	Mg	Na	K	CO_3	HCO_3	Cl	SO_4	Water at Satur %	ESP %	SAR	CSP %	Gypsum %	Ext P_2O_5 ppm	Available Nutrients Ca (mg/100 g)	Mg	K
0- 2	.7										tr	tr	100.0		16.0	24.2		>100
2- 16	.4										1.4	.1	100.0		tr	77.0		>100
16- 32	.4										.7	.1	100.0		tr	23.9		>100

Classification: Lithic Xerochrept; fine, mixed, thermic.
Location: Lattakia province, Syria. Approximately 31 km north of Lattakia, 15 km south of Kassab, 15 m north of the road from Lattakia to the Turkish border; approximate coordinates 35o 48' N latitude and 35o 57' E longtitude.
Physiographic Position: Foot slopes of high mountains; elevation about 240 m.a.s.l.
Topography: Steep topography with a characteristic slope of 30 percent towards east.
Drainage: Well drained, rapid surface run-off, moderately slow permeability.
Parent Material: Undifferentiated complex of volcanic rocks of Mesozoic era.
Sampled by: H. Yuksel, R. Rizek and S. Kabbas.
Soil No.: SP - 9



Hori.	Depth (cm)	Description
A1	0 - 2	Dark brown (7.5 YR 3/2 m) to brown (7.5 YR 5/2 d) clay; weak, fine, subangular blocky structure; very hard (dry), firm (moist), sticky and plastic; many, very fine and fine, continuous, vertical, irregular, open pores; few, angular gravels, constituting approximately 10 percent of the horizon; many, fine and medium roots; clear, smooth boundary; pH 6.5
B2	2 - 16	Dark reddish brown (5 YR 3/2 m) to dark reddish gray (5 YR 4/2 d) clay; moderate, medium, subangular blocky structure; very hard (dry), firm (moist), sticky and slightly plastic; many fine and few medium, continuous, vertical, irregular, open pores; few angular gravels and stones, constituting approximately 10 percent of the horizon; many, fine and medium roots; gradual, irregular boundary; pH 6.2
C	16 - 32	Dark gray (5 YR 4/1 m) to gray (5 YR 5/1 d) clay; massive; hard (dry), firm (moist), sticky and plastic; few, fine, continuous, vertical, irregular, open pores; few, angular stones and gravels, constituting approximately 6 percent of the horizon; many, medium to coarse roots; diffuse, broken boundary to the bedrock; pH 7.2
R	32+	Undifferentiated volcanic rocks of Mesozoic era.

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DEPARTMENT OF SOIL SURVEY

SOIL SERIES _____ TAXONOMY _____ SOIL No SP - 10

LOCATION _____ LAB Nos. 1114 - 1091 - 1076 - 1088

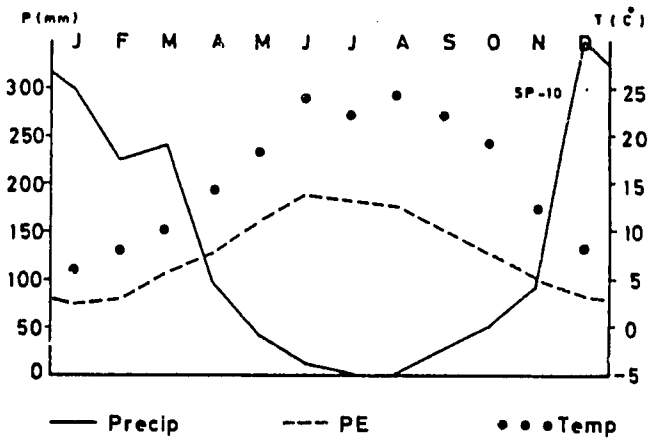
Depth (cm)	Horizon	Size Class and particle diameter (mm)																Texture class
		Total			Sand					Silt					Coarse fragments			
		Sand (2-0.05)	Silt (0.05-0.002)	Clay (<0.002)	Very coarse (2-1)	Coarse (1-0.5)	Medium (0.5-0.25)	Fine (0.25-0.1)	Very fine (0.1-0.05)	0.05-0.02	0.02-0.002				>2 % of whole soil	2-19 %	19-76 %	
		% of < 2 mm													% of <76 mm			
0-11	A1	31	16	53														C
11-21	B21	35	25	40														CL
21-38	B22	35	19	46														C
38-56	C	43	30	27														CL

Depth (cm)	Organic Carbon %	Nitrogen %	C / N	Ext Iron as Fe %	Carbonate as Ca Co 3		Bulk Density			COLE	Water Contents					pH		
					<2 mm	<0.002 mm	1/3 bar	ovendry			1/3 bar	15 bar				Satur paste	H_2O 1/	K Cl 1/
					%		g / cc				%							
0-11	1.3				tr	40.7					31.4	14.5					6.8	
11-21	4.2				2.0	30.0					26.4	11.9					6.2	
21-38	1.1				2.5	20.6					28.4	13.0					6.3	
38-56	1.1				.5	16.4					21.0	9.1					6.2	

Depth (cm)	Extractable Bases					Ext Acidity	C. E. C.			Ext. Al me / 100 g	Ratios to clay			Ca / Mg	Total Solu. Salts ppm		Base saturation	
	Ca	Mg	Na	K	Sum		Sum of Cations	Na OAc			C. E. C	Ext. Fe	15 bar water				Sum of Cations	Na OAc
	me / 100 g																%	
0-11			.3	42.5				72.5			1.4		.3					100.0
11-21			.6	150.0				62.5			1.6		.3					100.0
21-38			.6	297.5				37.5			.8		.3					100.0
38-56			.6	282.5				50.0			1.9		.3					100.0

Depth (cm)	Electrical Conductivity mmho / cm	Water Extract From Saturated Paste								Water at Satur %	ESP %	SAR	CSP %	Gypsum %	Ext P_2O_5 ppm	Available Nutrients		
		Cations																
		Ca	Mg	Na	K	CO 3	HCO 3	Cl	SO 4							Ca	Mg	K
		me / liter														mg / 100 g		
0-11	.6										.4	.1	100.0		3.7	15.2		>100
11-21	.3										1.0	.1	100.0		9.6	20.0		>100
21-38	1.0										1.6	.0	100.0		8.2	16.0		>100
38-56	.6										1.2	.1	100.0		12.0	20.0		>100

Classification: Typic Haploxeralf; fine, mixed, thermic.
Location: Lattakia province, Syria. Approximately 45 km north of Lattakia, 5 km south of Kassab, 10 m east of the highway from the Turkish border to Lattakia; approximate coordinates 35o 53' N latitude and 35o 59' E Longtitude.
Physiographic Position: Middle slopes of high mountains; elevation about 480 m.a.s.l.
Topography: Mountainous topography with a slope in excess of 100 percent towards west.
Drainage: Well drained, rapid surface run-off, slow permeability.
Parent Material: Undifferentiated complex of volcanic rocks of Mesozoic era.
Sampled by: H. Yuksel, R. Rizek and S. Kabbas on June 21, 1980
Soil No.: SP - 10



Hori.	Depth (cm)	Description
A1	0 - 11	Dark reddish brown (5 YR 2/2 m) and dark brown (7.5 YR 3/2 d) clay; moderate, medium, subangular blocky structure, breaking to strong, medium, granular structure; very hard (dry), very firm (moist), sticky and plastic; many fine and few medium, discontinuous, vertical, irregular, open pores; frequent angular gravels and stones, constituting approximately 20 percent of the horizon; many fine to medium roots; gradual, smooth boundary; pH 6.8
B21	11 - 21	Dark reddish brown (5 YR 3/3 m) clay; moderate, medium, subangular blocky structure; very hard (dry), very firm (moist), sticky and plastic; many fine and few medium, discontinuous, vertical, irregular, open pores; few angular gravels, constituting approximately 10 percent of the horizon; many, fine to medium roots; gradual, smooth boundary; pH 6.2
B22	21 - 38	Dark reddish brown (5 YR 3/3 m) clay; strong, medium to coarse, subangular blocky structure; very hard (dry), very firm (moist), sticky and plastic; continuous thin cutanes probably of clay minerals, mostly on horizontal ped faces; few, fine, discontinuous, vertical, open pores; few, angular gravels and stones constituting approximately 12 percent of the horizon; many, fine and medium roots; diffuse, smooth boundary; pH 6.3
C	38 - 56	Dark reddish brown (5 YR 3/4 m) clay loam; moderate, medium to coarse, subangular blocky structure; very hard (dry), very firm (moist), sticky and plastic; continuous, thin cutanes, probably of clay minerals on mostly horizontal ped faces; few, fine, discontinuous, vertical, open pores; frequent, angular gravels and stones, constituting approximately 35 percent of the horizon; common, medium and fine roots; gradual, broken boundary to the bedrock; pH 6.2
R	56+	Undifferentiated complex volcanic rocks of Mesozoic era.

SYRIAN ARAB REBUBLIC
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DEPARTMENT OF SOIL SURVEY

SOIL SERIES _____ TAXONOMY _____ SOIL No SP - 11

LOCATION _____ LAB Nos 1125

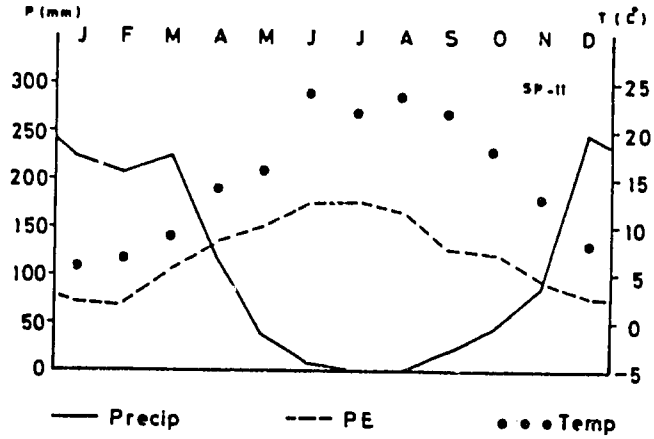
Depth (cm)	Horizon	Size Class and particle diameter (mm) — Total: Sand (2-0.05)	Total: Silt (0.05-0.002)	Total: Clay (<0.002)	Sand: Very Coarse (2-1)	Sand: Coarse (1-0.5)	Sand: Medium (0.5-0.25)	Sand: Fine (0.25-0.1)	Sand: Very fine (0.1-0.05)	Silt: 0.05-0.02	Silt: 0.02-0.002				Coarse fragments: >2 % of whole soil	Coarse fragments: 2-19 %	Coarse fragments: 19-76 %	Texture class
		% of < 2 mm														% of <76 mm		
0- 7	A1	70	17	13														SL

Depth (cm)	Organic Carbon %	Nitrogen %	C / N	Ext Iron as Fe %	Carbonate as Ca Co 3 <2 mm %	Carbonate as Ca Co 3 <0.002 mm %	Bulk Density 1/3 bar g/cc	Bulk Density ovendry g/cc		COLE	Water Contents 1/3 bar %	Water Contents 15 bar %				pH Satur. paste	pH H_2O	pH K Cl
0- 7	3.3				.5	12.6					12.4	4.6					6.5	

Depth (cm)	Extractable Bases me/100 g: Ca	Mg	Na	K	Sum	Ext Acidity	C E C me/100 g: Sum of Cations	Na OAc		Ext. Al me/100 g	Ratios to clay: C E C	Ext. Fe	15 bar water	Ca/Mg	Total Solu. Salts ppm		Base saturation: Sum of Cations %	Na OAc
0- 7			.3	96.7				70.0			5.4		.4					100.0

Depth (cm)	Electrical Conductivity mmho/cm	Water Extract From Saturated Paste — Cations me/liter: Ca	Mg	Na	K	CO 3	HCO 3	Cl	SO 4	Water at Satur %	ESP %	SAR	CSP %	Gypsum %	Ext P_2O_5 ppm	Available Nutrients mg/100 g: Ca	Mg	K
0- 7	.9										.4	.0	100.0	26.8	44.0			>100

Classification: Lithic Xerorthent; coarse loamy, mixed, thermic.
Location: Lattakia province, Syria. Approximately 45 km north of Lattakia, 250 m south of Kassab, 10 m west of the road from Kassab to Lattakia; approximate coordinates 35o 55' N latitude and 35o 59' E longtitude.
Physiographic Position: Middle slope of high hills; elevation about 800 m.a.s.l.
Topography: Hilly topography with a characteristic slope of 15 percent towards north.
Drainage: Well drained, rapid surface run-off, moderately rapid permeability.
Parent Material: Undifferentiated complex of volcanic rocks of Mesozoic era.
Sampled by: H. Yuksel, R. Rizek and S. Kabbas on June 21, 1980
Soil No.: SP - 11



Hori.	Depth (cm)	Description
A1	0 - 7	Dark grayish brown (10 YR 4/2 d) to very dark brown (10 YR 2/2 m) sandy loam; moderate, medium, subangular blocky structure, breaking to moderate fine granular structure; hard (dry), friable (moist), slightly sticky and slightly plastic; many, fine, discontinuous, vertical, irregular, open pores; common, fine roots mainly inside peds; abrupt, broken boundary to the bedrock; pH 6.5
R	7+	Undifferentiated complex of volcanic rocks of Mesozoic era.

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SOIL SERIES _____ TAXONOMY _____ SOIL No SP - 12

LOCATION _____ LAB Nos. 1079 - 1094 - 1127 - 1064

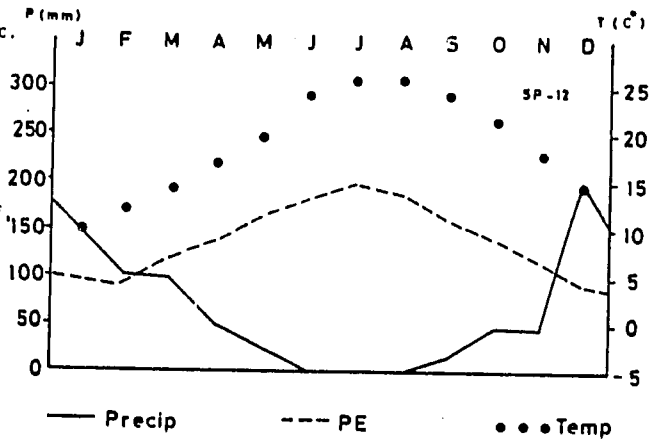
Depth (cm)	Horizon	Size Class and particle diameter (mm)																
		Total			Sand					Silt					Coarse fragments			
		Sand (2-0.05)	Silt (0.05-0.002)	Clay (<0.002)	Very coarse (2-1)	Coarse (1-0.5)	Medium (0.5-0.25)	Fine (0.25-0.1)	Very fine (0.1-0.05)	0.05-0.02	0.02-0.002				>2 % of whole soil	2-19 %	19-76 %	Texture class
		% of < 2 mm														% of <76 mm		
0-13	A1	8	30	62														C
13-65	C1	9	33	58														C
65-110	C2	9	26	65														C
110-125	C3	8	27	65														C

Depth (cm)	Organic Carbon %	Nitrogen %	C / N	Ext Iron as Fe %	Carbonate as Ca Co 3		Bulk Density			COLE	Water Contents					pH	
					<2 mm %	<0.002 mm %	1/3 bar	ovendry			1/3 bar	15 bar				Satur paste	H_2O	KCl
							g / cc				%							
0-13	.5				50.5						37.7	17.8					7.1	
13-65	.5				46.0						36.2	17.0					7.3	
65-110	.5				48.5						38.5	18.3					7.4	
110-125	.9				50.0						38.7	18.3					7.2	

Depth (cm)	Extractable Bases					Ext Acidity	C E C			Ext. Al	Ratios to clay				Total Solu. Salts ppm		Base saturation	
	Ca	Mg	Na	K	Sum		Sum of Cations	Na OAc		me / 100 g	C. E. C	Ext. Fe	15 bar water	Ca/ Mg			Sum of Cations	NaOAc
	me / 100 g																%	
0-13			1.2	341.2				45.0			.7		.3					100.0
13-65			2.8	12.5				37.5			.6		.3					100.0
65-110			1.3	100.0				57.5			.9		.3					100.0
110-125			.8	131.2				62.5			1.0		.3					100.0

Depth (cm)	Electrical Conductivity mmho / cm	Water Extract From Saturated Paste								Water at Satur %	ESP %	SAR	CSP %	Gypsum %	Ext P_2O_5 ppm	Available Nutrients		
		Cations																
		Ca	Mg	Na	K	CO_3	HCO_3	Cl	SO_4							Ca	Mg	K
		me / liter														mg / 100 g		
0-13	.7										2.7	.1	100.0		11.5			>100
13-65	1.3										7.5	.9	100.0		35.2			>100
65-110	1.6										2.3	.2	100.0		40.5			>100
110-125	.4										1.3	.1	100.0		32.0			>100

Classification: Typic Xerofluvent; very fine, mixed, thermic.
Location: Lattakia province, Syria. Approximately 5 km east of Lattakia, 50 m east of the highway from Lattakia to Aleppo; approximate coordinates 35o 32' N latitude and 35o 49' E longtitude.
Physiographic Position: Aluvial plains, elevation about 10 m.a.s.l.
Topography: Level topography with a characteristic slope of less than 1 percent
Drainage: Moderately well drained, very slow surface run-off, very slow permeability.
Parent Material: Recent Alluvium.
Sampled by: H. Yuksel, R. Rizek and S. Kabbas on June 22, 1980
Soil No.: SP - 12



Hori.	Depth (cm)	Description
A1	0 - 13	Yellowish brown (10 YR 5/4 d) to grayish brown (10 YR 5/2 m) clay; massive; approximately 2 cm wide craks extending up to 25 cm; extremely hard (dry), very firm (moist), very sticky and very plastic; frequent, very fine to medium, continuous, vertical, irregular, open pores; few insect nests; common, very fine to medium roots; diffuse, smooth boundary; pH 7.1
C	13 - 125	Dark grayish brown (10 YR 4/* m) clay; massive; very firm (moist), very sticky and very plastic; fine, medium, continuous, irregular, open pores; few, very fine and fine roots; pH 7.3

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SOIL SERIES _____ TAXONOMY _____ SOIL No SP - 13

LOCATION _____ LAB Nos. 1053 - 1110 - 1113

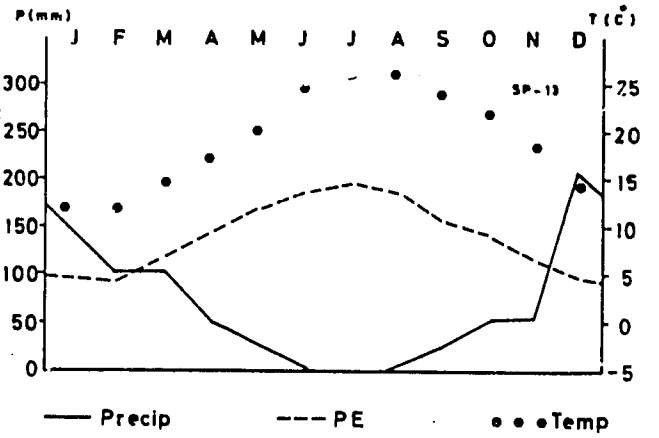
Depth (cm)	Horizon	Size Class and particle diameter (mm): Total: Sand (2-0.05)	Total: Silt (0.05-0.002)	Total: Clay (<0.002)	Sand: Very coarse (2-1)	Sand: Coarse (1-0.5)	Sand: Medium (0.5-0.25)	Sand: Fine (0.25-0.1)	Sand: Very fine (0.1-0.05)	Silt: 0.05-0.02	Silt: 0.02-0.002	Coarse fragments: >2 % of whole soil	Coarse fragments: 2-19 % of <76 mm	Coarse fragments: 19-76 % of <76 mm	Texture class
		% of < 2 mm													
0- 11	A11	30	37	33											CL
11- 21	A12	30	32	38											CL
21- 36	C	35	32	33											CL

Depth (cm)	Organic Carbon %	Nitrogen %	C / N	Ext Iron as Fe %	Carbonate as Ca Co 3: < 2 mm %	Carbonate as Ca Co 3: <0.002 mm %	Bulk Density: 1/3 bar g/cc	Bulk Density: ovendry g/cc	COLE	Water Contents: 1/3 bar %	Water Contents: 15 bar %	pH: Satur paste	pH: H_2O	pH: K Cl
0- 11	1.7				61.0					24.8	11.1		6.7	
11- 21	1.0				5.5					26.5	12.0		7.2	
21- 36	.3				54.0					24.1	10.7		6.8	

Depth (cm)	Extractable Bases: Ca	Mg	Na	K	Sum	Ext Acidity	C E C: Sum of Cations	C E C: Na OAc	Ext. Al me / 100 g	Ratios to clay: C. E. C	Ext. Fe	15 bar water	Ca/ Mg	Total Solu. Salts ppm	Base saturation: Sum of Cations %	Base saturation: Na OAc %
	me / 100 g															
0- 11			.4	158.2				53.7		1.6		.3				100.0
11- 21			.4	98.7				40.0		1.1		.3				100.0
21- 36			.4	95.0				32.5		1.0		.3				100.0

Depth (cm)	Electrical Conductivity mmho / cm	Water Extract From Saturated Paste: Cations: a	Mg	Na	K	CO 3	HCO 3	Cl	SO 4	Water at Satur %	ESP %	SAR	CSP %	Gypsum %	Ext P_2O_5 ppm	Available Nutrients: Ca mg / 100 g	Mg	K
		me / liter																
0- 11	.7										.7	.0	100.0		38.8			>100
11- 21	.4										1.0	.1	100.0		34.0			>100
21- 36	.7										1.2	.1	100.0		71.0			>100

Classification: Lithic Xerorthent; fine loamy, mixed, thermic.
Location: Lattakia province, Syria. Approximately 17 km northeast of Lattakia, 25 m north of the highway from Lattakia to Aleppo; approximate coordinates 35o 36' N latitude and 35o 54' E longtitude.
Physiographic Position: Middle slopes of low hills, elevation about 30 m.a.s.l.
Topography: Very steep topography with a characteristic slope of 45 percent towards east.
Drainage: Well drained, rapid surface run-off, moderately rapid permeability.
Parent Material: Soft Pliocene Marl.
Sampled by: H. Yuksel, R. Rizek and S. Kabbas on June 22, 1980
Soil No.: SP - 13



Hori.	Depth (cm)	Description
A11	0 - 11	Light brownish gray (10 YR 6/2 d) to grayish brown (10 YR 5/2 m) gravelly clay loam; moderate, fine to medium subangular blocky structure; hard (dry), firm (moist), sticky and slightly plastic; frequent, fine to medium, continuous, vertical, simple, irregular pores; frequent, subrounded gravel, constituting approximately 20 percent of the horizon; few, insect nests; many, very fine to medium roots; gradual, smooth boundary; pH 6.7
A12	11 - 21	Light brownish gray (2.5 YR 6/2 d) to dark grayish brown (2.5 YR 4/2 m) gravelly clay loam; moderate, medium, granular structure; hard (dry), friable (moist), slightly sticky and slightly plastic; frequent, fine, medium, continuous, simple, open pores; frequent, subrounded gravel, constituting approximately 20 percent of the horizon; few insect nests; many, very fine to medium roots; clear, smooth boundary; pH 7.2
C	21 - 36	Light brownish gray (2.5 YR 6/2 d) to grayish brown (2.5 YR 5/2 m) gravelly clay loam; moderate, medium, granular structure; hard (dry), friable (moist), slightly sticky, slightly plastic; few, fine, continuous, vertical, open pores; frequent, subrounded and angular gravel, constituting approximately 35 percent of the horizon; few, fine and medium roots; gradual, broken boundary to the bedrock; pH 6.8
R	36+	Soft Pliocene Marl.

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SOIL SERIES _____ TAXONOMY _____ SOIL No SP - 14

LOCATION _____ LAB Nos 1102 - 1062 - 1092 - 1112

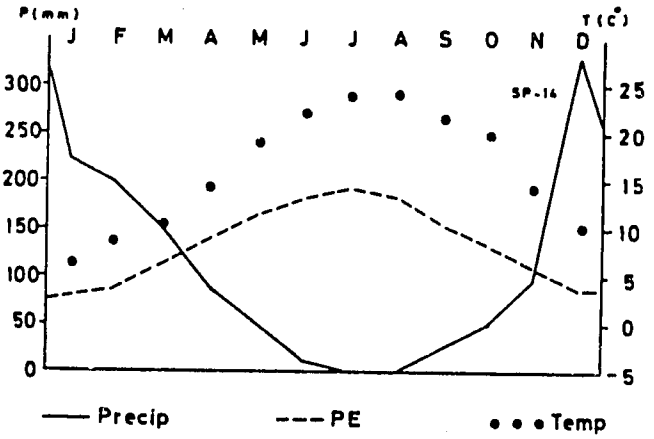
Depth (cm)	Horizon	Size Class and particle diameter (mm) — Total: Sand (2-0.05)	Silt (0.05-0.002)	Clay (<0.002)	Sand: Very coarse (2-1)	Coarse (1-0.5)	Medium (0.5-0.25)	Fine (0.25-0.1)	Very fine (0.1-0.05)	Silt: 0.05-0.02	0.02-0.002				Coarse fragments: >2 % of whole soil	2-19 % of <76 mm	19-76 % of <76 mm	Texture class
		% of < 2 mm																
0- 30	A11	43	24	33														CL
30- 48	A12	42	19	39														CL
48- 64	AC	62	15	23														SCL
64- 78	C	75	12	13														SL

Depth (cm)	Organic Carbon %	Nitrogen %	C / N	Ext. Iron as Fe %	Carbonate as $CaCO_3$ < 2 mm %	< 0.002 mm %	Bulk Density 1/3 bar g/cc	ovendry g/cc	COLE	Water Contents 1/3 bar %	15 bar %				pH Satur paste	H_2O	KCl
0- 30	4.4				14.0					23.0	10.1					6.8	
30- 48	24.5				34.0					25.1	11.2					6.9	
48- 64	1.5				71.0					16.9	6.9					7.3	
64- 78	.3				8.7					11.7	4.2					7.2	

Depth (cm)	Extractable Bases (me / 100 g) Ca	Mg	Na	K	Sum	Ext Acidity	C. E. C. Sum of Cations	Na OAc		Ext. Al me / 100 g	Ratios to clay C. E. C	Ext. Fe	15 bar water	Ca/ Mg	Total Solu. Salts ppm		Base saturation Sum of Cations %	Na OAc
0- 30			1.5	342.5				62.5			1.9		.3					100.0
30- 48			.7	160.2				68.7			1.8		.3					100.0
48- 64			.7	87.5				31.2			1.4		.3					100.0
64- 78			.2	30.0				22.5			1.7		.3					100.0

Depth (cm)	Electrical Conductivity mmho / cm	Water Extract From Saturated Paste — Cations me / liter: Ca	Mg	Na	K	CO_3	HCO_3	Cl	SO_4	Water at Satur %	ESP %	SAR	CSP %	Gypsum %	Ext P_2O_5 ppm	Available Nutrients mg / 100 g: Ca	Mg	K
0- 30	.4										2.4	.1	100.0		34.0			>100
30- 48	.4										1.0	.1	100.0		19.0			>100
48- 64	.8										2.2	.1	100.0		31.0			>100
64- 78	.3										.9	.1	100.0		19.0			>100

Classification: Entic Haploxeroll; loamy skeletal, mixed, thermic.
Location: Lattakia province, Syria. Approximately 43 km northeast of Lattakia, 4 km west of Kansiyya, 50 m north of the road from Lattakia to Kensiyya; approximate coordinates 35o 45' N latitude and 36o 08' E longtitude.
Physiographic Position: Middle slopes of high mountains; elevation about 45o m.a.s.l.
Topography: Mountainous topography with a characteristic slope of more than 100 percent towards northeast.
Drainage: Well drained, rapid surface run-off, moderate permeability.
Parent Material: Cretaceous Limestone.
Sampled by: H. Yuksel, R. Rizek and S. Kabbas on June 22, 1980
Soil No.: SP - 14



Hori.	Depth (cm)	Description
A11	0 - 30	Dark reddish brown (5 YR 3/2 d to 5 YR 2/2 m) gravelly clay loam; moderate, medium, sub-angular blocky structure, breaking to moderate, medium, granular structure; very hard (dry), firm (moist), sticky and plastic; few, fine, continuous, vertical, simple, open pores; abundant, angular gravels and stones, constituting approximately 60 percent of the horizon; many, fine and medium roots, mostly inside peds; gradual, wavy boundary; pH 6.8
A12	30 - 48	Dark reddish brown (5 YR 3/4 d to 5 YR 3/2 m) gravelly clay loam; moderate, medium, sub-angular blocky structure, breaking to moderate, medium, granular structure; very hard (dry), firm, slightly sticky and plastic; few, fine, continuous, vertical, irregular, open pores; abundant, angular gravels and stones, constituting approximately 80 percent of the horizon; many, fine to coarse roots, mainly inside peds; gradual, irregular boundary; pH 6.9
Ac	48 - 64	Yellowish red (5 YR 4/8 m) gravelly sandy clay loam; structureless; hard (dry), firm, sticky and slightly plastic; few, fine, continuous, vertical, irregular, open pores; abundant, angular gravels and stones, constituting 80 percent of the horizon; few, very fine to medium roots; gradual, broken boundary; pH 7.3
C	64 - 76	Yellowish red (5 YR 5/8 m) gravelly sandy loam; structureless; hard (dry), friable (moist), slightly sticky and non plastic; no visible pores; abundant, angular gravels and stones, constituting approximately 80 percent of the horizon; few, very fine and fine roots; gradual, broken boundary to the bedrock; pH 7.2
R	76+	Cretaceous Limestone.

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SOIL SERIES _____ TAXONOMY _____ SOIL No SP - 15

LOCATION _____ LAB Nos. 1123

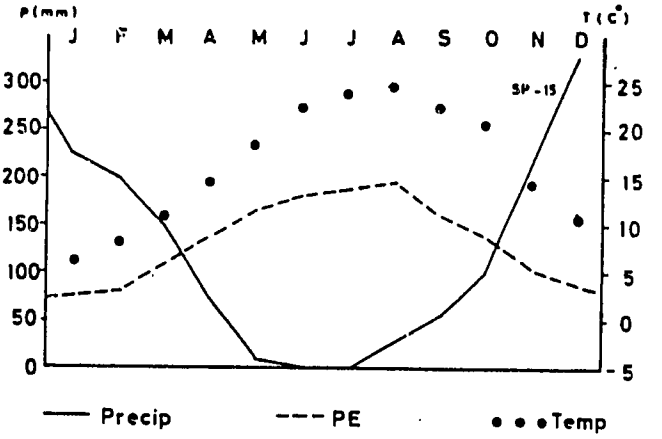
Depth (cm)	Horizon	Size Class and particle diameter (mm)																	Texture class
		Total			Sand					Silt					Coarse fragments				
		Sand (2-0.05)	Silt (0.05-0.002)	Clay (<0.002)	Very coarse (2 - 1)	Coarse (1 - 0.5)	Medium (0.5 - 0.25)	Fine (0.25 - 0.1)	Very fine (0.1 - 0.05)	0.05 - 0.02	0.02 - 0.002				>2 % of whole soil	2 - 19 %	19-76 %		
		%, of < 2 mm														of <76 mm			
0- 7	A1	33	33	34															CL

Depth (cm)	Organic Carbon %	Nitrogen %	C / N	Ext. Iron as Fe %	Carbonate as Ca Co 3		Bulk Density			COLE	Water Contents				pH		
					< 2 mm	< 0.002 mm	1/3 bar	ovendry			1/3 bar	15 bar			Satur. paste	H_2O /	K Cl /
					%,		g / cc				%,						
0- 7	2.4				73.0						24.7	11.0				6.6	

Depth (cm)	Extractable Bases					Ext Acidity	C E C			Ext. Al me / 100 g	Ratios to clay				Total Solu. Salts ppm		Base saturation	
	Ca	Mg	Na	K	Sum		Sum of Cations	Na OAc			C. E. C	Ext. Fe	15 bar water	Ca/ Mg			Sum of Cations	Na OAc
	me / 100 g																%	
0- 7			.3	83.3				50.0			1.5		.3					100.0

Depth (cm)	Electrical Conductivity mmho / cm	Water Extract From Saturated Paste								Water at Satur. %	ESP %	SAR	CSP %	Gypsum %	Ext P_2O_5 ppm	Available Nutrients		
		Cations														Ca	Mg	K
		Ca	Mg	Na	K	CO 3	HCO 3	Cl	SO 4							mg / 100 g		
		me / liter																
0- 7	.7										.7	.1	100.0		70.5			>100

Classification: Lithic Xerorthent; fine loamy, mixed, thermic.
LOcation: Lattakia province, Syria. Approximately 47 km northeast of Lattakia, 500 m south of Kansebba, 50 m south of the road from Kansebba to Lattakia; approximate coordinates 35o 45' N latitude and 36o 09' E longtitude.
Physiographic Position: Narrow summits and upper slopes of high mountains, elevation about 740 m.a.s.l.
Topography: Mountainous topography with a characteristic slope of 80 percent towards west.
Drainage: Well, moderately, excessively, drained, very rapid surface run-off, rapid permeability.
Vegetation: Native forest
Parent Material: Cretaceous Limestone.
Sampled by: H. Yuksel, R. Rizek and S. Kabbas on June 11, 1980
Soil No.: SP - 15



Hori.	Depth (cm)	Description
A1	0 - 7	Light gray (2.5 YR 7/2 d) to dark grayish brown (10 YR 4/2 m) clay loam; moderate, medium, subangular blocky structure; hard (dry), firm (moist), sticky and slightly plastic; frequent, fine and medium, continuous, vertical, simple, open pores; few, angular gravels, constituting approximately 10 percent of the horizon; few, very fine and fine roots; clear, broken boundary to the bedrock; pH 6.6
R	7+	Cretaceous Limestone.

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SOIL SERIES _____ TAXONOMY _____ SOIL No SP - 16

LOCATION _____ LAB Nos. 1055 - 1124 - 1119 - 1050 - 1058

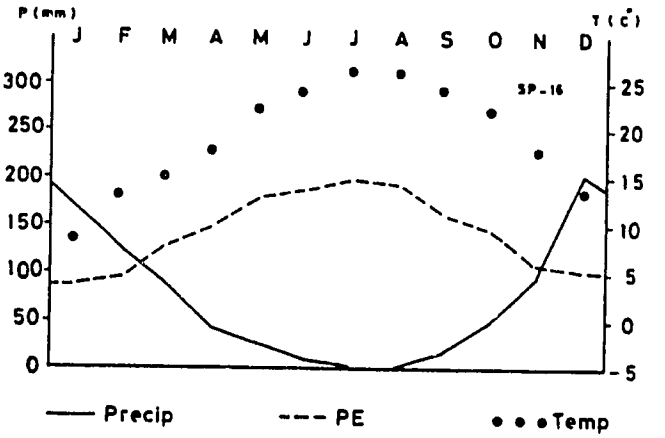
Depth (cm)	Horizo	Size Class and particle diameter (mm) — Total: Sand (2-0.05)	Silt (0.05-0.002)	Clay (<0.002)	Sand: Very coarse (2-1)	Coarse (1-0.5)	Medium (0.5-0.25)	Fine (0.25-0.1)	Very fine (0.1-0.05)	Silt: 0.05-0.002	0.02-0.002				Coarse fragments: >2 % of whole soil	2-19 %	19-76 %	Texture class
		% of < 2 mm														% of <76 mm		
0- 16	AP	45	25	29														SCL
16- 39	B21	42	21	37														CL
39- 70	B22	49	20	31														SCL
70- 91	C	51	21	28														SCL
91-110	IIC	67	13	20														SCL

Depth (cm)	Organic Carbon %	Nitrogen %	C / N	Ext Iron as Fe %	Carbonate as Ca Co 3 <2 mm %	Carbonate <0.002 mm %	Bulk Density 1/3 bar g/cc	Bulk Density ovendry g/cc	CDLE	Water Contents 1/3 bar %	Water Contents 15 bar %	pH Satur paste	pH H2O	pH KCl
0- 16	1.7				44.0	tr				21.2	9.2		6.9	
16- 39	.2				.5	16.4				24.4	10.9		6.6	
39- 70	.3				2.0	8.5				21.4	9.3		7.0	
70- 91	.5				29.5	tr				20.1	8.6		7.2	
91-110	.1				44.0	tr				15.2	6.0		7.3	

Depth (cm)	Extractable Bases Ca	Mg	Na	K	Sum (me / 100 g)	Ext Acidity	C.E.C. Sum of Cations	C.E.C. Na OAc	Ext. Al me / 100 g	Ratios to clay C.E.C	Ext. Fe	15 bar water	Ca/Mg	Total Solu. Salts ppm	Base saturation Sum of Cations %	Base saturation Na OAc %
0- 16			.2	48.2				52.5		1.8		.3				100.0
16- 39			.8	23.2				62.5		1.7		.3				100.0
39- 70			.8	32.5				45.0		1.5		.3				100.0
70- 91			.4	28.5				57.5		2.1		.3				100.0
91-110			.5	38.2				50.0		2.5		.3				100.0

Depth (cm)	Electrical Conductivity mmho / cm	Water Extract From Saturated Paste — Cations Ca	Mg	Na	K	CO 3	HCO 3	Cl	SO 4 (me / liter)	Water at Satur %	ESP %	SAR	CSP %	Gypsum %	Ext P_2O_5 ppm	Available Nutrients Ca	Mg	K (mg / 100 g)
0- 16	.5										.4	.0	100.0	tr	31.3			>100
16- 39	.4										1.3	.2	100.0	25.7	20.5			>100
39- 70	.4										1.8	.2	100.0	24.7	29.0			>100
70- 91	.3										.7	.1	100.0	tr	19.0			>100
91-110	.3										1.0	.1	100.0	tr	19.4			>100

Classification: Typic Xerochrept; fine loamy over loamy, skeletal, mixed, thermic.
Location: Lattakia province, Syria. Approximately 10 km southeast of Lattakia, 1 km northeast of the Lattakia Agricultural Research Station, 50 m north of the highway from Lattakia to Tartous.
Physiographic Position: Terrace, elevation about 45 m.a.s.l.
Topography: Level topography with a characteristic slone of 1 percent.
Drainage: Well drained, slow surface run-off, moderate permeability.
Vegetation: Non-irrigated wheat.
Parent Material: Upper Quaternary terrace deposits.
Sampled by: H. Yuksel, R. Rizek and S. Kabbas on June 23, 1980
Soil No.: SP - 16



Hori.	Depth (cm)	Description
Ap	0 - 16	Very dark gray (10 YR 3/1 d) to black (10 YR 2/1 m) sandy clay loam; weak, fine, subangular blocky structure; hard (dry), firm, sticky, slightly plastic; few, frequent, very fine and fine, discontinuous, irregular, simple, open pores; frequent, rounded gravel, constituting approximately 10 percent of the horizon; many very fine to medium roots, mostly inside peds; abrupt smooth boundary; pH 6.9
B21	16 - 39	Very dark grayish brown (10 YR 3/2 m) clay loam; massive; weak, fine, subangular blocky structure; firm (moist), sticky and plastic; patchy, thin cutanes, probably of clay minerals, mostly on horizontal and vertical ped faces; few, very fine and fine, discontinuous, irregular, simple, open pores; few, fine and very fine roots, mostly inside peds; clear, smooth boundary; pH 6.6
B22	39 - 76	Dark gray (10 YR 4/1 m) gravelly sandy clay loam; weak, medium, subangular blocky structure; firm (moist), sticky and plastic; broken, thin cutanes, probably of clay minerals, mostly on vertical ped faces; few, very fine, discontinuous, irregular, simple, open pores; frequent, rounded gravel, constituting approximately 30 percent of the horizon; few, very fine roots; clear, smooth boundary; pH 7.0
C	76 - 91	Grayish brown (10 YR 5/2 m) gravelly sandy clay loam; massive, firm (moist), sticky and plastic; few, very fine, discontinuous, irregular, simple, open pores; frequent, rounded gravel, constituting approximately 30 percent of the horizon; abrupt, smooth boundary; pH 7.2
II C	91 - 110	Grayish brown (10 YR 5/2 m) gravelly sandy clay loam; firm (moist), sticky and slightly plastic; abundant, rounded gravel, constituting approximately 70 percent of the horizon; no visible pores; pH 7.3

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SOIL SERIES _____ TAXONOMY _____ SOIL No SP - 17

LOCATION _____ LAB Nos. 1103 - 1116 - 1082 - 1130 - 1067

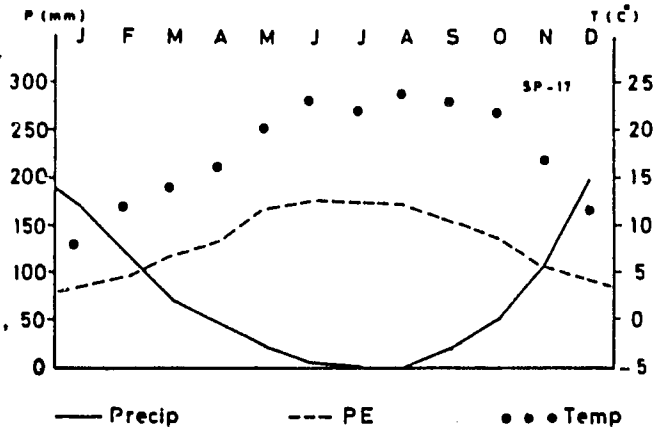
Depth (cm)	Horizon	Size Class and particle diameter (mm)															Texture class
		Total			Sand					Silt					Coarse fragments		
		Sand (2-0.05)	Silt (0.05-0.002)	Clay (<0.002)	Very coarse (2-1)	Coarse (1-0.5)	Medium (0.5-0.25)	Fine (0.25-0.1)	Very fine (0.1-0.05)	0.05-0.02	0.02-0.002				>2 % of whole soil	2-19 mm	19-76 mm
		% of < 2 mm													% of <76 mm		
0-15	AP	34	28	38													CL
15-36	B21	18	18	64													C
36-52	B22	23	20	57													C
52-70	B23	15	25	60													C
70-100	B24	25	21	42													C

Depth (cm)	Organic Carbon %	Nitrogen %	C / N	Ext Iron as Fe %	Carbonate as $CaCO_3$		Bulk Density			COLE	Water Contents				pH		
					<2 mm	<0.002 mm	1/3 bar	ovendry			1/3 bar	15 bar			Satur paste	H_2O	KCl
					%		g / cc				%						
0-15	.8				.5	10.1					25.9	11.7				6.4	
15-36	.8				tr	2.2					36.9	17.4				6.6	
36-52	.6				1.5	5.3					33.8	15.8				6.6	
52-70	.8				1.5	5.2					36.0	16.9				6.9	
70-100	.5				1.7	tr					26.5	12.0				6.8	

Depth (cm)	Extractable Bases					Ext Acidity	CEC			Ext. Al me / 100 g	Ratios to clay			Ca / Mg	Total Solu. Salts ppm		Base saturation	
	Ca	Mg	Na	K	Sum		Sum of Cations	Na OAc			C E C	Ext. Fe	15 bar water				Sum of Cations	Na OAc
	me / 100 g																%	
0-15			.9	195.0				55.0			1.4		.3					100.0
15-36			.7	113.7				55.0			.9		.3					100.0
36-52			1.2	113.2				48.7			.9		.3					100.0
52-70			.6	138.2				62.5			1.0		.3					100.0
70-100			.7	113.2				72.5			1.7		.3					100.0

Depth (cm)	Electrical Conductivity mmho / cm	Water Extract From Saturated Paste								Water at Satur %	ESP %	SAR	CSP %	Gypsum %	Ext P_2O_5 ppm	Available Nutrients		
		Cations																
		Ca	Mg	Na	K	CO_3	HCO_3	Cl	SO_4							Ca	Mg	K
		me / liter														mg / 100 g		
0-15	.4										1.6	.1	100.0	21.6	6.5			>100
15-36	.4										1.3	.1	100.0	24.7	10.0			>100
36-52	.4										2.5	.2	100.0	25.9	11.5			>100
52-70	.4										1.0	.1	100.0	26.3	34.0			>100
70-100	.4										1.0	.1	100.0	tr	18.8			>100

Classification: Typic Xerochrept; fine, mixed, thermic.
Location: Lattakia province, Syria. Approximately 14 km southeast of Lattakia, 14 km north of Jabla, 50 m south of the road from Lattakia to Fakura; approximate coordinates 35o 28' N latitude and 35o 55' E longtitude.
Physiographic Position: Gently undulating summits and upper slopes of low hills, elevation about 100 m.a.s.l.
Topography: Gently rolling topography with a characteristic slope of 4 percent towards north.
Drainage: Moderately well drained, slow surface run-off, slow permeability.
Parent Material: Pliocene Marl.
Sampled by: H. Yuksel, R. Rizek and S. Kabbas on June 22, 1980
Soil No.: SP - 17



Hori.	Depth (cm)	Description
Ap	0 - 15	Dark reddish brown (5 YR 3/4 d to 3/3 m) clay loam; moderate, medium, subangular blocky structure; hard (dry), firm (moist), sticky and plastic; many, frequent, very fine to fine, continuous, irregular, simple, open pores; very fine and fine roots; few insect nests; approximately 1 cm craks extending up to 15 cm depth; gradual, smooth boundary; pH 6.4
B21	15 - 36	Dark reddish brown (5 YR 3/4 m) clay; strong, medium, subangular blocky structure; very firm (moist), very sticky and very plastic; continuous, thin cutanes, probably of clay minerals, mainly on ped faces and in voids; few, very fine roots; diffuse, smooth boundary; pH 6.6
B22	36 - 52	Dark reddish brown (5 YR 3/4 m) clay; moderate, medium, subangular blocky structure; very firm (moist), very sticky and very plastic; continuous, thin cutanes, probably of clay minerals on horizontal and vertical ped faces and in voids; few, very fine roots; no visible pores; diffuse, smooth boundary; pH 6.6
B23	52 - 70	Dark reddish brown (5 YR 3/3 m) clay; moderate, medium to coarse, subangular blocky structure; very firm (moist); very sticky and very plastic; continuous, thin cutanes, probably of clay minerals, mainly on ped faces and in voids; no visible roots; no visible pores; diffuse, smooth boundary; pH 6.9
B24	70 - 100	Dark reddish brown (5 YR 3/3 m) clay; massive; extremely firm (moist), very sticky and very plastic; no visible pores; no visible roots; pH 6.8

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SOIL SERIES _____ TAXONOMY _____ SOIL No SP - 18

LOCATION _____ LAB Nos. 1131 - 1098 - 1108 - 1101 - 1084 - 1076 - 106

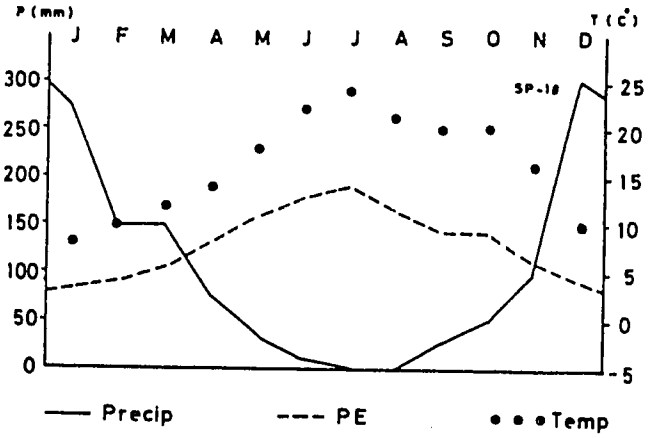
Depth (cm)	Horizon	Size Class and particle diameter (mm) — Total: Sand (2-0.05)	Total: Silt (0.05-0.002)	Total: Clay (<0.002)	Sand: Very coarse (2-1)	Sand: Coarse (1-0.5)	Sand: Medium (0.5-0.25)	Sand: Fine (0.25-0.1)	Sand: Very fine (0.1-0.05)	Silt: 0.05-0.02	Silt: 0.02-0.002	Coarse fragments: >2 mm % of whole soil	Coarse fragments: 2-19 mm % of <76 mm	Coarse fragments: 19-76 mm % of <76 mm	Texture class
		% of < 2 mm													
0- 7	A11	34	40	24											L
7- 18	A12	31	38	31											CL
18- 42	B21	30	36	34											CL
42- 57	B22	21	35	44											C
57- 67	B3	29	33	38											CL
67- 95	C1	42	25	33											CL
~~95-127~~	~~C2~~	~~43~~	~~30~~	~~28~~											CL

Depth (cm)	Organic Carbon %	Nitrogen %	C / N	Ext. Iron as Fe %	Carbonate as Ca Co 3 <2 mm %	Carbonate <0.002 mm %	Bulk Density 1/3 bar g/cc	Bulk Density ovendry g/cc	COLE	Water Contents 1/3 bar %	Water Contents 15 bar %	pH Satur. paste	pH H_2O	pH KCl
0- 7	1.3				68.5					21.9	9.6		6.8	
7- 18	.8				65.5					24.0	10.7		6.6	
18- 42	.9				67.0					25.2	11.3		7.2	
42- 57	.6				51.5					29.8	13.7		7.2	
57- 67	.5				78.0					26.7	12.0		6.9	
67- 95	.3				70.0					23.1	10.2		7.0	
~~95-127~~	~~.2~~				~~76.0~~					~~21.5~~	~~9.3~~		7.1	

Depth (cm)	Extractable Bases Ca (me / 100 g)	Mg	Na	K	Sum	Ext Acidity	C. E. C. Sum of Cations	C. E. C. Na OAc	Ext. Al me / 100 g	Ratios to clay C. E. C	Ext. Fe	15 bar water	Ca / Mg	Total Solu. Salts ppm	Base saturation Sum of Cations %	Base saturation Na OAc
0- 7			.3	310.0				42.5		1.6		.4				100.0
7- 18			.6	267.5				37.5		1.2		.3				100.0
18- 42			.4	131.2				45.0		1.3		.3				100.0
42- 57			.8	142.5				52.5		1.2		.3				100.0
57- 67			.7	121.0				43.7		1.2		.3				100.0
67- 95			.6	91.0				42.5		1.3		.3				100.0
95-127			.7	78.5				37.5		1.3		.3				100.0

Depth (cm)	Electrical Conductivity mmho / cm	Water Extract From Saturated Paste — Cations: Ca (me / liter)	Mg	Na	K	CO_3	HCO_3	Cl	SO_4	Water at Satur. %	ESP %	SAR	CSP %	Gypsum %	Ext P_2O_5 ppm	Available Nutrients Ca (mg / 100 g)	Mg	K
0- 7	.8										.7	.0	100.0	tr	41.2			>100
7- 18	1.1										1.6	.1	100.0	tr	41.0			>100
18- 42	.5										~~.9~~	~~.0~~	~~100.0~~	~~tr~~	~~37.0~~			~~>100~~
42- 57	.4										1.5	.1	100.0	tr	11.0			>100
57- 67	.4										1.6	.1	100.0	25.9	11.0			>100
67- 95	.2										1.4	.1	100.0	tr	8.6			>100
95-127	.3										1.9	.1	100.0	tr	4.5			>100

Classification: Typic Xerochrept; fine loamy, mixed, thermic.
Location: Lattakia province, Syria. Approximately 17 km southeast of Lattakia, 17 km north of Jable, 25 m south of the road from Lattakia to Fakhura; approximate coordinates 35o 29' N latitude and 35o 58' E longtitude.
Physiographic Position: Gently rolling to rolling summits of low hills, elevation about 130 m.a.s.l.
Topography: Gently rolling to rolling topography with a characteristic slope of 12 percent towards north.
Drainage: Well drained, medium surface run-off, moderately slow permeability.
Parent Material: Quaternary or more recent coluvium derived mainly from Pliocene, Marl and Limestone.
Sampled by: H. Yuksel, R. Rizek and S. Kabbas on June 23, 1980
Soil No.: SP - 18



Hori.	Depth (cm)	Description
A11	0 - 7	Yellowish brown (10 YR 5/4 m) to pale brown (10 YR 6/3 d) loam; moderate, medium, subangular blocky structure, breaking to moderate, medium, granular structure; approximately 1 cm wide craks extending up to 10 cm; hard (dry), friable (moist), slightly sticky and slightly plastic; many, fine to medium, continuous, opened, simple pores; many insect nests and worm casts; many, very fine to fine roots, mostly inside peds; abrupt, smooth boundary, pH 6.8
A12	7 - 18	Yellowish brown (10 YR 5/6 d to 10 YR 5/4 m) clay loam; weak, medium, subangular blocky structure; very hard (dry), friable (moist), slightly sticky and slightly plastic; frequent, fine, continuous, simple, open pores; some insect nests and worm casts; few, fine to very fine roots, mostly inside peds; clear, smooth boundary; pH 6.6
B21	18 - 42	Yellowish brown (10 YR 5/6 m) to brownish yellow (10 YR 6/6 d) clay loam; weak, medium, subangular blocky structure; very hard (dry), friable (moist), slightly sticky and slightly plastic; patchy, thin cutanes probably of clay minerals, mostly on vertical ped faces and in voids; few, fine, continuous, open, simple pores; few, fine roots mostly inside peds; gradual, smooth boundary; pH 7.2
B22	42 - 57	Yellowish brown (10 YR 5/8 d to 10 YR 5/6 m) clay; weak, medium subangular blocky structure; very hard (dry), firm (moist), sticky and plastic; patchy, thin cutanes, probably of clay minerals, mainly on vertical ped faces and in voids; few, fine to medium, continuous, simple, open pores; few, fine roots; few, rounded and subrounded gravel, constituting approximately 10 percent of the horizon; clear, smooth boundary; pH 6.9
B3	57 - 67	Yellowish brown (10 YR 5/8 m) clay loam; weak, medium, subangular blocky structure; firm (moist) sticky and plastic; no visible cutanes; few, rounded and subrounded gravel, constituting approximately 15 percent of the horizon; frequent, fine to medium, continuous, irregular, simple, open pores; no visible roots; clear, smooth boundary; pH 6.9
C1	67 - 95	Yellowish brown (10 YR 5/6 m) clay loam; massive; firm (moist), slightly sticky and slightly plastic; frequent, rounded and subrounded gravel, constituting approximately 25 percent of the horizon; few, very fine, discontinuous, irregular, closed pores; no visible roots; gradual, wavy boundary; pH 7.0
C2	95 - 127	Brownish yellow (10 YR 6/6 m) clay loam; massive; firm (moist), sticky and slightly plastic; frequent, rounded and subrounded gravel, constituting approximately 30 percent of the horizon; few, very fine, discontinuous, irregular, closed pores; pH 7.1

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SOIL SERIES _____ TAXONOMY _____ SOIL No SP - 19

LOCATION _____ LAB Nos 1089 - 1063 - 1128 - 1070

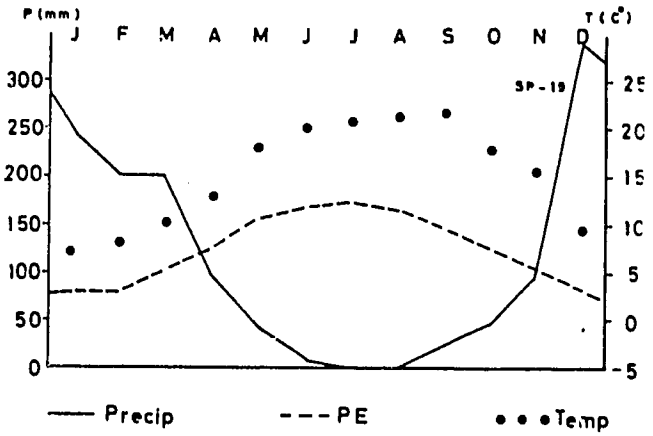
Depth (cm)	Horizon	Size Class and particle diameter (mm): Total Sand (2-0.05)	Total Silt (0.05-0.002)	Total Clay (<0.002)	Sand: Very coarse (2-1)	Sand: Coarse (1-0.5)	Sand: Medium (0.5-0.25)	Sand: Fine (0.25-0.1)	Sand: Very fine (0.1-0.05)	Silt 0.05-0.02	Silt 0.02-0.002	Coarse fragments >2 % of whole soil	Coarse fragments 2-19 % of <76 mm	Coarse fragments 19-76 % of <76 mm	Texture class
		% of < 2 mm													
0- 15	A1	39	27	34											CL
15- 38	B21	16	17	67											C
38- 58	B22	16	12	72											C
58- 75	B23	19	19	62											C

Depth (cm)	Organic Carbon %	Nitrogen %	C / N	Ext Iron as Fe %	Carbonate as $CaCO_3$ <2 mm %	Carbonate as $CaCO_3$ <0.002 mm %	Bulk Density 1/3 bar g/cc	Bulk Density ovendry g/cc	COLE	Water Contents 1/3 bar %	Water Contents 15 bar %	pH Satur. paste	pH H_2O	pH KCl
0- 15	3.2				1.5	tr				23.9	10.6		6.0	
15- 38	1.1				1.5	tr				38.2	18.1		6.5	
38- 58	.7				.5	11.5				39.8	18.9		6.2	
58- 75	.6				2.5	3.3				36.1	17.0		6.9	

Depth (cm)	Extractable Bases Ca me/100 g	Mg	Na	K	Sum	Ext Acidity	C.E.C Sum of Cations	C.E.C Na OAc	Ext Al me/100 g	Ratios to clay C.E.C	Ext. Fe	15 bar water	Ca/Mg	Total Solu. Salts ppm	Base saturation Sum of Cations %	Base saturation Na OAc %
0- 15		tr	.7	140.0				32.5		1.0		.3				100.0
15- 38		tr	.5	88.2				62.5		.9		.3				100.0
38- 58		.6	.6	88.2				68.7		1.0		.3				100.0
58- 75		tr	1.0	138.0				50.0		.8		.3				100.0

Depth (cm)	Electrical Conductivity mmho/cm	Water Extract From Saturated Paste: Cations Ca me/liter	Mg	Na	K	CO_3	HCO_3	Cl	SO_4	Water at Satur %	ESP %	SAR	CSP %	Gypsum %	Ext P_2O_5 ppm	Available Nutrients Ca mg/100 g	Mg	K
0- 15	.4										2.2	.1	100.0	tr	22.8			>100
15- 38	.7										.8	.1	100.0	tr	13.0			>100
38- 58	.4										.9	.1	100.0	28.3	15.0			>100
58- 75	.3										2.0	.1	100.0	30.7	4.0			>100

Classification: Mollic Haploxeralf; fine, mixed, thermic.
Location: Lattakia province, Syria. Approximately 30 km southeast of Lattakia, 4 km east of Fakhoura, 50 m south of the road from Fakhoura to Jobet Burghal; approximate coordinates 35o 30' N latitude and 36o 03' E longtitude.
Physiographic Position: Backslopes of high hills, elevation about 410 m.a.s.l.
Topography: Steep topography with a characteristic slope of 30 percent towards west.
Drainage: Well drained, rapid surface run-off, moderately slow to slow permeability.
Parent Material: Cretaceous Limestone.
Sampled by: H. Yuksel and R. Rizek on June 23, 1980
Soil No.: SP - 19



Hori.	Depth (cm)	Description
A1	0 - 15	Dark brown (7.5 YR 3/2 d) to very dark brown (7.5 YR 2/2 m) gravelly clay loam; strong, medium, subangular blocky structure, breaking to strong, medium, granular structure; very hard (dry), firm (moist), sticky and plastic; many, medium, continuous, irregular, simple, open pores; abundant angular gravel and stones, constituting approximately 70 percent of the horizon; many, very fine to medium roots, mostly inside peds; clear, smooth boundary; pH 6.0
B21	15 - 32	Reddish brown (5 YR 4/4 d) to dark reddish brown (5 YR 3/4 m) gravelly clay; moderate, medium, subangular blocky structure; very hard (dry), very firm (moist), very sticky and plastic; continuous, thin cutanes, probably of clay minerals, mostly on horizontal and vertical ped faces and in voids; many, very fine to medium, continuous, irregular, simple, open pores; abundant angular gravel and stones, constituting approximately 80 percent of the horizon; common, very fine and few, medium roots, mostly inside peds; gradual, smooth boundary; pH 6.5
B22	32 - 58	Reddish brown (2.5 YR 4/4 d) to dark reddish brown (2.5 YR 3/4 m) gravelly clay; strong, medium, subangular blocky structure; very hard (dry), very firm (moist), very sticky and very plastic; continuous, thin cutanes, probably of clay minerals, mostly on horizontal and vertical ped faces and in voids; very fine to fine, continuous, irregular, simple, open pores; frequent, angular gravel and stones, constituting approximately 30 percent of the horizon; few, very fine to fine roots, mostly inside peds; gradual, smooth boundary; pH 6.2
B23	58 - 75	Dark brown (7.5 YR 4/4 m) gravelly clay; weak, medium, subangular blocky structure; very firm (moist), very sticky and very plastic; few, very fine and fine, continuous, irregular, simple, open pores; frequent, angular gravel and stones, constituting approximately 40 percent of the horizon; few, very fine roots, mostly inside peds; clear, smooth boundary; pH 6.9
C	75 - 110	Dark brown (7.5 YR 4/4 m) gravelly clay; massive, very firm (moist), very sticky and very plastic; few, very fine, continuous, irregular, simple, open pores, mostly inside peds; abundant angular gravel and stones, constituting approximately 50 percent of the horizon; no visible roots.

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SOIL SERIES _____ TAXONOMY _____ SOIL No SP - 20

LOCATION _____ LAB Nos. 1054 - 1077 - 1078 - 1066 - 1065 - 1080

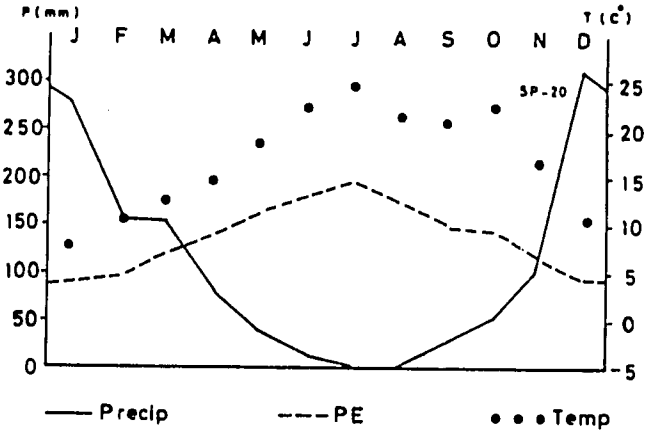
Depth (cm)	Horizon	Size Class and particle diameter (mm): Total Sand (2-0.05)	Total Silt (0.05-0.002)	Total Clay (<0.002)	Sand: Very coarse (2-1)	Sand: Coarse (1-0.5)	Sand: Medium (0.5-0.25)	Sand: Fine (0.25-0.1)	Sand: Very fine (0.1-0.05)	Silt: 0.05-0.02	Silt: 0.02-0.002	Coarse fragments >2 % of whole soil	Coarse fragments 2-19 % of <76 mm	Coarse fragments 19-76 % of <76 mm	Texture class
		% of < 2 mm													
0- 8	AP	22	39	39											CL
8- 14	A1	23	34	43											C
14- 30	B21	23	36	41											C
30- 48	B22	25	34	41											C
48- 55	C1	33	27	40											CL
55-110	C2	35	24	41											C

Depth (cm)	Organic Carbon %	Nitrogen %	C / N	Ext Iron as Fe %	Carbonate as Ca Co 3 <2 mm %	Carbonate as Ca Co 3 <0.002 mm %	Bulk Density 1/3 bar g/cc	Bulk Density ovendry g/cc	COLE	Water Contents 1/3 bar %	Water Contents 15 bar %	pH Satur paste	pH H_2O	pH KCl
0- 8	.7				22.5					28.0	12.7		7.0	
8- 14	1.0				56.0					29.2	13.4		7.1	
14- 30	.9				54.0					28.5	13.0		7.1	
30- 48	.9				22.5					28.2	12.9		6.9	
48- 55	.4				61.5					26.7	12.1		7.1	
55-110	.2				74.5					26.8	12.1		7.2	

Depth (cm)	Extractable Bases Ca (me / 100 g)	Mg	Na	K	Sum	Ext Acidity	CEC Sum of Cations	CEC Na OAc	Ext Al me / 100 g	Ratios to clay C.E.C	Ext. Fe	15 bar water	Ca / Mg	Total Solu. Salts ppm	Base saturation Sum of Cations %	Base saturation Na OAc %
0- 8			.4	174.2				57.5		1.5		.3				100.0
8- 14			.8	14.3				48.7		1.1		.3				100.0
14- 30			.8	124.0				57.5		1.4		.3				100.0
30- 48			.6	106.6				68.7		1.7		.3				100.0
48- 55			.8	95.0				45.0		1.1		.3				100.0
55-110			.7	80.7				32.5		.8		.3				100.0

Depth (cm)	Electrical Conductivity mmho / cm	Water Extract From Saturated Paste: Cations Ca (me / liter)	Mg	Na	K	CO 3	HCO 3	Cl	SO 4	Water at Satur %	ESP %	SAR	CSP %	Gypsum %	Ext P_2O_5 ppm	Available Nutrients Ca (mg / 100 g)	Mg	K
0- 8	.4										.7	.0	100.0		48.0			>100
8- 14	.4										1.6	.3	100.0		10.0			>100
14- 30	.4										1.4	.1	100.0		1.1			>100
30- 48	.6										.9	.1	100.0		32.2			>100
48- 55	.3										1.8	.1	100.0		32.0			>100
55-110	.3										2.2	.1	100.0		10.0			>100

Classification: Typic Xerochrept; fine, mixed, thermic.
Location: Lattakia province, Syria. Approximately 20 km southeast of Lattakia, 14 km northeast of Jable, 30 m South of the road from Lattakia to Kelmakho; approximate coordinates 35o 27' N latitude and 35o 58' longtitude.
Physiographic Position: Convex middle slopes of low hills, elevation about 140 m.a.s.l.
Topography: Gently rolling to rolling topography with a characteristic slope of 8 percent towards east.
Drainage: Well drained, medium surface run-off, moderate permeability.
Parent Material: Pliocene,Limestone and Marl .
Sampled by: H. Yuksel, R. Rizek and S. Kabbas on June 25, 1980
Soil No.: SP - 20



Hori.	Depth (cm)	Description
Ap	0 - 8	Grayish brown (10 YR 5/2 d) to yellowish brown (10 YR 5/6 m) clay loam; weak, medium, subangular blocky structure; extremely hard (dry), very firm (moist), sticky and plastic; many, very fine to fine, continuous, vertical, irregular, simple, open pores; few, subrounded gravel, constituting approximately 10 percent of the horizon; few insect nests and worm casts; few, very fine to fine roots, mostly inside peds; clear, smooth boundary; pH 7.0
A1	8 - 14	Brown (10 YR 4/3 d) to dark grayish brown (10 YR 4/2 m) clay; weak, medium to coarse subangular blocky structure; hard (dry), firm (moist), sticky and plastic; many, very fine and fine, continuous, irregular, simple, open pores; few, subrounded gravel, constituting approximately 10 percent of the horizon; common, very fine to fine roots, mostly inside peds; clear, smooth boundary; pH 7.1
B21	14 - 30	Dark yellowish brown (10 YR 4/4 m) clay; moderate, medium, subangular blocky structure; firm, sticky and plastic, many, fine to medium, continuous, irregular, simple, open pores; frequent, subrounded gravel, constituting approximately 15 percent of the horizon; common, very fine to fine roots, mostly inside peds; clear, smooth boundary; pH 7.1
B22	30 - 48	Dark brown (10 YR 4/3 m) gravelly clay; moderate, medium, subangular blocky structure; firm, sticky and plastic; continuous, thin cutanes, probably of clay minerals, mostly on horizontal and vertical ped faces; few, very fine to fine, discontinuous, irregular, simple, closed pores; frequent, subrounded gravel constituting approximately 15 percent of the horizon; few, very fine roots mostly inside peds; abrupt, smooth boundary; pH 6.9
C1	48 - 55	Yellowish brown (10 YR 5/4 m) gravelly clay loam; massive; firm, sticky and plastic; few, very fine, discontinuous, irregular, simple, closed pores; frequent, subrounded and angular gravel, constituting approximately 20 percent of the horizon; very fine roots mostly inside peds; gradual, smooth boundary; pH 7.1
C2	55 - 102	Yellowish brown (10 YR 5/4 m) gravelly clay; massive; firm, sticky and plastic; frequent, subrounded and angular gravel, constituting approximately 25 percent of the horizon; few, very fine roots; pH 7.2

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SOIL SERIES _____ TAXONOMY . _____ SOIL No SP - 21

LOCATION _____ LAB Nos. 1051 - 1133 - 1059 - 1047 - 1052

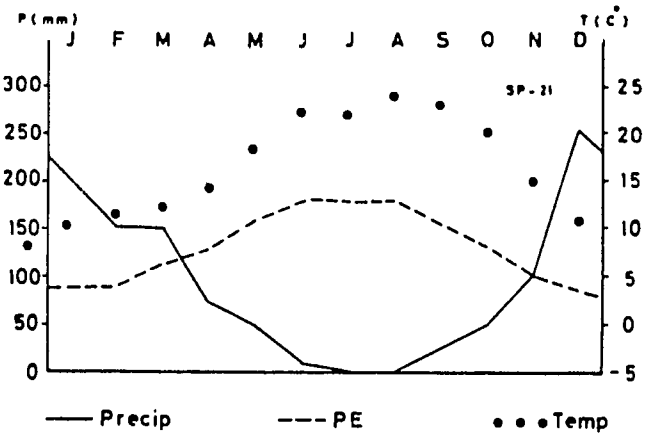
Depth (cm)	Horizon	Size Class and particle diameter (mm)															Texture class
		Total			Sand					Silt					Coarse fragments		
		Sand (2-0.05)	Silt (0.05-0.002)	Clay (<0.002)	Very coarse (2 - 1)	Coarse (1 - 0.5)	Medium (0.5 - 0.25)	Fine (0.25 - 0.1)	Very fine (0.1 - 0.05)	0.05 - 0.02	0.02 - 0.002				>2 mm % of whole soil	2 - 19 mm % of <76 mm	19-76 mm % of <76 mm	
		%, of < 2 mm															
0- 18	AP	38	25	37													CL
18- 58	B2	31	19	50													C
58- 71	B3	22	23	55													C
71- 84	C1	21	23	56													C
84-120	C2	20	27	53													C

Depth (cm)	Organic Carbon %	Nitrogen %	C / N	Ext Iron as Fe %	Carbonate as Ca Co 3 < 2 mm %	Carbonate as Ca Co 3 <0.002 mm %	Bulk Density 1/3 bar g / cc	Bulk Density ovendry g / cc	COLE	Water Contents 1/3 bar %	Water Contents 15 bar %				pH Satur. paste	pH H_2O	pH CaCl
0- 18	1.4				[illegible].5	tr				25.0	11.2					6.6	
18- 58	1.0				[illegible]	6.1				30.4	14.0					7.0	
58- 71	.5				2.0	tr				33.3	15.5					6.9	
71- 84	.9				2.0	tr				33.8	15.8					6.9	
84-120	.7				.5	4.3				32.9	15.3					6.2	

Depth (cm)	Extractable Bases Ca	Mg	Na	K	Sum	Ext Acidity	C. E. C Sum of Cations	C. E. C Na OAc		Ext. Al me / 100 g	Ratios to clay C. E. C	Ext. Fe	15 bar water	Ca/ Mg	Total Solu. Salts ppm		Base saturation Sum of Cations %	Base saturation Na OAc %
	me / 100 g																	
0- 18			.7	23.2				72.5			2.0		.3					100.0
18- 58			.6	93.2				7.0			.1		.3					100.0
58- 71			.7	108.2				63.7			1.2		.3					100.0
71- 84			.8	183.7				72.5			1.3		.3					100.0
84-120			1.0	157.5				50.0			.9		.3					100.0

Depth (cm)	Electrical Conductivity mmho / cm	Water Extract From Saturated Paste Cations Ca	Mg	Na	K	CO 3	HCO 3	Cl	SO 4	Water at Satur %	ESP %	SAR	CSP %	Gypsum %	Ext P_2O_5 ppm	Available Nutrients Ca	Mg	K
		me / liter														mg / 100 g		
0- 18	.4										1.0	.2	100.0	tr	64.0			>100
18- 58	.4										8.6	.1	100.0	27.2	19.5			>100
58- 71	.4										1.1	.1	100.0	tr	20.4			>100
71- 84	.4										1.1	.1	100.0	tr	16.6			>100
84-120	.5										2.0	.1	100.0	28.3	8.0			>100

Classification: Typic Xerochrept; fine, mixed, thermic.
LOcation: Lattakia province, Syria. Approximately 37 km south of Lattakia, 10 km north of Banias, 1.5 km north of the Sin Dam, 50 m west of the highway from Lattakia to Tartous; approximate coordinates 35o 17' N Latitude and 35o 58' E longtitude.
Physiographic Position: Foot slopes of low mountains, elevation about 25 m.a.s.l.
Topography: Moderately sloping topography with a characteristic slope of 6 percent towards west.
Drainage: Well drained, medium surface run-off, slow permeability.
Vegetation: Irrigated agriculture.
Parent Material: Quaternary or more recent Coluvium, derived from Cretaceous Limestone.
Sampled by: H. Yuksel, R. Rizek and S. Kabbas on June 24, 1980
Soil No.: SP - 21



Hori.	Depth (cm)	Description
Ap	0 - 18	Dark reddish brown (5 YR 3/4 d to 5 YR 3/3 m) gravelly clay loam; weak, medium, subangular blocky structure; hard (dry), friable (moist), slightly sticky, slightly plastic; many, very fine, irregular, open pores; frequent, subrounded and angular gravel, constituting approximately 25 percent of the horizon; common, very fine roots; clear, smooth boundary; pH 6.6
B2	18 - 58	Dark reddish gray (5 YR 4/2 m) clay; moderate, medium, subangular blocky structure; firm, sticky and plastic; continuous, thin cutanes, probably of clay minerals, mostly on horizontal and vertical ped faces; many, fine and few, medium, constricted, irregular, open pores; frequent, subrounded and angular gravel, constituting approximately 15 percent of the horizon; few, very fine and fine roots· gradual, smooth boundary; pH 7.0
B3	58 - 71	Reddish brown (5 YR 4/3 m) clay; moderate, medium, subangular blocky structure; firm, sticky and plastic; patchy, thin cutanes, probably of clay minerals, mostly on horizontal and vertical ped faces; few, fine and medium, discontinuous, irregular, closed pores; few subrounded and angular gravel, constituting approximately 10 percent of the horizon; few, very fine and fine roots; gradual, smooth boundary; pH 6.9
C1	71 - 84	Dark reddish brown (5 YR 3/4 m) clay; weak, medium, subangular blocky structure; firm, very sticky and very plastic; few, fine, discontinuous, irregular, closed pores; few, subrounded and angular gravel, constituting approximately 10 percent of the horizon; no visible roots; gradual, smooth boundary; pH 6.9
C2	84 - 120	Yellowish red (5 YR 4/6 m) clay; weak, medium, subangular blocky structure; firm, very sticky and very plastic; few subrounded and angular gravel, constituting approximately 10 percent of the horizon; no visible pores; no visible roots; gradual, smooth boundary; pH 6.2

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SOIL SERIES _____ TAXONOMY _____ SOIL No SP - 22

LOCATION _____ LAB Nos 1073 - 1094 - 1072 - 1087 - 1095 - 1129

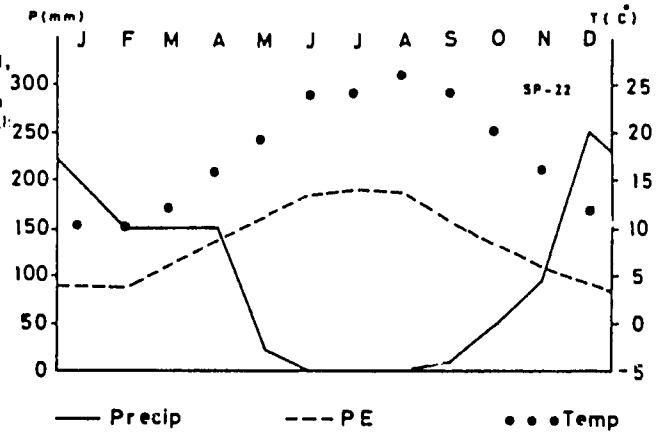
Depth (cm)	Horizon	Size Class and particle diameter (mm)															
		Total			Sand					Silt					Coarse fragments		
		Sand (2-0.05)	Silt (0.05-0.002)	Clay (<0.002)	Very coarse (2-1)	Coarse (1-0.5)	Medium (0.5-0.25)	Fine (0.25-0.1)	Very fine (0.1-0.05)	0.05-0.02	0.02-0.002				>2 % of whole soil	2-19 %	19-76 %	Texture class
		% of < 2 mm														% of <76 mm		
0- 18	A11	35	31	34														CL
18- 35	A12	39	23	38														CL
35- 44	B21	35	19	46														C
44- 56	B22	28	18	54														C
56- 75	C1	29	23	48														C
75-110	C2	34	17	49														C

Depth (cm)	Organic Carbon %	Nitrogen %	C / N	Ext Iron as Fe %	Carbonate as $CaCO_3$		Bulk Density			CDLE	Water Contents					pH	
					<2 mm	<0.002 mm	1/3 bar	ovendry			1/3 bar	15 bar				Satur paste	H_2O / KCl
					%		g / cc				%						
0- 18	1.2				55.0						24.5	10.9					6.8
18- 35	1.7				47.5						25.2	11.3					7.1
35- 44	1.1				60.5						28.4	13.0					7.2
44- 56	.8				64.0						32.1	14.9					7.0
56- 75	.9				47.5						30.0	13.8					7.0
75-110	.6				61.0						29.6	13.6					7.3

Depth (cm)	Extractable Bases					Ext Acidity	C. E. C.			Ext. Al me / 100 g	Ratios to clay				Total Solu. Salts ppm		Base saturation	
	Ca	Mg	Na	K	Sum		Sum of Cations	Na OAc			C. E. C	Ext. Fe	15 bar water	Ca / Mg			Sum of Cations	Na OAc
	me / 100 g																%	
0- 18			.7	371.2				40.0			1.2		.3					100.0
18- 35			.7	397.5				40.0			1.1		.3					100.0
35- 44			.6	297.5				37.5			.8		.3					100.0
44- 56			.6	261.0				37.5			.7		.3					100.0
56- 75			.7	287.5				33.7			.7		.3					100.0
75-110			.3	165.0				46.2			.9		.3					100.0

Depth (cm)	Electrical Conductivity mmho / cm	Water Extract From Saturated Paste								Water at Satur %	ESP %	SAR	CSP %	Gypsum %	Ext P_2O_5 ppm	Available Nutrients		
		Cations																
		Ca	Mg	Na	K	CO_3	HCO_3	Cl	SO_4							Ca	Mg	K
		me / liter														mg / 100 g		
0- 18	.6																	
18- 35	.5										1.8	.1	100.0		24.0			>100
35- 44	.5										1.8	.0	100.0		32.0			>100
44- 56	.4										1.6	.0	100.0		16.0			>100
56- 75	.5										1.6	.1	100.0		11.0			>100
75-110	.4										2.1	.1	100.0		31.5			>100
											.6	.0	100.0		32.0			>100

Classification: Typic Xerochrept; clayey skeletal, mixed, thermic.
Location: Lattakia province, Syria. Approximately 70 km south of Lattakia, 25 km east of Banias, 10 m north of the highway from Banias to Masyaf; approximate coordinates 35o 06' N latitude and 36o 06' E longtitude.
Physiographic Position: Middle and lower slopes of high mountains, elevation about 900 m.a.s.l.
Topography: Mountainous topography with a characteristic slope of more than 100 percent towards west.
Drainage: Well drained, very rapid surface run-off, moderate permeability.
Parent Material: Quaternary or more recent Coluvium, derived mainly from Cretaceous Limestone.
Sampled by: H. Yuksel, R. Rizek and S. Kabbas on July 5, 1980
Soil No.: SP - 22



Hori.	Depth (cm)	Description
A11	0 - 18	Brown (10 YR 5/3 d) to dark brown (10 YR 4/3 m) gravelly clay loam; strong, medium, subangular blocky structure, breaking to strong, fine to medium granular structure; very hard (dry), firm (moist), sticky and slightly plastic; many, very fine to fine, frequent, medium, continuous, irregular, simple, open pores; frequent, subrounded and angular gravel, constituting approximately 25 percent of the horizon; some insect nests and worm casts; many, very fine to medium roots, mostly inside peds; gradual, smooth boundary, pH 6.8
A12	18 - 35	Grayish brown (10 YR 5/2 d) to dark brown (10 YR 4/3 m) gravelly clay loam; strong, medium, subangular blocky structure, breaking to strong, coarse granular structure; very hard (dry), firm (moist), sticky and plastic; many, very fine to fine, continuous, irregular, simple, open pores; frequent, subrounded and angular gravel and stones, constituting approximately 40 percent of the horizon; few insect nests and worm casts; many, very fine to fine roots, mostly inside peds; clear, smooth boundary; pH 7.1
B21	35 - 44	Brown (10 YR 5/3 m) gravelly clay; moderate, medium, subangular blocky structure; firm (moist), sticky and plastic; frequent, very fine to fine, continuous, irregular, simple, open pores; frequent, subrounded and angular gravel and stones, constituting approximately 40 percent of the horizon; common, very fine to fine roots; clear, smooth boundary; pH 7.2
B22	44 - 56	Yellowish brown (10 YR 5/4 m) gravelly clay; weak, moderate to coarse subangular blocky structure; firm (moist), sticky and plastic; few, fine, continuous, irregular, simple, open pores; abundant subrounded and angular gravel and stones, constituting approximately 50 percent of the horizon; few, very fine roots; clear, smooth boundary; pH 7.0
C1	56 - 75	Dark brown (10 YR 4/3 m) gravelly clay; weak, coarse subangular blocky structure; very firm (moist), very sticky and very plastic; few, very fine, discontinuous, irregular, simple, closed pores; frequent, subrounded and angular gravel and stones, constituting approximately 30 percent of the horizon; few, very fine roots; clear, smooth boundary; pH 7.0
C2	75 - 110	Dark yellowish brown (10 YR 4/4 m) clay; massive; extremely firm (moist), very sticky and very plastic; frequent, subrounded and rounded gravel and stones, constituting approximately 20 percent of the horizon; few, very fine roots; pH 7.3

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SOIL SERIES _____ TAXONOMY _____ SOIL No SP - 23

LOCATION _____ LAB Nos 1206 - 1195 - 1250 - 1221 - 1198

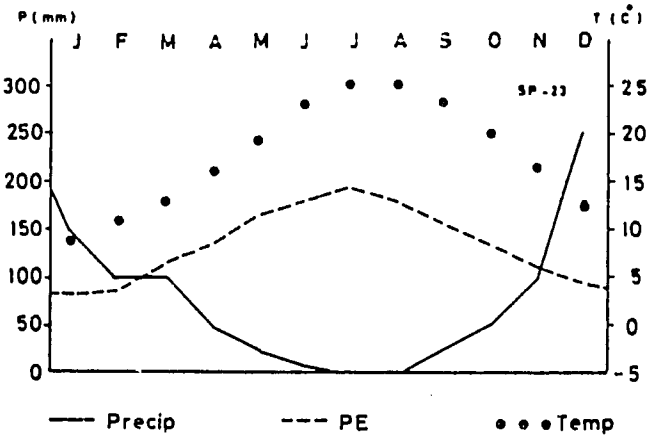
Depth (cm)	Horizon	Size Class and particle diameter (mm)																Texture class
		Total			Sand					Silt					Coarse fragments			
		Sand (2-0.05)	Silt (0.05-0.002)	Clay (<0.002)	Very coarse (2-1)	Coarse (1-0.5)	Medium (0.5-0.25)	Fine (0.25-0.1)	Very fine (0.1-0.05)	0.05-0.02	0.02-0.002				>2 % of whole soil	2-19 %	19-76 %	
		% of < 2 mm														% of <76 mm		
0-14	AP	14	31	55														C
14-24	A1	12	30	58														C
24-54	B21	22	21	57														C
54-70	B22	30	22	48														C
70-110	C	17	22	61														C

Depth (cm)	Organic Carbon %	Nitrogen %	C / N	Ext Iron as Fe %	Carbonate as Ca Co 3 <2 mm %	Carbonate as Ca Co 3 <0.002 mm %	Bulk Density 1/3 bar g/cc	Bulk Density ovendry g/cc	COLE	Water Contents 1/3 bar %	Water Contents 15 bar %				pH Satur paste	pH H_2O	pH KCl
0-14	.9			5.2	43.0					34.5	16.1					7.2	
14-24	.8			5.0	41.0					35.8	16.8					7.3	
24-54	1.5			4.5	29.0					34.0	15.9					7.4	
54-70	.6			4.6	27.5					29.8	13.7					7.2	
70-110	.4			5.7	27.0					36.3	17.0					7.3	

Depth (cm)	Extractable Bases Ca (me / 100 g)	Mg	Na	K	Sum	Ext Acidity	C E C Sum of Cations	C E C Na OAc	Ext. Al me / 100 g	Ratios to clay C E C	Ext. Fe	15 bar water	Ca / Mg	Total Solu. Salts ppm		Base saturation Sum of Cations %	Base saturation Na OAc %
0-14			.3	.5				45.0		.8	.1	.3					100.0
14-24			.2	.3				47.0		.8	.1	.3					100.0
24-54			.5	.2				30.0		.5	.1	.3					100.0
54-70			.3	.1				64.0		1.3	.1	.3					100.0
70-110			.5	.2				72.0		1.2	.1	.3					100.0

Depth (cm)	Electrical Conductivity mmho / cm	Water Extract From Saturated Paste: Cations Ca (me / liter)	Mg	Na	K	CO_3	HCO_3	Cl	SO_4	Water at Satur %	ESP %	SAR	CSP %	Gypsum %	Ext P_2O_5 ppm	Available Nutrients Ca (mg / 100 g)	Mg	K
0-14	.4										.7	.4	100.0		6.0			47.2
14-24	.4										.4	.3	100.0		11.0			28.3
24-54	.3										1.7	.6	100.0		7.2			18.9
54-70	.4										.5	.5	100.0		4.0			9.4
70-110	.4										.7	.6	100.0		6.0			18.9

Classification: Vertic Xerochrept; fine, mixed, thermic.
Location: Lattakia province, Syria. Approximately 4.5 km north of Lattakia, 1 km northwest of Damsarkho, 25 m east of the road from Damsarkho to Ibn Hani; approximate coordinates 35o 34' N latitude and 35o 46' E longtitude.
Physiographic Position: Terrace, elevation about 10 m.a.s.l.
Topography: Level topography with a characteristic slope of 1 percent.
Drainage: Well drained, very slow surface run-off, slow permeability.
Parent Material: Upper Quaternary terrace deposits.
Sampled by: H. Yuksel, R. Rizek and S. Kabbas on July 3, 1980
Soil No.: SP - 23



Hori.	Depth (cm)	Description
Ap	0 - 14	Brown (10 YR 5/3 d) to dark brown (10 YR 4/3 m) clay; moderate, medium, subangular blocky structure; approximately 1 cm wide craks extending up to 20 cm depth; extremely hard (dry), very firm (moist), very sticky and very plastic; many, fine to medium, irregular, simple, open pores; many insect nests and worm casts; common, very fine to medium roots, mostly inside peds; clear, smooth boundary, pH 7.2
A1	14 - 24	Dark brown (10 YR 4/3 m) clay; moderate, medium, subangular blocky structure; very firm, very sticky and very plastic; broken, thin cutanes, probably of clay minerals, mainly on ped faces and in voids; many, medium to coarse, continuous, irregular, simple, open pores; few insect nests and worm casts; common, very fine to medium roots, mostly inside peds; gradual, smooth boundary; pH 7.3
B 21	24 - 54	Dark brown (10 YR 4/3 m) clay; strong, medium to coarse subangular blocky structure; continuous, thin cutanes, probably of clay minerals, mainly on horizontal and vertical ped faces and in voids; frequent, fine to medium, continuous, irregular, simple, open pores; some insect nests and worm casts, few, very fine to fine roots, mostly between peds; gradual, smooth boundary; pH 7.4
B22	54 - 70	Dark brown (10 YR 4/3 m) clay; moderate, medium to coarse subangular blocky structure; firm (moist), sticky and plastic; broken, thin cutanes, probably of clay minerals, mostly on vertical ped faces; few, fine, discontinuous, irregular, closed pores; few, very fine roots, mostly between peds; diffuse, smooth boundary; pH 7.2
C	70 - 110	Very grayish brown (10 YR 3/2 m) clay; weak, coarse subangular blocky structure; firm (moist), sticky and plastic; no visible pores; no visible roots, pH 7.3

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SOIL SERIES _____ TAXONOMY _____ SOIL No SP - 24

LOCATION _____ LAB Nos. 1227 - 1223

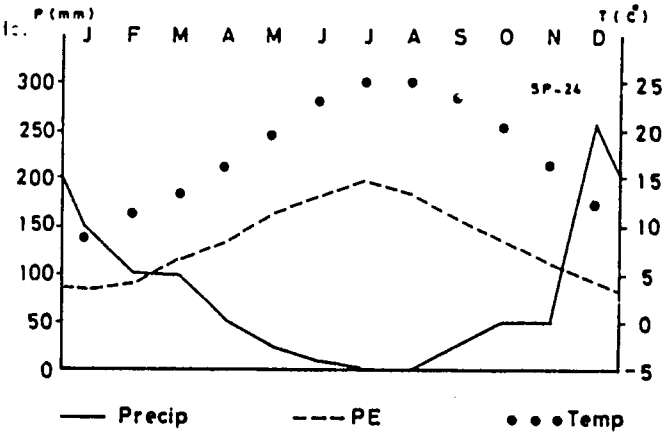
Depth (cm)	Horizon	Size Class and particle diameter (mm) — Total: Sand (2-0.05)	Total: Silt (0.05-0.002)	Total: Clay (<0.002)	Sand: Very coarse (2-1)	Sand: Coarse (1-0.5)	Sand: Medium (0.5-0.25)	Sand: Fine (0.25-0.1)	Sand: Very fine (0.1-0.05)	Silt: 0.05-0.02	Silt: 0.02-0.002	Coarse fragments >2 % of whole soil	Coarse fragments 2-19 % of <76 mm	Coarse fragments 19-76 % of <76 mm	Texture class
		% of < 2 mm													
0- 13	AP	31	22	47											C
13- 28	A1	34	19	47											C

Depth (cm)	Organic Carbon %	Nitrogen %	C / N	Ext Iron as Fe %	Carbonate as Ca Co 3 <2 mm %	Carbonate as Ca Co 3 <0.002 mm %	Bulk Density 1/3 bar g/cc	Bulk Density ovendry g/cc	CDL6	Water Contents 1/3 bar %	Water Contents 15 bar %			pH Satur paste	pH H_2O /	pH K Cl / :
0- 13	1.6			7.5	3.0					29.4	13.5				6.5	
13- 28	1.3			5.7	9.0					28.9	13.2				7.2	

Depth (cm)	Extractable Bases Ca	Mg	Na	K	Sum (me / 100 g)	Ext Acidity	C.E.C Sum of Cations	C.E.C Na OAc		Ext Al me / 100 g	Ratios to clay C.E.C	Ratios to clay Ext. Fe	Ratios to clay 15 bar water	Ca/ Mg	Total Solu. Salts ppm		Base saturation Sum of Cations %	Base saturation NaOAc %
0- 13			.4	.2				56.0			1.2	.2	.3					100.0
13- 28			.6	.2				56.0			1.2	.1	.3					100.0

Depth (cm)	Electrical Conductivity mmho / cm	Water Extract From Saturated Paste — Cations Ca	Mg	Na	K	CO 3	HCO 3	Cl	SO 4	Water at Satur %	ESP %	SAR	CSP %	Gypsum %	Ext P_2O_5 ppm	Available Nutrients Ca (mg / 100 g)	Mg	K
		me / litre																
0- 13	.4										.7	.6	100.0		46.0			18.9
13- 28	.3										1.1	.7	100.0		2.3			18.9

Classification: Typic Xerorthent; fragmental, mixed, thermic.
Location: Lattakia province, Syria. Approximately 12½ km north of Lattakia, 2 km north of Karsana, 20 m east of the highway from Lattakia to Kassab; approximate coordinates 35o 38' N latitude and 35o 50' E longtitude.
Physiographic Position: Gently undulating wide summits of low hills, elevation about 60 m.a.s.l.
Topography: Gently sloping topography with a characteristic slope of 13 percent towards south.
Drainage: Well drained, slow surface run-off, moderately rapid permeability.
Vegetation: Non irrigated wheat and corn.
Parent Material: Quaternary or more recent coluvium, derived mainly from Pliocene, Limestone and Marle.
Sampled by: H. Yuksel, R. Rizek and S. Kabbas on July 5, 1980
Soil No.: SP - 24



Hori.	Depth (cm)	Description
Ap	0 - 13	Dark gray (10 YR 4/1 d) to very dark grayish brown (10 YR 3/2 m) gravelly clay; strong, medium, subangular blocky structure; approximately 1 cm craks extending up to 10 cm; very hard (dry), very firm (moist), sticky and plastic; patchy thin cutanes of clay, mostly on voids; many, fine to medium, discontinuous, irregular, simple, closed pores; abundant, subrounded to angular gravel, constituting approximately 45 percent of the horizon; few insect nests; common, very fine to medium roots, mainly between peds; gradual, smooth boundary; pH 6.5
A1	13 - 28	Dark gray (10 YR 4/1 d) to very dark gray (10 YR 3/1 m) gravelly clay; very firm (moist), very sticky and very plastic; patchy, thin cutanes of clay, mainly on horizontal and vertical ped faces and in voids; abundant, subrounded and angular gravel, constituting approximately 60 percent of the horizon; few, very fine to fine roots, mostly between peds; gradual, smooth boundary; pH 7.2
C1	28 - 48	Very dark gray (10 YR 3/1 m) very gravelly clay; structureless; abundant, subrounded gravel and stones; constituting approximately 70 percent of the horizon; diffuse, smooth boundary.
C2	48 - 60	Dark brown (10 YR 3/3 m) clay; structureless; abundant, subrounded and angular gravel and stones, constituting approximately 80 percent of the horizon; diffuse, smooth boundary.
C3	60+	Horizon mostly consists of subrounded and angular gravels and stones which constitute more than 90 percent of the soil volume; fine earth fraction that fills between the coarse fragments is of clay.

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SOIL SERIES _____ TAXONOMY _____ SOIL No SP - 25

LOCATION _____ LAB Nos 1244

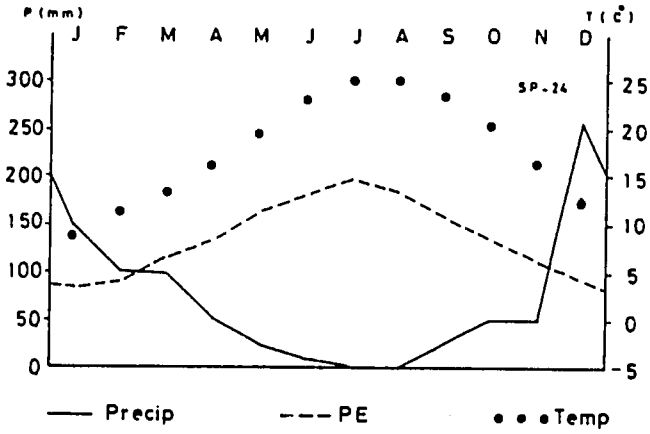
Depth (cm)	Horizon	Size Class and particle diameter (mm): Total Sand (2-0.05)	Total Silt (0.05-0.002)	Total Clay (<0.002)	Sand: Very coarse (2-1)	Sand: Coarse (1-0.5)	Sand: Medium (0.5-0.25)	Sand: Fine (0.25-0.1)	Sand: Very fine (0.1-0.05)	Silt: 0.05-0.02	Silt: 0.02-0.002				Coarse fragments: >2 % of whole soil	Coarse fragments: 2-19 % of <76 mm	Coarse fragments: 19-76 % of <76 mm	Texture class
		% of < 2 mm																
0- 16	A1	34	19	47														C

Depth (cm)	Organic Carbon %	Nitrogen %	C / N	Ext Iron as Fe %	Carbonate as $CaCO_3$ < 2 mm %	Carbonate as $CaCO_3$ < 0.002 mm %	Bulk Density 1/3 bar g/cc	Bulk Density ovendry g/cc		COLE	Water Contents 1/3 bar %	Water Contents 15 bar %				pH Satur paste	pH H_2O	pH KCl
0- 16	1.5			11.8	3.5						28.9	13.2					7.3	

Depth (cm)	Extractable Bases me / 100 g: Ca	Mg	Na	K	Sum	Ext Acidity	C. E. C. Sum of Cations	C. E. C. Na OAc		Ext. Al me / 100 g	Ratios to clay: C. E. C	Ext. Fe	15 bar water	Ca/ Mg	Total Solu. Salts ppm		Base saturation Sum of Cations %	Base saturation Na OAc %
0- 16			.6	.2				50.0			1.2	.3	.3					100.0

Depth (cm)	Electrical Conductivity mmho / cm	Water Extract From Saturated Paste, Cations me / liter: Ca	Mg	Na	K	CO_3	HCO_3	Cl	SO_4	Water at Satur %	ESP %	SAR	CSP %	Gypsum %	Ext P_2O_5 ppm	Available Nutrients mg / 100 g: Ca	Mg	K
0- 16	.6										1.1	.7	100.0		2.3			17.9

Classification: Lithic Xerothent
Location: Lattakia province, Syria. Approximately 8 km east of Lattakia, 1½ km east of El-Bassa, 100 m west of the highway from Lattakia to Tartous; approximate coordinates 35o 30' N latitude and 35o 51' E longtitude.
Physiographic Position: Wide summits and backslopes of low hills; elevatioh about 15 m.a.s.l.
Topography: Gently rolling topography with a characteristic slope of 6 percent towards northwest.
Drainage: Well drained, medium surface run-off, moderately rapid permeability.
Parent Material: Undifferentiated weakly consolidated deposits of upper Quaternary eras.
Sampled by: H. Yuksel and R. Rizek on July 6, 1980
Soil No.: SP - 25



Hori.	Depth (cm)	Description
A1	0 - 16	Yellowish brown (10 YR 5/4 d) to dark brown (10 YR 4/3 m) sandy loam; weak, fine, subangular blocky structure; soft (dry), very friable (moist), slightly sticky, non plastic; many, fine to medium, continuous, irregular, simple, open pores; frequent, rounded and angular gravel, constituting approximately 20 percent of the horizon; few fine to medium roots, mostly inside peds; clear broken boundary to the bedrock; pH 7.3
R	16+	Undifferentiated weakly consolidated material of Quaternary era.

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SOIL SERIES _____ TAXONOMY _____ SOIL No SP - 26

LOCATION _____ LAB Nos. 1220 - 1202 - 1200 - 1256 - 1241 - 1246

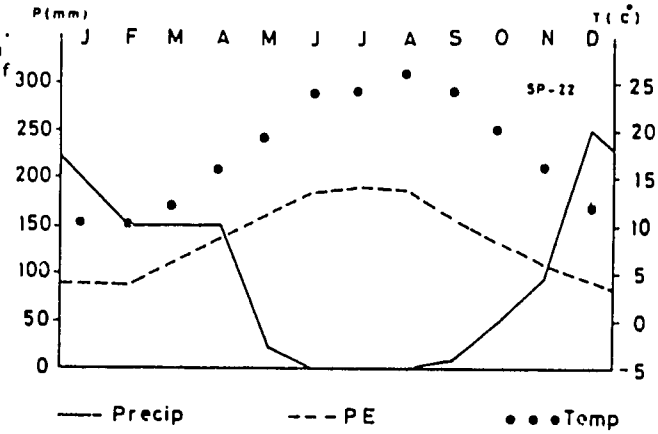
Depth (cm)	Horizon	Size Class and particle diameter (mm) — Total: Sand (2-0.05)	Total: Silt (0.05-0.002)	Total: Clay (<0.002)	Sand: Very coarse (2 - 1)	Sand: Coarse (1 - 0.5)	Sand: Medium (0.5 - 0.25)	Sand: Fine (0.25 - 0.1)	Sand: Very fine (0.1 - 0.05)	Silt: 0.05 - 0.02	Silt: 0.02 - 0.002	Coarse fragments: >2 % of whole soil	Coarse fragments: 2 - 19 % of <76 mm	Coarse fragments: 19 -76 % of <76 mm	Texture class
		% of < 2 mm													
0- 12	A11	28	28	34											C
12- 27	A12	27	29	44											C
27- 50	C1	26	28	46											C
50- 82	C2	29	22	49											C
82-106	C3	34	21	45											C
106-140	C4	24	21	55											C

Depth (cm)	Organic Carbon %	Nitrogen %	C / N	Ext. Iron as Fe %	Carbonate as Ca Co 3 < 2 mm	Carbonate as Ca Co 3 < 0.0 mm	Bulk Density 1/3 bar	Bulk Density ovendry	COLE	Water Contents 1/3 bar	Water Contents 15 bar	pH Satur. paste	pH H_2O	pH KCl
					%		g / cc			%				
0- 12	1.3				53.5					23.8	10.5		7.4	
12- 27	.9				53.0					28.9	13.2		7.4	
27- 50	1.1				51.0					29.7	13.7		7.2	
50- 82	1.6				47.0					30.3	14.0		7.2	
82-106	1.5				42.0					28.3	12.9		7.4	
106-140	1.2				44.0					33.0	15.4		7.3	

Depth (cm)	Extractable Bases: Ca	Mg	Na	K	Sum	Ext Acidity	C. E. C: Sum of Cations	Na OAc	Ext. Al me / 100 g	Ratios to clay: C. E. C	Ext. Fe	15 bar water	Ca/ Mg	Total Solu. Salts ppm	Base saturation: Sum of Cations	Na OAc
	me / 100 g														%	
0- 12			.3	.4				54.0		1.6		.3				100.0
12- 27			.3	.1				56.0		1.3		.3				100.0
27- 50			.4	.2				47.0		1.0		.3				100.0
50- 82			.3	.2				48.0		1.0		.3				100.0
82-106			.4	.4				30.0		.7		.3				100.0
106-140			.3	.2				28.0		.5		.3				100.0

Depth (cm)	Electrical Conductivity mmho / cm	Water Extract From Saturated Paste — Cations: Ca	Mg	Na	K	CO 3	HCO 3	Cl	SO 4	Water at Satur %	ESP %	SAR	CSP %	Gypsum %	Ext P_2O_5 ppm	Available Nutrients: Ca	Mg	K
		me / liter														mg / 100 g		
0- 12	.5										.6	.4	100.0		10.0			37.8
12- 27	.4										.5	.5	100.0		7.0			9.4
27- 50	.4										.9	.6	100.0		6.8			18.9
50- 82	.3										.5	.5	100.0		24.3			18.9
82-106	.4										1.3	.5	100.0		5.5			7.8
106-140	.5										1.1	.5	100.0		3.1			18.9

Classification: Typic Chromoxerert; fine, mixed, thermic.
Location: Lattakia province, Syria. Approximately 26 km south of Lattakia, 3 km east of Jabia. 25 m west of the highway from Lattakia to Tartous; approximate coordinates 35o 22' N latitude and 35o 58' E longtitude.
Physiographic Position: Aluvial plains, elevation about 50 m.a.s.l.
Topography: Level to gently sloping topography with a characteristic slone of 3 percent towards west.
Drainage: Moderately well drained, very slow surface run-off, slow permeability.
Parent Material: Quaternary or more recent aluvium, derived mainly from Pliocene and/or Cretaceous Limestone.
Sampled by: H. Yuksel and R. Rizek on July 6, 1980
Soil No.: SP - 26



Hori.	Depth (cm)	Description
A11	0 - 12	Dark grayish brown (10 YR 4/2 d) to very dark grayish brown (10 YR 3/2 m) clay; moderate, medium, subangular blocky structure; approximately 1 cm wide craks extending up to 60 cm; very hard (dry), extremely firm (moist), very sticky and very plastic; frequent, very fine to fine, continuous, irregular, simple open pores; few rounded gravel, constituting approximately 10 percent of the horizon; few insect nests and worm casts; many, very fine to medium roots, mostly inside peds; abrupt, smooth boundary; pH 7.4
A12	12 - 27	Dark brown (10 YR 4/3 m) clay; strong, medium, subangular blocky structure; extremely firm (moist), very sticky and very plastic; few, very fine to fine, continuous, irregular, simple, open pores; few, rounded gravel, constituting approximately 10 percent of the horizon; common, very fine to fine roots, mostly inside peds; gradual, smooth boundary, pH 7.4
C1	27 - 50	Dark grayish brown (10 YR 4/2 m) clay; strong, coarse subangular blocky structure; extremely firm (moist), very sticky and very plastic; few, very fine to fine, continuous, irregular, simple, open pores; frequent, rounded gravel, constituting approximately 20 percent of the horizon; few, very fine to fine roots, mostly inside peds; diffuse, smooth boundary; pH 7.2
C2	50 - 82	Dark yellowish brown (10 YR 4/4 m) clay; moderate, coarse, subangular blocky structure; extremely firm (moist), very sticky and very plastic; few, fine to medium, discontinuous, irregular, closed pores; frequent rounded gravel, constituting approximately 25 percent of the horizon; few, very fine roots, mostly inside peds; diffuse, smooth boundary; pH 7.2
C3	82 - 106	Dark brown (10 YR 4/3 m) clay; massive; extremely firm (moist), very sticky and very plastic; few, very fine to fine, discontinuous, random, irregular, closed pores; frequent, rounded gravel, constituting approximately 20 percent of the horizon; diffuse, smooth boundary; pH 7.4
C4	106 - 140	Very dark grayish brown (10 YR 3/2 m) clay; massive; extremely firm (moist), very sticky and very plastic; few, fine to medium, discontinuous, irregular, closed pores; few rounded gravel, constituting approximately 10 percent of the horizon; no visible roots; pH 7.3

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SOIL SERIES _____ TAXONOMY _____ SOIL No SP - 27

LOCATION _____ LAB Nos 1242 - 1196 - 1235 - 1257 - 1196

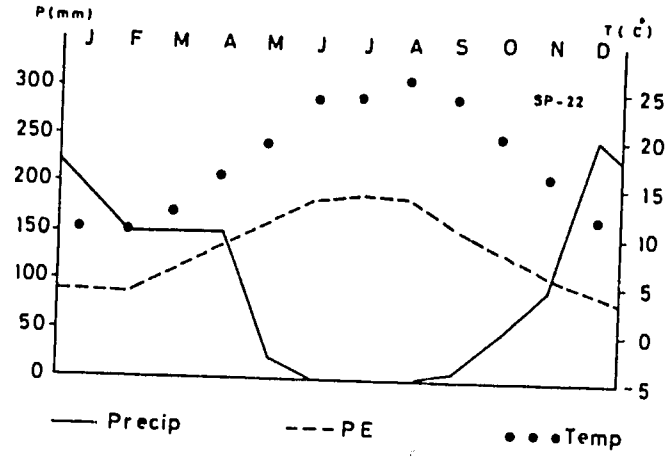
Depth (cm)	Horizon	Size Class and particle diameter (mm): Total Sand (2-0.05)	Total Silt (0.05-0.002)	Total Clay (<0.002)	Sand: Very coarse (2-1)	Sand: Coarse (1-0.5)	Sand: Medium (0.5-0.25)	Sand: Fine (0.25-0.1)	Sand: Very fine (0.1-0.05)	Silt: 0.05-0.02	Silt: 0.02-0.002	Coarse fragments >2 % of whole soil	Coarse fragments 2-19 % of <76 mm	Coarse fragments 19-76 % of <76 mm	Texture class
		% of < 2 mm													
0- 3	A1	36	23	41											C
3- 18	B21	26	25	49											C
18- 25	B22	37	22	41											C
25- 33	B3	23	33	44											C
33- 47	C	15	41	44											C

Depth (cm)	Organic Carbon %	Nitrogen %	C / N	Ext Iron as Fe %	Carbonate as Ca Co 3 < 2 mm %	Carbonate < 0.002 mm %	Bulk Density 1/3 bar g/cc	Bulk Density ovendry g/cc	COLE	Water Contents 1/3 bar %	Water Contents 15 bar %				pH Satur paste	pH H_2O	pH K Cl
0- 3	2.7			14.5	3.5					26.6	12.0					7.2	
3- 18	2.9			9.5	2.5					30.7	14.2					6.8	
18- 25	2.1			7.0	30.0					26.5	12.0					6.9	
25- 33	2.1			6.0	48.5					29.5	13.5					6.9	
33- 47	1.9			6.7	61.0					30.7	14.1					7.2	

Depth (cm)	Extractable Bases Ca (me / 100 g)	Mg	Na	K	Sum	Ext Acidity	C E C Sum of Cations	C E C Na OAc	Ext. Al me / 100 g	Ratios to clay C E C	Ext. Fe	15 bar water	Ca / Mg	Total Solu. Salts ppm	Base saturation Sum of Cations %	Base saturation Na OAc %
0- 3			.5	.9				42.0		1.0	.4	.3				100.0
3- 18			.5	.5				70.0		1.4	.2	.3				100.0
18- 25			.3	.4				52.0		1.3	.2	.3				100.0
25- 33			.2	.2				48.0		1.1	.1	.3				100.0
33- 47			.1	.1				54.0		1.2	.2	.3				100.0

Depth (cm)	Electrical Conductivity mmho / cm	Water Extract From Saturated Paste: Cations Ca (me / liter)	Mg	Na	K	CO 3	HCO 3	Cl	SO 4	Water at Satur %	ESP %	SAR	CSP %	Gypsum %	Ext P_2O_5 ppm	Available Nutrients Ca (mg / 100 g)	Mg	K
0- 3	.4										1.2	.5	100.0		98.0			85.0
3- 18	.4										.7	.6	100.0		9.0			47.2
18- 25	.5										.6	.4	100.0		2.0			37.8
25- 33	.7										.4	.4	100.0		7.6			18.9
33- 47	.4										.2	.3	100.0		7.0			9.4

Classification: Lithic Xerochrept; fine, mixed, thermic.
Location: Tartous province, Syria. Approximately 71 km east of Tartous, 16 km west of Draikish, 15 m south of the road from Tartous to Draikish; approximate coordinates 34o 56' N latitude and 35o 59' E longtitude.
Physiographic Position: Steep shoulders and middle slopes of medium height mountains, elevation about 300 m.a.s.l.
Topography: Steep topography with a characteristic slope of 45 percent towards north.
Drainage: Well drained, medium to rapid surface run-off, moderately slow permeability.
Parent Material: Cretaceous Limestone.
Sampled by: H. Yuksel, R. Rizek and S. Darwish on July 8, 1980
Soil No.: SP - 27



Hori.	Depth (cm)	Description
A1	0 - 3	Reddish brown (5 YR 4/4 d) to dark reddish brown (5 YR 3/3 m) gravelly clay; strong, medium, subangular blocky structure; extremely hard (dry), extremely firm (moist), very sticky and very plastic; continuous, moderately thin cutanes of clay minerals on horizontal ped faces; many, very fine to fine, continuous, vertical, inped, irregular, open pores; abundant, subrounded and angular gravel and stones, constituting approximately 50 percent of the horizon; many fine to medium roots, mostly between peds; clear, smooth boundary; pH 7.2
B21	3 - 18	Reddish brown (5 YR 4/4 d) to dark reddish brown (5 YR 3/4 m) gravelly clay; strong, medium, subangular blocky structure; extremely hard (dry), extremely firm (moist), very sticky and very plastic; continuous thin cutanes, probably of clay minerals mostly on horizontal ped faces; many, very fine to fine, continuous, vertical, irregular, open pores; frequent, subrounded and angular gravel and stones, constituting approximately 35 percent of the horizon; many termites and insect nests; common, fine to medium roots, mostly between peds; clear, smooth boundary; pH 6.8
B22	18 - 25	Reddish brown (5 YR 4/4 m) gravelly clay; strong, medium, subangular blocky structure; extremely firm (moist), sticky and plastic; continuous, moderately thick cutanes, probably of clay minerals, mostly on horizontal ped faces; many, fine, continuous, vertical, irregular, open pores; frequent, subrounded to angular gravel, constituting approximately 30 percent of the horizon; many termites and insect nests; many, fine to medium roots mostly between peds; gradual, smooth boundary; pH 6.9
B 3	25 - 33	Yellowish red (5 YR 5/6 m) gravelly clay; moderate to weak, fine, subangular blocky structure; firm (moist), sticky and slightly plastic; few, fine, continuous, vertical, irregular, open pores; abundant, subrounded and angular gravel, constituting approximately 45 percent of the horizon; few termites and insect nests; few, medium roots, clear, smooth boundary; pH 6.9
C	33 - 47	Yellowish red (5 YR 4/8 m) gravelly clay; moderate to weak, fine, subangular blocky structure; firm (moist), sticky and slightly plastic; few, fine, continuous, vertical, irregular, open pores; abundant subrounded and angular gravel, constituting approximately 50 percent of the horizon; few termites and insect nests; few, medium roots; pH 7.2

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SOIL SERIES _____ TAXONOMY _____ SOIL No. SP - 28

LOCATION _____ LAB No/s. 1253 - 1247 - 1223 - 1219 - 1253

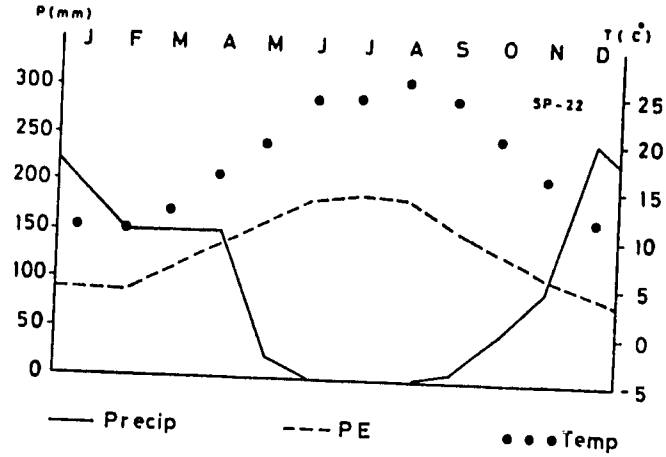
Depth (cm)	Horizon	Size Class and particle diameter (mm)																
		Total			Sand					Silt					Coarse fragments			
		Sand (2-0.05)	Silt (0.05-0.002)	Clay (<0.002)	Very coarse (2-1)	Coarse (1-0.5)	Medium (0.5-0.25)	Fine (0.25-0.1)	Very fine (0.1-0.05)	0.05-0.02	0.02-0.002				>2 % of whole soil	2-19 %	19-76 %	Texture class
		% of < 2 mm														% of <76 mm		
0-14	AP		17	57														C
14-35	B2	1..	12	75														C
35-46	B3	14	9	77														C
46-57	C1	15	19	66														C
57-90	C2	13	14	73														C

Depth (cm)	Organic Carbon %	Nitrogen %	C / N	Ext. Iron as Fe %	Carbonate as $CaCO_3$		Bulk Density			COLE	Water Contents					pH	
					<2 mm	<0.002 mm	1/3 bar	ovendry			1/3 bar	15 bar				Satur paste	H_2O	KCl
					%		g / cc				%							
0-14	1.5				1.0	28.[illegible]					33.4	15.6					6.8	
14-35	.9				1.5	26.1					41.3	19.7					6.4	
35-46	.6				2.0	tr					41.8	20.0					7.3	
46-57	.5				1.2	28.5					38.0	18.0					6.4	
57-90	.5				2.0	tr					40.6	19.3					6.3	

Depth (cm)	Extractable Bases					Ext Acidity	C. E. C.			Ext. Al me / 100 g	Ratios to clay			Ca / Mg	Total Solu. Salts ppm		Base saturation	
	Ca	Mg	Na	K	Sum		Sum of Cations	Na OAc			C. E. C	Ext. Fe	15 bar water				Sum of Cations	Na OAc
	me / 100 g																%	
0-14			.3	.3				30.0			.5		.3					100.0
14-35			.3	.2				32.0			.4		.3					100.0
35-46			.4	.2				56.0			.7		.3					100.0
46-57			.9	.2				54.0			.3		.3					100.0
57-90			.4	.2				26.0			.4		.3					100.0

Depth (cm)	Electrical Conductivity mmho / cm	Water Extract From Saturated Paste								Water at Satur %	ESP %	SAR	CSP %	Gypsum %	Ext P_2O_5 ppm	Available Nutrients		
		Cations																
		Ca	Mg	Na	K	CO_3	HCO_3	Cl	SO_4							Ca	Mg	K
		me / liter														mg / 100 g		
0-14	.4										1.0	.4	100.0	1.8	31.2			28.3
14-35	.4										.9	.5	100.0	2.4	6.5			18.9
35-46	.4										.7	.6	100.0	tr	tr			18.9
46-57	.4										1.7	.9	100.0	11.4	7.0			18.9
57-90	.4										1.5	.6	100.0	tr	8.0			18.9

Classification: Typic Xerochrept, clayey skeletal, mixed, thermic.
Location: Tartous province, Syria. Approximately 7½ km east of Tartous, 4 km west of Memlake, 25 m south of the road from Tartous to Draikish; approximate coordinates 34o 54' N latitude and 35o 57' E longtitude.
Physiographic Position: Steep middle and upper slopes of medium height mountains, elevation about 200 m.a.s.l.
Topography: Steep topography with a characteristic slope of 15 percent towards southeast.
Drainage: Well drained, medium surface run-off, slow permeability.
Parent Material: Cretaceous Limestone.
Sampled by: H. Yuksel, R. Rizek and S. Darwish on July 9, 1980
Soil No.: SP - 28



Hori.	Depth (cm)	Description
Ap	0 - 14	Reddish brown (5 YR 4/4 d) dark reddish brown (5 YR 3/4 m) stony clay; moderate, medium, subangular blocky structure; hard (dry), firm (moist), sticky and plastic; continuous, moderately thick cutanes, probably of clay minerals, mostly on horizontal ped faces; many, fine to medium, discontinuous, vertical, inped, irregular, closed pores; dominant, subrounded and angular gravel and stones, constituting approximately 80 percent of the horizon; plowed; few biological activities; many, very fine to fine roots; clear, smooth boundary; pH 6.8
B2	14 - 35	Yellowish red (5 YR 4/6 m) stony clay; strong, medium, subangular blocky structure; firm (moist), very sticky and very plastic; discontinuous, thin cutanes, probably of clay minerals, mostly on horizontal ped faces; many fine to medium, discontinuous, vertical, closed pores; frequent, subrounded and angular gravels and stones, constituting approximately 40 percent of the horizon; few biological activities; common, very fine to medium roots; clear smooth boundary; pH 6.4
B3	35 - 46	Yellowish red (5 YR 5/8 m) stony clay; strong, medium, subangular blocky structure; very firm (moist), very sticky and very plastic; continuous, moderately thick cutanes, probably of clay minerals mostly on horizontal ped faces; few, fine, discontinuous, vertical, irregular, closed pores; abundant, subrounded and angular gravels and stones, constituting approximately 50 percent of the horizon; common, very fine to medium roots; clear, smooth boundary; pH 7.3
C1	46 - 57	Strong brown (7.5 YR 5/6 m) stony clay; moderate, medium, subangular blocky structure; firm (moist), sticky and plastic; continuous thin cutanes, probably of clay minerals, mostly on horizontal ped faces; few, very fine to fine, discontinuous, vertical, irregular, closed pores; abundant, subrounded and angular gravels and stones, constituting approximately 50 percent of the horizon; few, very fine to fine roots; gradual, smooth boundary; pH 6.4
C2	57 - 90	Strong brown (7.5 YR 5/6 m) stony clay; firm (moist), sticky and plastic; continuous thin cutanes, probably of clay minerals, mostly on horizontal ped faces; very fine, discontinuous, vertical, irregular, closed pores; abundant, subrounded and angular gravels and stones, constituting approximately 50 percent of the horizon; few, fine roots; pH 6.3

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SOIL SERIES _____ TAXONOMY _____ SOIL. No. SP - 29

LOCATION _____ LAB Nos. 1249 - 1228

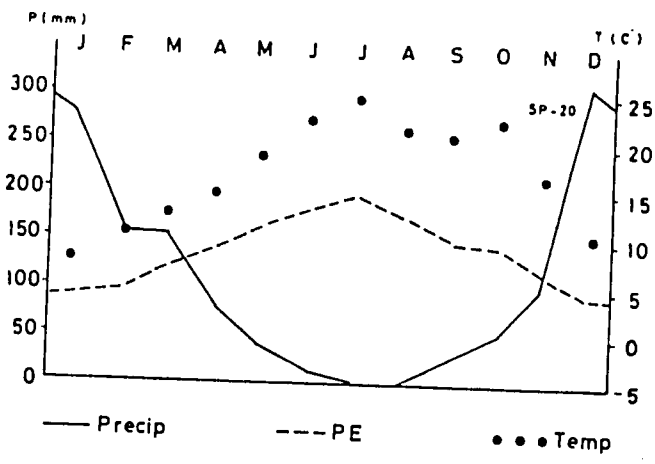
Depth (cm)	Horizon	Size Class and particle diameter (mm) — Total: Sand (2-0.05)	Silt (0.05-0.002)	Clay (<0.002)	Sand: Very coarse (2-1)	Coarse (1-0.5)	Medium (0.5-0.25)	Fine (0.25-0.1)	Very fine (0.1-0.05)	Silt: 0.05-0.02	0.02-0.002	Coarse fragments: >2 % of whole soil	2-19 %	19-76 %	Texture class
		% of < 2 mm											% of <76 mm		
0- 13	A11	26	26	48											C
13- 28	A12	19	19	65											C

Depth (cm)	Organic Carbon %	Nitrogen %	C / N	Ext. Iron as Fe %	Carbonate as $CaCO_3$ <2 mm %	Carbonate as $CaCO_3$ <0.002 mm %	Bulk Density 1/3 bar g/cc	Bulk Density ovendry g/cc	COLE	Water Contents 1/3 bar %	Water Contents 15 bar %	pH Satur. paste	pH H_2O	pH KCl
0- 13	2.8				1.0	25.6				30.4	14.0		7.2	
13- 28	2.0				2.0	tr				37.6	17.8		6.8	

Depth (cm)	Extractable Bases me/100 g: Ca	Mg	Na	K	Sum	Ext Acidity	C.F.C. Sum of Cations	C.F.C. Na OAc	Ext. Al me/100 g	Ratios to clay: C.E.C	Ext. Fe	15 bar water	Ca/Mg	Total Solu. Salts ppm	Base saturation: Sum of Cations %	Base saturation: Na OAc %
0- 13			.3	.4				32.0		.7		.3				100.0
13- 28			.4	.4				60.0		.9		.3				100.0

Depth (cm)	Electrical Conductivity mmho/cm	Water Extract From Saturated Paste — Cations me/liter: Ca	Mg	Na	K	CO_3	HCO_3	Cl	SO_4	Water at Satur %	ESP %	SAR	CSP %	Gypsum %	Ext P_2O_5 ppm	Available Nutrients mg/100 g: Ca	Mg	K
0- 13	.5										.9	.4	100.0	6.3	13.0			37.8
13- 28	.4										.7	.5	100.0	tr	24.2			37.8

Classification: Lithic Xerothent; fine, mixed, thermic.
Location: Tartous province, Syria. Approximately 30 km east of Tartous, 4 km west of Draikish, 30 m south of the road from Tartous to Draikish; approximate coordinates 34o 45' N Latitude and 36o 06' E longtitude.
Physiographic Position: Middle and upper slopes of medium height mountains, elevation about 200 m.a.s.l.
Topography: Steep topograpny with a characteristic slope of 30 percent towards southeast.
Drainage: Well drained, medium surface run-off, slow permeability.
Parent Material: Cretaceous limestone.
Sampled by: H. Yuksel, R. Rizek and S. Darwish on July 9, 1980
Soil No.: SP - 29



Hori.	Depth (cm)	Description
A11	0 - 13	Dark reddish gray (5 YR 4/2 d) dark reddish brown (5 YR 3/2 m) clay; moderate, fine, granular structure; hard (dry), firm (moist), sticky and plastic; few, fine, discontinuous, vertical, inped, irregular, closed pores; frequent, subrounded and angular gravels and stones, constituting approximately 20 percent of the horizon; few termites and insect nests; many fine to medium roots, mostly inside peds; gradual, smooth boundary; pH 7.2
A12	13 - 28	Dark reddish brown (5 YR 3/4 d to 5 YR 3/3 m) clay; moderate, fine, granular structure; hard (dry), firm (moist), sticky and plastic; few, fine, discontinuous, vertical, inped, irregular, closed pores; frequent, subrounded and angular gravels and stones of limestone, constituting approximately 20 percent of the horizon; few termites and insect nests; many, fine to medium roots, mostly inside peds; clear, broken cretaceous limestone; pH 6.8
R	28+	Cretaceous limestone.

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SOIL SERIES _____ TAXONOMY _____ SOIL No BP - 30

LOCATION _____ LAB Nos 1208 - 1224 - 1205 - 1238 - 1225

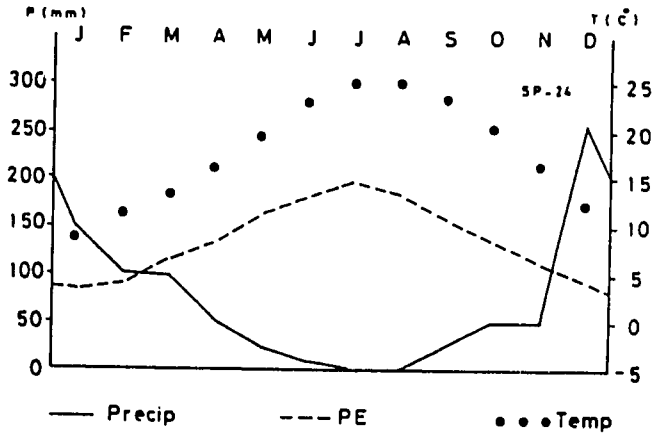
Depth (cm)	Horizon	Size Class and particle diameter (mm): Total Sand (2-0.05)	Total Silt (0.05-0.002)	Total Clay (<0.002)	Sand: Very coarse (2-1)	Sand: Coarse (1-0.5)	Sand: Medium (0.5-0.25)	Sand: Fine (0.25-0.1)	Sand: Very fine (0.1-0.05)	Silt: 0.05-0.02	Silt: 0.02-0.002	Coarse fragments: >2 % of whole soil	Coarse fragments: 2-19 % of <76 mm	Coarse fragments: 19-76 % of <76 mm	Texture class
		% of < 2 mm													
0- 18	AP	28	24	48											C
18- 32	B21	15	16	69											C
32- 43	B22	18	17	65											C
43- 73	B23	11	14	75											C
73- 95	B24	12	5	83											C

Depth (cm)	Organic Carbon %	Nitrogen %	C / N	Ext Iron as Fe %	Carbonates as $CaCO_3$ < 2 mm %	Carbonates as $CaCO_3$ < 0.002 mm %	Bulk Density 1/3 bar g/cc	Bulk Density oven-dry g/cc	COLE	Water Contents 1/3 bar %	Water Contents 15 bar %	pH Satur. paste	pH H_2O	pH KCl
0- 18	1.3				1.3	19.2				30.1	13.9		6.0	
18- 32	1.1				1.5	21.9				39.0	18.5		6.0	
32- 43	.7				1.0	19.1				37.2	17.6		6.1	
43- 73	.8				3.0	tr				41.6	19.8		6.6	
73- 95	.7				1.5	22.4				44.1	21.2		6.2	

Depth (cm)	Extractable Bases Ca (me / 100 g)	Mg	Na	K	Sum	Ext Acidity	C.E.C. Sum of Cations	C.E.C. Na OAc	Ext. Al me / 100 g	Ratios to clay C.E.C	Ext. Fe	15 bar water	Ca / Mg	Total Solu. Salts ppm	Base saturation Sum of Cations %	Base saturation Na OAc %
0- 18			.1	.3				33.0		.7		.3				100.0
18- 32			.3	.1				26.0		.4		.3				100.0
32- 43			.2	.2				4.2		.1		.3				100.0
43- 73			.3	.2				28.0		.4		.3				100.0
73- 95			.4	.2				34.0		.4		.3				100.0

Depth (cm)	Electrical Conductivity mmho / cm	Water Extract From Saturated Paste: Cations Ca (me / liter)	Mg	Na	K	CO_3	HCO_3	Cl	SO_4	Water at Satur. %	ESP %	SAR	CSP %	Gypsum %	Ext P_2O_5 ppm	Available Nutrients Ca (mg / 100 g)	Mg	K
0- 18	.5										.3	.2	100.0	7.1	13.5			28.3
18- 32	.3										1.2	.5	100.0	.4	1.7			9.4
32- 43	.3										4.8	.4	100.0	7.5	4.0			18.9
43- 73	.4										1.1	.5	100.0	tr	4.0			18.9
73- 95	.4										1.2	.6	100.0	5.2	1.5			18.9

Classification: Typic Haploxeralf, fine, mixed, thermic.
Location: Tartous province, Syria. Approximately 4 km southeast of Tartous, 50 m south of the road from Tartous to Safita; approximate coordinates 34o 53' N latitude and 350 54' E longtitude.
Physiographic Position: Terrace and/or slightly terraced narrow plains, elevation about 60 m.a.s.l.
Topography: Gently sloping topography with a characteristic slope of 3 percent towards west.
Drainage: Well drained, slow surface run-off, slow permeability.
Parent Material: Quaternary or more recent coluvium with inclusions of some water-worked material, derived mainly from cretaceous limestone.
Sampled by: H. Yuksel, R. Rizek and S. Darwish on July 10, 1980
Soil No.: SP - 30



Hori.	Depth (cm)	Description
Ap	0 - 18	Yellowish red (5 YR 4/6 d) reddish brown (5 YR 4/4 m) gravelly clay; strong, coarse to medium, subangular blocky structure; very hard (dry), very firm (moist), sticky and plastic; many, very fine to fine, constricted, vertical, irregular, open pores; frequent, subrounded and rounded gravels constituting approximately 3C percent of the horizon; few biological activities; common, fine to medium roots, mostly inside peds; clear, smooth boundary; pH 6.0
B21	18 - 32	Reddish brown (5 YR 4/4 m) clay; strong, coarse to medium, subangular blocky structure; firm (moist), sticky and plastic; continuous, moderately thick cutanes, probably of clay minerals on horizontal and vertical ped faces and in voids; few, fine, constricted, vertical, irregular, open pores; common, fine to medium roots, mostly inside peds; diffuse, smooth boundary; pH 6.0
B22	32 - 43	Reddish brown (5 YR 4/4 m) clay; strong, medium, subangular blocky structure; firm (moist), sticky and plastic; continuous, moderately thin cutanes, probably of clay minerals, on horizontal and vertical ped faces and in voids; few, fine, constricted, vertical, irregular, open pores; few, fine and medium roots; diffuse, smooth boundary; pH 6.1
B23	43 - 73	Reddish brown (5 YR 4/4 m) clay; strong, medium, subangular blocky structure; firm (moist), sticky and plastic; continuous, moderately thin cutanes, probably of clay minerals, on horizontal and vertical ped faces and in voids; few, fine, constructed, vertical, irregular, open pores; few, fine to medium roots, mostly inside peds; diffuse, smooth boundary; pH 6.6
B24	73 - 95	Reddish brown (5 YR 4/4 m) clay; strong, medium, subangular blocky structure; firm (moist), sticky and plastic; continuous, moderately thick cutanes, probably of clay minerals, on horizontal and vertical ped faces and in voids; few, fine to medium roots, mostly inside peds; pH 6.2

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SOIL SERIES _____ TAXONOMY _____ SOIL No SP - 31

LOCATION _____ LAB Nos. 1232 - 1226 - 1222 - 1214 - 1204 - 1197

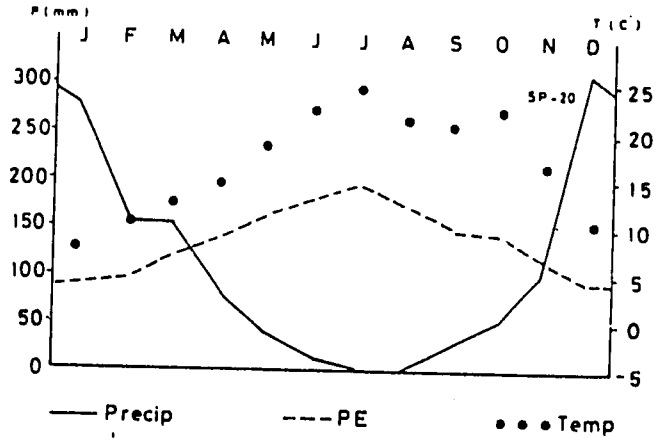
Depth (cm)	Horizon	Size Class and particle diameter (mm): Total Sand (2-0.05)	Total Silt (0.05-0.002)	Total Clay (<0.002)	Sand: Very coarse (2-1)	Sand: Coarse (1-0.5)	Sand: Medium (0.5-0.25)	Sand: Fine (0.25-0.1)	Sand: Very fine (0.1-0.05)	Silt: 0.05-0.02	Silt: 0.02-0.002	Coarse fragments >2 % of whole soil	Coarse fragments 2-19 % of <76 mm	Coarse fragments 19-76 % of <76 mm	Texture class
		% of < 2 mm													
0- 15	A1	32	38	33											CL
15- 45	B21	25	35	37											CL
45- 67	B22	18	38	47											C
67- 81	B3	28	34	38											CL
81- 96	C1	26	38	36											CL
96-102	C2	36	39	25											L

Depth (cm)	Organic Carbon %	Nitrogen %	C / N	Ext. Iron as Fe %	Carbonate as $CaCO_3$ <2 mm %	Carbonate as $CaCO_3$ <0.002 mm %	Bulk Density 1/3 bar g/cc	Bulk Density ovendry g/cc	COLE	Water Contents 1/3 bar %	Water Contents 15 bar %	pH Satur paste	pH H_2O	pH KCl
0- 15	1.2				2.0	tr				25.1	11.2		6.5	
15- 45	1.0				2.5	tr				26.4	11.9		6.3	
45- 67	.9				1.0	23.6				31.7	14.7		6.3	
67- 81	.6				.5	28.5				26.8	12.1		6.2	
81- 96	.4				2.0	26.7				26.4	11.9		6.4	
96-102	.6				1.2	24.9				21.3	9.3		6.3	

Depth (cm)	Extractable Bases Ca (me/100 g)	Mg	Na	K	Sum	Ext Acidity	C.E.C. Sum of Cations	C.E.C. Na OAc	Ext. Al me/100 g	Ratios to clay C.E.C	Ext. Fe	15 bar water	Ca/Mg	Total Soluble Salts ppm	Base saturation Sum of Cations %	Base saturation Na OAc %
0- 15			.3	.1				48.0		1.5		.3				100.0
15- 45			.3	.1				52.0		1.4		.3				100.0
45- 67			.3	.1				42.0		.9		.3				100.0
67- 81			.4	.1				64.0		1.7		.3				100.0
81- 96			.5	.1				70.0		1.9		.3				100.0
96-102			.3	.4				70.0		2.8		.4				100.0

Depth (cm)	Electrical Conductivity mmho/cm	Water Extract From Saturated Paste: Cations Ca (me/liter)	Mg	Na	K	CO_3	HCO_3	Cl	SO_4	Water at Satur %	ESP %	SAR	CSP %	Gypsum %	Ext P_2O_5 ppm	Available Nutrients Ca (mg/100 g)	Mg	K
0- 15	1.2										.6	.5	100.0	tr	9.7			9.4
15- 45	.4										.6	.5	100.0	tr	7.8			9.4
45- 67	.4										.7	.5	100.0	.2	10.8			9.4
67- 81	.4										.6	.6	100.0	3.3	6.0			9.4
81- 96	.5										.7	.7	100.0	2.7	6.0			9.4
96-102	.4										.4	.4	100.0	2.9	8.0			37.8

Classification: Mollic Haploxeralf, fine loamy, mixed, thermic.
Location: Tartous Province, Syria. Approximately 35 km east of Tartous, 6 km south of Safita, 20 m south of the road from Safita to Kafrun; approximate coordinates 34o 02' N latitude and 36o 09' E longtitude.
Physiographic Position: Foot slopes of medium height hills, elevation about 100 m.a.s.l.
Topography: Steeply sloping topography with a characteristic slope of 10 percent towards southeast.
Drainage: Well drained, medium surface run-off, moderately slow permeability.
Parent Material: Neocene Basalt.
Sampled by: Haluk Yuksel, R. Rizek and S. Darwish on Aug. 10, 1980
Soil No.: SP - 31



Hori.	Depth (cm)	Description
A1	0 - 15	Brown (7.5 YR 4/2 d) to dark brown (7.5 YR 3/2 m) clay loam; strong, medium to coarse, subangular blocky structure; approximately 1 cm wide craks, extending up to 60 cm; extremely hard (dry), very firm (moist), sticky and plastic; many medium continuous, vertical, irregular open pores; some termite and insect nests and worm casts; many fine to medium roots, mostly inside peds; gradual smooth boundary; pH 6.5
B21	15 - 45	Brown (7.5 YR 4/2) to dark brown (7.5 YR 3/2 m) clay loam; strong, medium to coarse, subangular blocky structure; extremely hard (dry), very firm (moist), sticky and plastic; many, medium, continuous, vertical, irregular, open pores; many fine to medium roots, mostly inside peds; gradual, smooth boundary; pH 6.3
B22	45 - 67	Dark brown (7.5 YR 3/2 m) clay; strong, medium, subangular blocky structure; very firm (moist), sticky and plastic; continuous, moderately thick cutanes, probably of clay minerals, mostly on horizontal ped faces, frequent, fine, continuous, vertical, irregular, open pores; many, fine to medium roots, mostly inside peds; gradual smooth boundary; pH 6.3
B3	67 - 81	Brown (7.5 YR 4/4 m) clay loam; strong, medium, subangular blocky structure; firm (moist), sticky and plastic; continuous, moderately thin cutanes, probably of clay minerals, mostly on horizontal ped faces; few, fine, continuous, vertical, irregular, open pores; many, fine roots, mostly inside peds; clear, smooth boundary, pH 6.2
C1	81 - 96	Brown (7.5 YR 4/4 m) clay loam; moderate, medium, subangular blocky structure; firm (moist), sticky and plastic; patchy thin cutanes, probably of clay minerals, mostly on horizontal ped faces; few, very fine, continuous, vertical, irregular, open pores; common, fine roots, mostly inside peds; gradual, smooth boundary; pH 6.4
C2	96 - 102	Brown (7.5 YR 4/4 m) loam; massive; very friable, slightly sticky and slightly plastic; patchy thin cutanes, probably of clay minerals, mostly on horizontal ped faces; few, very fine, continuous, vertical, irregular, open pores; few, small, soft, spheric manganese concreations of concentric structure; no visible roots; gradual, smooth boundary, pH 6.3
R	102+	Saprolite of Neocene Basalt.

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SOIL SERIES _____ TAXONOMY _____ SOIL No SP - 32

LOCATION _____ LAB Nos. 1248 - 1215 - 1211 - 1230 - 1229 - 1243

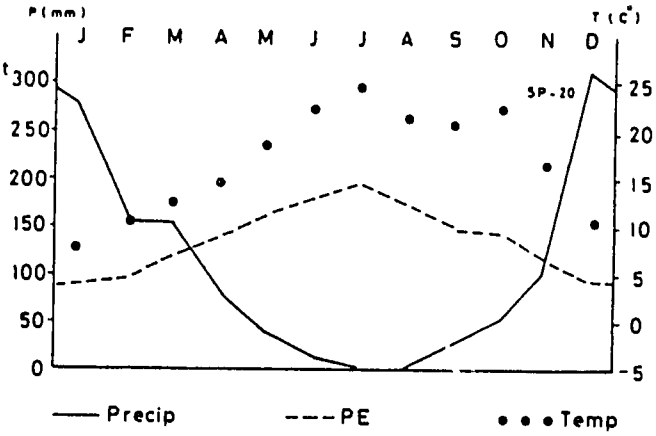
Depth (cm)	Horizon	Size Class and particle diameter (mm) — Total: Sand (2-0.05)	Silt (0.05-0.002)	Clay (<0.002)	Sand: Very coarse (2-1)	Coarse (1-0.5)	Medium (0.5-0.25)	Fine (0.25-0.1)	Very fine (0.1-0.05)	Silt: 0.05-0.02	0.02-0.002	Coarse fragments: >2 mm % of whole soil	2-19 mm	19-76 mm	Texture class
		% of < 2 mm											% of <76 mm		
0- 16	A11	38	44	18											C
16- 25	A12	33	42	25											C
25- 38	B21	40	36	24											C
38- 60	B22	38	29	33											CL
60- 75	B3	38	31	31											CL
75- 83	C	18	17	65											C

Depth (cm)	Organic Carbon %	Nitrogen %	C / N	Ext. Iron as Fe %	Carbonate as CaCO3 <2 mm %	<0.002 mm %	Bulk Density 1/3 bar g/cc	ovendry g/cc	COLE	Water Contents 1/3 bar %	15 bar %	pH Satur paste	H_2O	KCl
0- 16	2.9				1.5	20.0				18.7	7.9		6.6	
16- 25	2.7				1.3	22.1				21.7	9.5		6.1	
25- 38	1.8				1.3	22.4				20.4	8.8		6.2	
38- 60	.7				2.0	tr				23.7	10.5		6.2	
60- 75	.5				2.5	tr				23.0	10.1		6.0	
75- 83	.5				1.5	29.7				37.2	17.6		6.4	

Depth (cm)	Extractable Bases: Ca	Mg	Na	K	Sum (me / 100 g)	Ext Acidity	C.E.C.: Sum of Cations	Na OAc	Ext. Al me / 100 g	Ratios to clay: C.E.C	Ext. Fe	15 bar water	Ca/Mg	Total Solu. Salts ppm	Base saturation: Sum of Cations %	Na OAc
0- 16			.4	.5				32.0		1.8		.4				100.0
16- 25			.4	.2				54.0		2.2		.4				100.0
25- 38			.4	.1				54.0		2.3		.4				100.0
38- 60			.5	.1				48.0		1.5		.3				100.0
60- 75			.7	.1				64.0		2.1		.3				100.0
75- 83			.8	.5				44.0		.7		.3				100.0

Depth (cm)	Electrical Conductivity mmho / cm	Water Extract From Saturated Paste — Cations: Ca	Mg	Na	K	CO_3	HCO_3	Cl	SO_4 (me / liter)	Water at Satur %	ESP %	SAR	CSP %	Gypsum %	Ext P_2O_5 ppm	Available Nutrients: Ca	Mg	K (mg / 100 g)
0- 16	.5										1.3	.5	100.0	9.6	24.4			47.2
16- 25	.7										.7	.6	100.0	18.2	12.0			18.9
25- 38	.5										.7	.6	100.0	15.7	12.0			9.4
38- 60	.4										1.0	.7	100.0	tr	4.0			9.4
60- 75	.6										1.1	.8	100.0	tr	7.0			9.4
75- 83	.3										1.8	.8	100.0	12.8	7.0			47.2

Classification: Typic Haploxeroll; fine loamy over clayey, mixed, thermic.
Location: Tartous province, Syria. Approximately 40 km east of Tartous, 8 km southeast of Safita, 1 km northeast of the town of Badada, 25 m south of the road from Badada to Kafrun; approximate coordinates 34o 48' N latitude and 36o 10' E longtitude.
Physiographic Position: Middle and lower slopes of high hills, elevation about 110 m.a.s.l.
Topography: Moderately steep topography with a characteristic slope of 25 percent towards west.
Drainage: Well drained, medium surface run-off, moderately slow permeability.
Parent Material: Neocene Basalt.
Sampled by: H. Yuksel, R. Rizek and S. Darwish on Aug. 12, 1980
Soil No.: SP - 32



Hori.	Depth (cm)	Description
A11	0 - 16	Reddish brown (5 YR 4/3 d) to dark reddish brown (5 YR 3/2 m) loam; strong, medium, subangular blocky structure; hard (dry), friable (moist), slightly sticky and slightly plastic; many, fine, continuous, vertical, irregular, open pores; few, subrounded gravel, constituting approximately 5 percent of the horizon; some termite and insect nests; many fine to medium roots, mostly inside and few between peds; clear, smooth boundary; pH 6.6
A12	16 - 25	Brown (7.5 YR 4/4 d) to dark brown (7.5 YR 3/2 m) loam; strong, medium, subangular blocky structure; hard (dry), friable (moist), slightly sticky and slightly plastic; many, fine, continuous, vertical, irregular, open pores; few subrounded gravels, constituting approximately 5 percent of the horizon; some, insect nests; many fine to medium and few coarse roots, mostly inside peds; diffuse, wavy boundary; pH 6.1
B21	25 - 38	Dark brown (10 YR 3/3 d) to very dark gray (10 YR 3/1 m) loam; strong, medium to coarse, subangular blocky structure; hard (dry), firm (moist), slightly sticky and slightly plastic; many, fine, continuous, vertical, irregular, open pores; few, subrounded coarse fragments, ranging from gravels to boulders, constituting approximately 10 percent of the horizon; many fine to medium roots, mostly inside peds; diffuse, wavy boundary; pH 6.2
B22	38 - 60	Dark yellowish brown (10 YR 4/4 d) to dark brown (10 YR 3/4 m) clay loam; strong, medium to coarse, subangular blocky structure; hard (dry), firm (moist), sticky and plastic; frequent, fine, continuous, vertical, irregular, open pores; few, subrounded stones, constituting approximately 10 percent of the horizon; common, medium roots, mostly inside peds; diffuse, wavy boundary; pH 6.2
B3	60 - 75	Yellowish brown (10 YR 5/6 d) to dark yellowish brown (10 YR 4/4 m) clay loam; moderate, medium, subangular blocky structure; extremely hard (dry), firm (moist), sticky and plastic; few, fine, continuous, vertical, irregular, open pores; few, fine to medium roots, inside and between peds; diffuse; wavy boundary; pH 6.0
C	75 - 83	Yellowish brown (10 YR 5/4 d) to dark yellowish brown (10 YR 4/4 m) clay; moderate, coarse subangular blocky structure; extremely hard (dry), firm (moist), sticky and plastic; few, very fine to fine, continuous, vertical, irregular, open pores; few, medium to coarse roots; diffuse, wavy boundary; pH 6.4
R	83+	Neocene Basalt.

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SOIL SERIES _____ TAXONOMY _____ SOIL. No SP - 33

LOCATION _____ LAB Nos. 1251 - 1203 - 1239 - 1240 - 1212

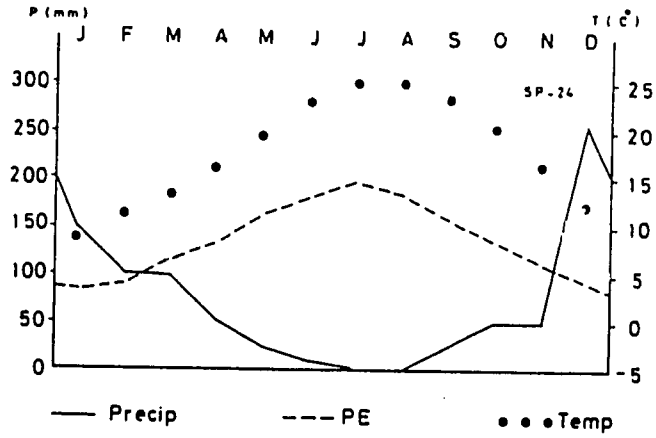
Depth (cm)	Horizon	Size Class and particle diameter (mm) — Total: Sand (2-0.05)	Silt (0.05-0.002)	Clay (<0.002)	Sand: Very coarse (2-1)	Coarse (1-0.5)	Medium (0.5-0.25)	Fine (0.25-0.1)	Very fine (0.1-0.05)	Silt: 0.05-0.02	0.02-0.002	Coarse fragments: >2 % of whole soil	2-19 % of <76 mm	19-76 % of <76 mm	Texture class
		% of < 2 mm													
0- 14	A1	8	53	39											SCL
14- 36	B21	26	36	39											CL
36- 47	B22	19	26	55											C
47- 74	C1	15	24	61											C
74-105	C2	12	24	64											C

Depth (cm)	Organic Carbon %	Nitrogen %	C / N	Ext Iron as Fe %	Carbonate as Ca Co 3 <2 mm %	<0.002 mm %	Bulk Density 1/3 bar g/cc	oven dry g/cc	COLE	Water Contents 1/3 bar %	15 bar %	pH Satur paste	H_2O	KCl
0- 14	1.4				3.5					30.0	13.8		7.6	
14- 36	.8				3.8					27.6	12.5		7.1	
36- 47	1.3				9.5					33.8	15.8		7.4	
47- 74	1.1				9.0					36.3	17.1		7.6	
74-105	.6				8.0					37.8	17.9		7.4	

Depth (cm)	Extractable Bases me / 100 g: Ca	Mg	Na	K	Sum	Ext Acidity	C. E. C. Sum of Cations	Na OAc	Ext Al me / 100 g	Ratios to clay: C. E. C	Ext. Fe	15 bar water	Ca/Mg	Total Solu. Salts ppm	Base saturation % Sum of Cations	Na OAc
0- 14			7.5	.5				32.0		.8		.4				100.0
14- 36			5.0	.3				64.0		1.6		.3				100.0
36- 47			6.0	1.0				32.0		.6		.3				100.0
47- 74			7.0	1.3				32.0		.5		.3				100.0
74-105			8.0	1.4				51.0		.8		.3				100.0

Depth (cm)	Electrical Conductivity mmho / cm	Water Extract From Saturated Paste — Cations me / liter: Ca	Mg	Na	K	CO_3	HCO_3	Cl	SO_4	Water at Satur %	ESP %	SAR	CSP %	Gypsum %	Ext P_2O_5 ppm	Available Nutrients mg / 100 g: Ca	Mg	K
0- 14	2.0										23.4	2.7	100.0		38.0			47.2
14- 36	17.5										7.8	2.2	100.0		13.0			28.3
36- 47	25.0										18.8	2.4	100.0		22.0			94.4
47- 74	23.0										21.9	2.5	100.0		28.0			>100
74-105	27.0										15.7	2.7	100.0		26.0			>100

Classification: Typic Matrixeralf; fine, mixed, thermic.
Location: Tartous province, Syria. Approximately 4.5 km southeast of Hamedya, 1.2 km south of Abrash river, 1 km east of the road from Tartous to Lebanon; approximate coordinates 34o 41' N latitude and 35o 58' E longtitude.
Physiographic Position: Flood plains; elevation about 10 m.a.s.l.
Topography: Level topography with a characteristic slope of 1 percent.
Drainage: Poorly drained, very slow surface run-off, slow permeability.
Parent Material: Alluvial deposit of Quaternary or more recent era, derived mainly from Neocene and/or cretaceous limestone and Neocene Basalt.
Sampled by: H. Yuksel, R. Rizek and S. Darwish on July 13, 1980
Soil No.: SP - 33



Hori.	Depth (cm)	Description
A1	0 - 14	Dark brown (10 YR 4/3 d) to very dark grayish brown (10 YR 3/2 m) silty clay loam; moderate, coarse, subangular blocky structure, breaking to moderate, fine, granular structure; approximately 1 cm wide craks extending up to 40 cm; hard (dry), friable (moist), sticky and slightly plastic; patchy thin cutanes, probably of clay minerals on horizontal and vertical ped faces; frequent, fine to medium, continuous, random, irregular, open pores; few termite and insect nests; many, very fine to fine and few medium roots; abrupt, smooth boundary; pH 7.6
B21	14 - 36	Very dark grayish brown (10 YR 3/2 m) clay loam; weak coarse, columnar structure breaking to strong, coarse, subangular blocky structure; extremely hard (dry), very firm (moist), sticky and plastic; continuous, moderately thick cutanes, probably of clay minerals on horizontal and vertical ped faces and in voids; few, fine, continuous, random, irregular, open pores; continuous organic matter coatings on ped faces and in voids; few termite and insect nests; common, very fine and few fine roots, clear, smooth boundary; pH 7.1
B22	36 - 57	Very dark grayish brown (10 YR 3/2 m) clay; moderate, coarse, subangular blocky structure; firm (moist), sticky and plastic; continuous thin cutanes, probably of clay minerals on horizontal and vertical ped faces and in voids; few, fine, continuous, random, irregular, open pores; few, very fine roots; clear, smooth boundary; pH 7.4
C1	57 - 74	Very dark grayish brown (10 YR 3/2 m) clay; massive; firm (moist), very sticky and very plastic; patchy thin cutanes, probably of clay minerals, mostly on vertical ped faces; few, very fine, continuous, random, irregular, open pores; few, very fine roots, diffuse, smooth boundary; pH 7.6
C2	74 - 105	Very dark grayish brown (10 YR 3/2 m) clay; firm (moist), very sticky and very plastic; few, very fine roots; no visible pores; pH 7.4

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SOIL SERIES _____ TAXONOMY _____ SOIL No SP - 34

LOCATION _____ LAB Nos. 1259 - 1217 - 1237

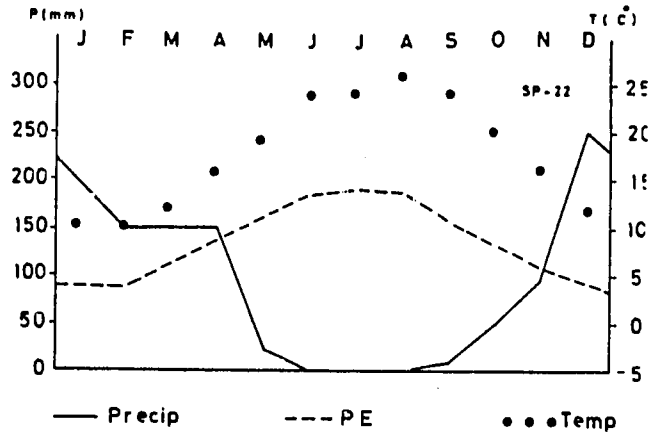
Depth (cm)	Horizon	Size Class and particle diameter (mm) — Total: Sand (2-0.05)	Total: Silt (0.05-0.002)	Total: Clay (<0.002)	Sand: Very coarse (2-1)	Sand: Coarse (1-0.5)	Sand: Medium (0.5-0.25)	Sand: Fine (0.25-0.1)	Sand: Very fine (0.1-0.05)	Silt: 0.05-0.02	Silt: 0.02-0.002	Coarse fragments: >2 % of whole soil	Coarse fragments: 2-19 % of <76 mm	Coarse fragments: 19-76 % of <76 mm	Texture class
		% of < 2 mm													
0- 13	AP	20	23	57											C
13- 36	C1	44	24	32											CL
36- 54	C2	24	24	53											C
54+	C3	nd	nd	nd											-1

Depth (cm)	Organic Carbon %	Nitrogen %	C / N	Ext. Iron as Fe %	Carbonate as $CaCO_3$ <2 mm %	Carbonate as $CaCO_3$ <0.002 mm %	Bulk Density 1/3 bar ovendry g/cc	COLE	Water Contents 1/3 bar %	Water Contents 15 bar %	pH Satur paste	pH H_2O	pH KCl
0- 13	1.7				2.0				[illegible].3	16.0		7.2	
13- 36	1.3				3.5				22.5	9.9		6.8	
36- 54	1.3				11.0				32.5	15.1		7.1	
54+													

Depth (cm)	Extractable Bases Ca	Mg	Na	K	Sum (me / 100 g)	Ext Acidity	CEC Sum of Cations	CEC Na OAc	Ext. Al me / 100 g	Ratios to clay C.E.C	Ext. Fe	15 bar water	Ca / Mg	Total Solu. Salts ppm	Base saturation Sum of Cations %	Base saturation Na OAc %
0- 13			.7	.2				38.0		.7		.3				100.0
13- 36			.7	.1				24.0		.8		.3				100.0
36- 54			.7	.1				46.0		.9		.3				100.0
54+																100.0

Depth (cm)	Electrical Conductivity mmho / cm	Water Extract From Saturated Paste — Cations Ca	Mg	Na	K	CO_3	HCO_3	Cl	SO_4 (me / liter)	Water at Satur %	ESP %	SAR	CSP %	Gypsum %	Ext P_2O_5 ppm	Available Nutrients Ca	Mg	K (mg / 100 g)
0- 13	.3										1.8	.8	100.0		54.0			18.9
13- 36	.4										2.9	.8	100.0		9.0			9.4
36- 54	.4										1.5	.8	100.0		33.0			9.4
54+													100.0					

Classification: Typic Pelloxerert; fine, mixed, thermic.
Location: Tartous province, Syria. Approximately 25 km south of Tartous, 6 km east of the town Hamediya, 25 m north of the road from Hamediya to Shambour; approximate coordinates 34o 42' N latitude and 36o 01' E longtitude.
Physiographic Position: Gently undulating to level plains, elevation about 30 m.a.s.l.
Topography: Level topography with a characteristic slope of 1 percent.
Drainage: Moderately well drained, very slow surface run-off, slow permeability.
Parent Material: Aluvial and aluvial fan deposits of Quaternary or more recent era, derived mainly from Neocene Basalts and/or limestones.
Sampled by: H. Yuksel, R. Rizek and S. Darwish on July 13, 1980
Soil No.: SP - 34



Hori.	Depth	Description
Ap	0 - 13	Very dark gray (10 YR 3/1 d) to black clay; strong, medium, subangular blocky structure; approximately 3 cm wide craks extending up to 50 cm; extremely hard (dry), extremely firm (moist), very sticky and very plastic; few slickensides and pressure faces; few, very fine to fine, continuous, random, irregular, open pores; few, rounded stones; common, very fine to medium roots, mostly between peds; clear smooth boundary; pH 7.2
C1	13 - 36	Very dark brown (10 YR 3/1 d) to black (10 YR 2/1 m) clay; strong, very coarse subangular blocky structure; extremely firm (moist), sticky and plastic; frequent slickensides and pressure faces; few, very fine to fine, continuous, random, irregular, open pores; few, subrounded stones constituting approximately 15 percent of the horizon; common, very fine to fine roots; gradual smooth boundary; pH 6.8
C2	36 - 54	Very dark brown (10 YR 3/1 d) to black (10 YR 2/1 m) stony clay; massive; extremely firm (moist), very sticky and very plastic; frequent slickensides and pressure faces; few, very fine to fine, continuous, random, open pores; frequent, subrounded stones and boulders, constituting approximately 30 percent of the horizon; few, very fine to fine roots; gradual, smooth boundary; pH 7.1
C3	54+	Dark brown (10 YR 3/3 m) stony clay; massive; extremely firm (moist), very sticky and very plastic; frequent slickensides and pressure faces; no visible pores; abundant, subrounded stones and boulders, constituting approximately 80 percent of the horizon; few, very fine to fine roots, mostly between peds.

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SOIL SERIES _____ TAXONOMY _____ SOIL No SP - 35

LOCATION _____ LAB Nos. 1245 - 1194 - 1218 - 1207

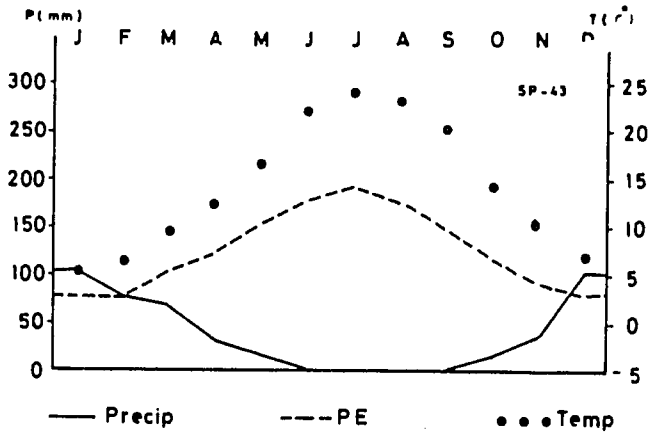
Depth (cm)	Horizon	Size Class and particle diameter (mm) — Total: Sand (2-0.05)	Silt (0.05-0.002)	Clay (<0.002)	Sand: Very coarse (2-1)	Coarse (1-0.5)	Medium (0.5-0.25)	Fine (0.25-0.1)	Very fine (0.1-0.05)	Silt: 0.01-0.002	0.02-0.002	Coarse fragments: >2 mm of whole soil	2-7.6 mm	19-76 mm	Texture class
		% of < 2 mm											% of <76 mm		
0- 18	AP	22	46	32											CL
18- 48	B21	44	30	26											L
48- 68	B22	34	46	40											CL
68+	C	16	44	40											CL

Depth (cm)	Organic Carbon %	Nitrogen %	C / N	Ext Iron as Fe %	Carbonates as $CaCO_3$ <2 mm %	<0.002 mm %	Bulk Density 1/3 bar g/cc	ovendry g/cc	COLE	Water Contents 1/3 bar %	15 bar %	pH Satur. paste	H_2O 1/	KCl 1/
0- 18	1.1				1.5	15.9				25.7	11.5		7.5	
18- 48	.7				2.0	16.4				23.9	10.6		7.3	
48- 68	1.0				1.2	17.1				30.0	13.8		6.8	
68+	1.1				1.2	17.0				29.2	13.4		7.2	

Depth (cm)	Extractable Bases Ca	Mg	Na	K	Sum (me / 100 g)	Ext Acidity	C.E.C. Sum of Cations	Na OAc	Ext. Al me / 100 g	Ratios to clay C.E.C	Ext. Fe	15 bar water	Ca/Mg	Total Solu. Salts ppm	Base saturation Sum of Cations %	Na OAc
0- 18			.7	.1				28.0		.9		.4				100.0
18- 48			.4	.1				48.0		1.8		.4				100.0
48- 68			.5	.1				44.0		1.1		.3				100.0
68+			.6	.1				44.0		1.1		.3				100.0

Depth (cm)	Electrical Conductivity mmho / cm	Water Extract From Saturated Paste — Cations: Ca	Mg	Na	K	Anions: CO_3	HCO_3	Cl	SO_4 (me / liter)	Water at Satur %	ESP %	SAR	CSP %	Gypsum %	Ext P_2O_5 ppm	Available Nutrients Ca	Mg (mg / 100 g)	K
0- 18	.4										2.5	.8	100.0	9.5	88.2			9.4
18- 48	.5										.8	.6	100.0	21.4	59.0			9.4
48- 68	.4										1.1	.7	100.0	20.8	65.0			9.4
68+	.5										1.4	.7	100.0	21.4	85.0			

Classification: Aquic Haploxeroll; fine loamy, mixed, thermic.
Location: Homs province, Syria. Approximately 35 km west of Homs, 18 km northwest of Qattina lake, 6 km northeast of Talkalakh, 300 m south of the pipe line; approximate coordinates 34o 43' N Latitude and 36o 19' E longtitude.
Physiographic Position: Terrace and/or level flood plains, elevation about 26 m.a.s.l.
Topography: Level topography with a characteristic slope of 1 percent.
Drainage: Imperfectly drained, very slow surface run-off, slow permeability.
Parent Material: Alluvial deposits of Quaternary to more recent era, derived mainly from Neocene Basalt and cretaceous limestone.
Sampled by: H. Yuksel and R. Rizek on July 16, 1980
Soil No.: SP - 35



Hori.	Depth (cm)	Description
Ap	0 - 18	Dark brown (7.5 YR 3/2 m) clay loam; moderate, medium, subangular blocky structure; friable (moist), slightly sticky and slightly plastic; frequent, fine to medium, continuous, random, irregular, open pores; few termite and insect nests; common, very fine to fine and few medium roots; clear, smooth boundary; pH 7.5
B 21	18 - 48	Dark brown (7.5 YR 3/2 m) loam; weak, medium, subangular blocky structure; friable (moist), slightly sticky and slightly plastic; frequent, medium, continuous, irregular, open pores; few termite and insect nests; common, fine to medium roots; diffuse, smooth boundary; pH 7.3
B22	48 - 68	Dark brown (7.5 YR 3/2 m) clay loam to clay; massive; firm (moist), sticky and plastic; no visible pores; no visible roots; water table found at 75 cm raised to 50 cm; diffuse, smooth boundary; pH 6.8
C	68+	Dark brown (7.5 YR 3/2 m) clay loam to clay; massive; firm (moist), sticky and plastic; no visible pores; no visible roots; lower part of the horizon saturated with ground water; pH 7.2

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SOIL SERIES _____ TAXONOMY _____ SOIL No SP - 36

LOCATION _____ LAB Nos. 1213 - 1216

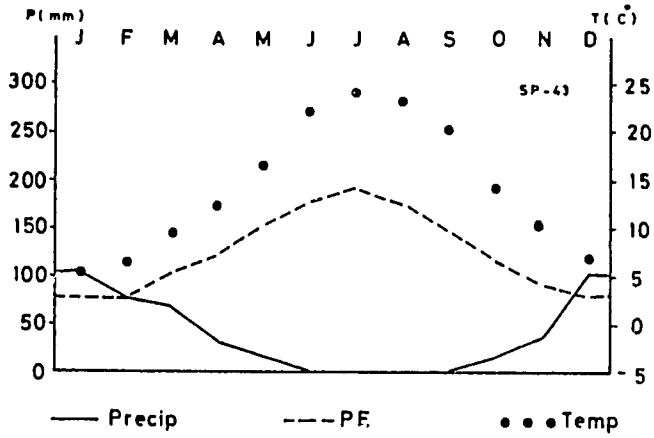
Depth (cm)	Horizon	Size Class and particle diameter (mm)																	
		Total			Sand					Silt					Coarse fragments				
		Sand (2-0.05)	Silt (0.05-0.002)	Clay (<0.002)	Very coarse (2-1)	Coarse (1-0.5)	Medium (0.5-0.25)	Fine (0.25-0.1)	Very fine (0.1-0.05)	0.05-0.02	0.02-0.002				>2 % of whole soil	2-19 mm	19-76 mm	Texture class
		% of < 2 mm														% of <76 mm			
0- 7	A1	29	33	38															CL
7- 28	B2	32	31	37															CL

Depth (cm)	Organic Carbon %	Nitrogen %	C / N	Ext Iron as Fe %	Carbonate as $CaCO_3$		Bulk Density			COLE	Water Contents				pH		
					< 2 mm	< 0.002 mm	1/3 bar	ovendry			1/3 bar	15 bar			Satur. paste	H_2O	KCl
					%		g / cc				%						
0- 7	1.9				1.2	19.6					26.7	12.0				6.9	
7- 28	1.7				1.2	23.1					25.9	11.6				6.9	

Depth (cm)	Extractable Bases					Ext Acidity	C. E. C.			Ext. Al me / 100 g	Ratios to clay				Total Solu. Salts ppm		Base saturation	
	Ca	Mg	Na	K	Sum		Sum of Cations	Na OAc			C. E. C	Ext. Fe	15 bar water	Ca / Mg			Sum of Cations	NaOAc
	me / 100 g																%	
0- 7			.3	.2				38.0			1.0		.3					100.0
7- 28			.3	.1				56.0			1.5		.3					100.0

Depth (cm)	Electrical Conductivity mmho / cm	Water Extract From Saturated Paste								Water at Satur %	ESP %	SAR	CSP %	Gypsum %	Ext P_2O_5 ppm	Available Nutrients		
		Cations																
		Ca	Mg	Na	K	CO_3	HCO_3	Cl	SO_4							Ca	Mg	K
		me / liter														mg / 100 g		
0- 7	.7										.8	.5	100.0	14.2	14.0			18.9
7- 28	1.4										.5	.5	100.0	21.0	4.7			9.4

Classification: Lithic Vertic Xerochrept; fine loamy, mixed, thermic.
Location: Homs province, Syria. Approximately 30 km west of Homs, 13 km northwest of Qatina lake, 3 km north of the road from Homs to Tripoli; approximate coordinates 34o 42' N latitude and 36o 23' E longtitude.
Physiographic Position: Wide crests and upper slopes of low hills; elevation about 320 m.a.s.l.
Topography: Steep topography with a characteristic slope of 45 percent slope towards south.
Drainage: Well drained, rapid surface run-off, moderately slow permeability.
Parent material: Pliocene Basalt.
Sampled by: H. Yuksel and R. Rizek on July 17, 1980
Soil No.: SP - 36



Hori.	Depth(cm)	Description
A1	0 - 7	Brown (7.5 YR 4/4 d) to dark brown (7.5 YR 3/2 m) gravelly clay loam; moderate, medium subangular blocky structure breaking to moderate, medium granular structure; approximately 1 cm wide craks extending up to 28 cm; hard (dry), firm (moist), sticky and plastic; few, fine, continuous, irregular, open pores; frequent, subrounded gravel and stones, contituting approximately 20 percent of the horizon; many, fine to medium roots, mostly between peds; clear, smooth boundary; pH 6.9
B2	7 - 28	Brown (7.5 YR 4/4 d) to dark brown (7.5 YR 3/2 m) gravelly clay loam; strong, medium, subangular blocky structure; hard (dry), firm (moist), sticky and plastic; few, fine, continuous, irregular, open pores; frequent, subrounded gravels and stones, constituting approximately 30 percent of the horizon; many, fine to medium roots, mostly inside peds; clear, broken boundary to the bedrock; pH 6.9
R	28+	Pliocene Basalt.

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SOIL SERIES _____ TAXONOMY _____ SOIL. No. SP - 37

LOCATION _____ LAB Nos. 1210 - 1231 - 1209 - 1236 - 0

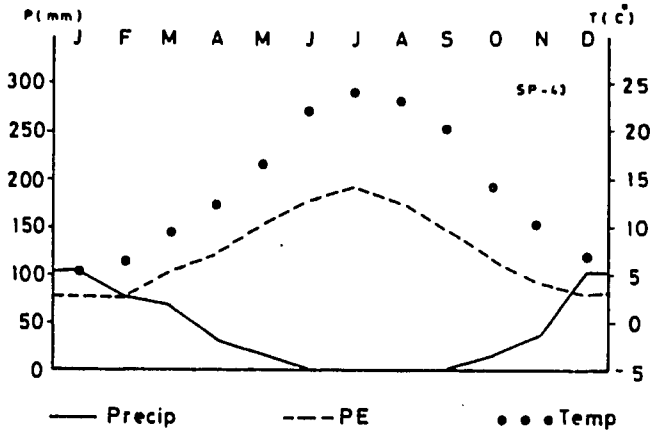
Depth (cm)	Horizon	Size Class and particle diameter (mm) — Total: Sand (2-0.05)	Total: Silt (0.05-0.002)	Total: Clay (<0.002)	Sand: Very coarse (2-1)	Sand: Coarse (1-0.5)	Sand: Medium (0.5-0.25)	Sand: Fine (0.25-0.1)	Sand: Very fine (0.1-0.05)	Silt: 0.05-0.02	Silt: 0.02-0.002				Coarse fragments: >2 % of whole soil	Coarse fragments: 2-19 % of <76 mm	Coarse fragments: 19-76 % of <76 mm	Texture class
		% of < 2 mm																
0- 8	A11	30	28	42														C
8- 16	A12	24	21	55														C
16- 38	B2	20	18	62														C
38- 60	B3	17	18	65														C
60-100	C	nd	nd	nd														

Depth (cm)	Organic Carbon %	Nitrogen %	C / N	Ext Iron as Fe %	Carbonates as Ca Co 3 <2 mm %	Carbonates as Ca Co 3 <0.002 mm %	Bulk Density 1/3 bar g/cc	Bulk Density ovendry g/cc	COLE	Water Contents 1/3 bar %	Water Contents 15 bar %			pH Satur paste	pH K_2O	pH K Cl
0- 8	1.9				28.5					27.8	12.7				7.1	
8- 16	1.5				29.5					33.0	15.4				7.4	
16- 38	1.1				13.0					35.9	16.9				7.1	
38- 60	.9				5.0					37.4	17.7				7.2	
60-100																

Depth (cm)	Extractable Bases Ca	Mg	Na	K	Sum (me / 100 g)	Ext Acidity	C. E. C. Sum of Cations	C. E. C. Na OAc		Ext. Al me / 100 g	Ratios to clay C. E. C	Ext. Fe	15 bar water	Ca / Mg	Total Solu. Salts ppm		Base saturation Sum of Cations %	Base saturation Na OAc %
0- 8			.3	.6				47.0			1.1		.3					100.0
8- 16			.3	.5				48.0			.9		.3					100.0
16- 38			.2	.2				66.0			1.1		.3					100.0
38- 60			.7	.4				64.0			1.0		.3					100.0
60-100																		100.0

Depth (cm)	Electrical Conductivity mmho / cm	Water Extract From Saturated Paste — Cations Ca	Mg	Na	K	CO 3	HCO 3	Cl	SO 4	Water at Satur %	ESP %	SAR	CSP %	Gypsum %	Ext P_2O_5 ppm	Available Nutrients Ca	Mg	K
		me / liter														mg / 100 g		
0- 8	.5										.6	.4	100.0	24.8				36.6
8- 16	.3										.6	.4	100.0	27.0				47.2
16- 38	.5										.3	.4	100.0	14.0				18.9
38- 60	.4										1.1	.7	100.0	2.5				37.8
60-100													100.0					

Classification: Typic Xerochrept
Location: Homs province, Syria. Approximately 4 km west of Homs, 500 m southeast of Orantes river, 300 m north of the road from Homs to Tartous; approximate coordinates 34o 43' N Latitude and 36o 39' E longtitude.
Physiographic Position: Gently undulating to level plains, elevation about 480 m.a.s.l.
Topography: Level topography with a characteristic slope of 1 percent.
Drainage: Well drained, slow surface run-off, slow permeability.
Parent material: Alluvium of Quaternary or more recent era, derived mainly from Pliocene Basalt.
Sampled by: H. Yuksel and R. Rizek on July 17, 1980
Soil No.: SP - 37



Hori.	Depth (cm)	Description
A11	0 - 8	Reddish brown (5 YR 4/4 d to 5 YR 4/3 m) clay; moderate, medium, subangular blocky structure; hard (dry), firm (moist), sticky and plastic; few, very fine to fine, continuous, vertical, irregular, open pores; few, subrounded gravels, constituting approximately 5 percent of the horizon; some insect nests; common, very fine to fine roots, mostly inside peds; clear, smooth boundary; pH 7.1
A12	8 - 16	Yellowish red (5 YR 4/6 d) to reddish brown (5 YR 4/3 m) clay; moderate, medium, subangular blocky structure; hard (dry), firm (moist), sticky and plastic; very fine to fine, continuous, vertical, irregular, open pores; few, subrounded gravels, constituting approximately 2 percent of the horizon; few insect nests; few, very fine to fine roots, mostly inside peds; clear, smooth boundary; pH 7.4
B2	16 - 38	Reddish brown (5 YR 4/4 m) clay; moderate, medium, subangular blocky structure; firm (moist), sticky and plastic; continuous, moderately thick cutanes, probably of clay minerals on horizontal and vertical ped faces; few, fine, continuous, irregular, open pores; few, very fine roots, mostly inside peds; clear, smooth boundary; pH 7.1
B3	38 - 60	Yellowish red (5 YR 4/6 m) clay; weak to moderate, medium, subangular blocky structure; firm (moist), very sticky and very plastic; continuous, moderately thick cutanes, probably of clay minerals on horizontal and vertical ped faces; few, very fine roots, mostly between peds; clear, smooth boundary; pH 7.2
C	60+	Yellowish red (5 YR 4/6 m) clay; massive; firm (moist), very sticky and very plastic; continuous, moderately thick to thick cutanes, probably of clay minerals on horizontal and vertical ped faces; no visible pores; no visible roots.

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SOIL SERIES _____ TAXONOMY _____ SOIL No SP - 3B

LOCATION _____ LAB Nos. 1234 - 1201 - 1199

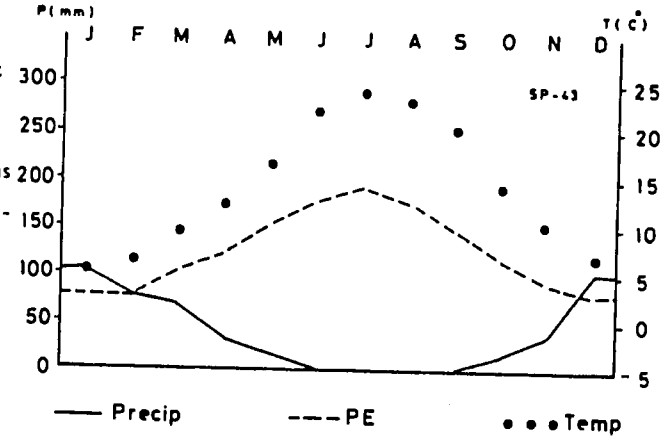
Depth (cm)	Horizon	Size Class and particle diameter (mm) — Total: Sand (2-0.05)	Total: Silt (0.05-0.002)	Total: Clay (<0.002)	Sand: Very coarse (2-1)	Sand: Coarse (1-0.5)	Sand: Medium (0.5-0.25)	Sand: Fine (0.25-0.1)	Sand: Very fine (0.1-0.05)	Silt: 0.05-0.02	Silt: 0.02-0.002	Coarse fragments: >2 % of whole soil	Coarse fragments: 2-19 % of <76 mm	Coarse fragments: 19-76 % of <76 mm	Texture class
		% of < 2 mm													
0- 12	AP	19	20	61											C
12- 25	B21	22	23	55											C
25- 45	B22	37	27	36											CL

Depth (cm)	Organic Carbon %	Nitrogen %	C / N	Ext Iron as Fe %	Carbonate as Ca Co 3 < 2 mm %	Carbonate as Ca Co 3 < 0.002 mm %	Bulk Density 1/3 bar g/cc	Bulk Density ovendry g/cc	COLE	Water Contents 1/3 bar %	Water Contents 15 bar %	pH Satur. paste	pH H_2O	pH KCl
- 12	.8				2.0	tr				35.7	16.8		6.5	
12- 25	.6				.5	21.4				33.3	15.5		7.2	
25- 45	.7				1.0	23.5				24.8	11.1		6.6	

Depth (cm)	Extractable Bases Ca (me / 100 g)	Mg	Na	K	Sum	Ext Acidity	C. E. C Sum of Cations	C. E. C Na OAc	Ext. Al me / 100 g	Ratios to clay C. E. C	Ext. Fe	15 bar water	Ca / Mg	Total Solu. Salts ppm	Base saturation Sum of Cations %	Base saturation Na OAc %
0- 12			.8	.1				48.0		.8		.3				100.0
12- 25			.4	.1				47.0		.9		.3				100.0
25- 45			.3	.1				52.0		1.4		.3				100.0

Depth (cm)	Electrical Conductivity mmho / cm	Water Extract From Saturated Paste — Cations Ca (me / liter)	Mg	Na	K	CO_3	HCO_3	Cl	SO_4	Water at Satur %	ESP %	SAR	CSP %	Gypsum %	Ext P_2O_5 ppm	Available Nutrients Ca (mg / 100 g)	Mg	K
0- 12	1.2										1.7	.9	100.0	tr	4.0			9.4
12- 25	.4										.9	.6	100.0	17.8	8.3			9.4
25- 45	.5										.6	.5	100.0	19.2	8.6			9.4

Classification: Lithic Vertic Xerochrept; fine, mixed, thermic.
Location: Homs province, Syria. Approximately 7 km west of Homs, 2 km northwest of Orantes river, 800 m north of the road from Homs to Tartous. Approximate coordinates 34o 44' N latitude and 36o 39' E longtitude.
Physiographic Position: Gently undulating to level plains elevation about 500 m.a.s.l.
Topography: Gently sloping topography with a characteristic slope of 3 percent towards west.
Drainage: Well drained, slow surface run-off, slow permeability.
Parent Material: Pliocene Basalt.
Sampled by: H. Yuksel and R. Rizek on July 17, 1980
Soil No.: SP - 38



Hori.	Depth (cm)	Description
Ap	0 - 12	Brown (7.5 YR 4/4 d) to dark brown (7.5 YR 3/2 m) stony clay; moderate, medium to coarse, subangular blocky structure; very hard (dry), extremely firm (moist), sticky and plastic; few, very fine to fine, continuous, vertical, irregular, open pores; abundant, subrounded and angular stones, constituting approximately 40 percent of the horizon; few insect nests; common, very fine to fine roots, mostly inside peds; clear, smooth boundary; pH 6.5
B21	12 - 25	Brown (7.5 YR 4/4 d) to dark brown (7.5 YR 3/2 m) stony clay; moderate, coarse subangular blocky structure; extremely hard (dry), extremely firm (moist), very sticky and very plastic; continuous, moderately thick cutanes, probably of clay minerals, mainly on horizontal ped faces; abundant, subrounded and angular gravels and stones, constituting approximately 45 percent of the horizon; few insect nests; few, very fine to fine roots, mostly inside peds; diffuse, smooth boundary, pH 7.2
B22	25 - 45	Brown (7.5 YR 4/4 d) to dark brown (7.5 YR 3/2 m) stony clay; moderate, coarse subangular blocky structure; extremely hard (dry), firm (moist), sticky and plastic; continuous, moderately thick cutanes, probably of clay minerals, mainly on horizontal ped faces; abundant subrounded and angular stones and boulders, constituting approximately 45 percent of the horizon; few, very fine roots, mostly between peds; clear, broken boundary to the bedrock; pH 6.6
R	45+	Pliocene Basalt.

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SOIL SERIES _____ TAXONOMY _____ SOIL No SP - 39

LOCATION _____ LAB Nos 1254

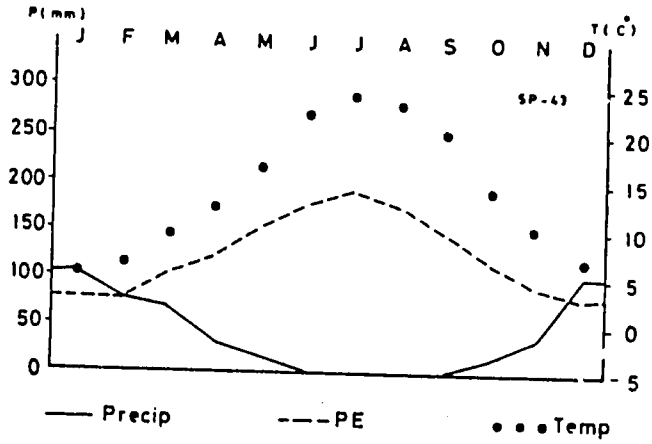
Depth (cm)	Horizon	Size Class and particle diameter (mm): Total Sand (2-0.05)	Total Silt (0.05-0.002)	Total Clay (<0.002)	Sand: Very coarse (2-1)	Sand: Coarse (1-0.5)	Sand: Medium (0.5-0.25)	Sand: Fine (0.25-0.1)	Sand: Very fine (0.1-0.05)	Silt: 0.05-0.02	Silt: 0.02-0.002				Coarse fragments: >2 % of whole soil	Coarse fragments: 2-19 % of <76 mm	Coarse fragments: 19-76 % of <76 mm	Texture class
		% of < 2 mm																
0- 15	A1	44	29	27														C

Depth (cm)	Organic Carbon %	Nitrogen %	C / N	Ext Iron as Fe %	Carbonate as $CaCO_3$ <2 mm %	Carbonate as $CaCO_3$ <0.002 mm %	Bulk Density 1/3 bar g/cc	Bulk Density ovendry g/cc		COLE	Water Contents 1/3 bar %	Water Contents 15 bar %			pH Satur paste	pH H_2O	pH KCl
0- 15	1.2				2.0						20.8	9.0				6.2	

Depth (cm)	Extractable Bases Ca	Mg	Na	K	Sum (me / 100 g)	Ext Acidity	CEC Sum of Cations	CEC Na OAc		Ext. Al me / 100 g	Ratios to clay C. E. C	Ext. Fe	15 bar water	Ca / Mg	Total Solu. Salts ppm		Base saturation Sum of Cations %	Base saturation Na OAc %
0- 15			.2	.2				16.0			.6		.3					100.0

Depth (cm)	Electrical Conductivity mmho / cm	Water Extract From Saturated Paste: Cations Ca	Mg	Na	K	CO_3	HCO_3	Cl	SO_4	Water at Satur %	ESP %	SAR	CSP %	Gypsum %	Ext P_2O_5 ppm	Available Nutrients Ca	Mg	K
		me / liter														mg / 100 g		
0- 15	.3										1.3	.4	100.0		53.2			18.9

Classification: Lithic Xerorthent
Location: Homs province, Syria. Approximately 12 km west of Homs, 6 km north of Qatinah lake, 1 km north of the road from Homs to Tartous; approximate coordinates 30o 44' N Latitude, 36o 36' E Longtitude.
Physiographic position: Gently undulating plains, elevation about 527 m.a.s.l.
Topography: Gently sloping topography with a characteristic slope of 5 percent towards west.
Drainage: Well drained, moderately slow surface run-off, slow permeability.
Parent Material: Pliocene basalt.
Sampled by: H. Yuksel, R. Rizek on July 17, 1980
Soil No.: SP - 39



Hori.	Depth (cm)	Description
A1	0 - 15	Brown (7.5 YR 4/4 d) to dark brown (7.5 YR 3/2 m) loam; weak, fine, granular structure; hard (dry), friable (moist), slightly sticky and slightly plastic; few, very fine to fine, continuous, vertical, irregular, open pores; frequent subrounded to angular gravels and stones, constituting approximately 25 percent of the horizon; few termite and insect nests; common, very fine roots, mostly inside peds; clear, broken boundary to the bedrock; pH 6.2
R	15+	Neocene Basalt.

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SOIL SERIES _____ TAXONOMY _____ SOIL No SF - 40

LOCATION _____ LAB Nos. 1555 - 1556 - 1557

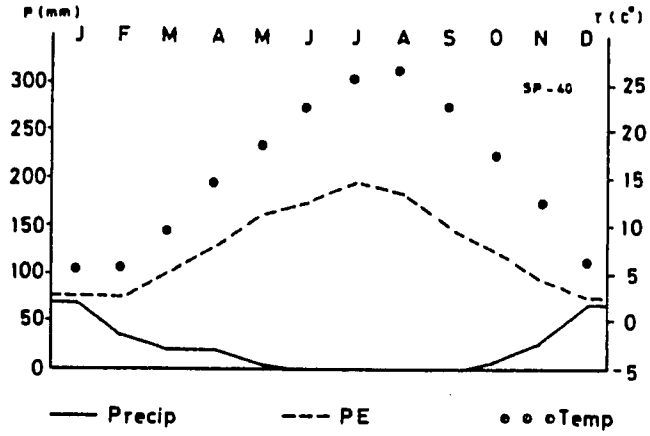
Depth (cm)	Horizon	Total Sand (2-0.05)	Total Silt (0.05-0.002)	Total Clay (<0.002)	Sand: Very coarse (2-1)	Sand: Coarse (1-0.5)	Sand: Medium (0.5-0.25)	Sand: Fine (0.25-0.1)	Sand: Very fine (0.1-0.05)	Silt 0.05-0.02	Silt 0.02-0.002				Coarse fragments >2 % of whole soil	Coarse fragments 2-19	Coarse fragments 19-76	Texture class
		% of < 2 mm														% of <76 mm		
0- 3	A11	39	42	19														C
3- 12	A12	36	28	36														CL
12- 33	C1	39	30	31														L
33- 42	C2	27	33	40														CL

Depth (cm)	Organic Carbon %	Nitrogen %	C / N	Ext Iron as Fe %	Carbonate as Ca Co 3 <2 mm %	Carbonate as Ca Co 3 <0.002 mm %	Bulk Density 1/3 bar g/cc	Bulk Density ovendry g/cc	COLE	Water Contents 1/3 bar %	Water Contents 15 bar %				pH Satur paste	pH H_2O	pH KCl
0- 3	2.0				63.0					28.9	8.0					7.7	
3- 12	1.4				65.0					25.0	11.2					7.6	
12- 33	1.5				63.0					22.9	10.1					7.0	
33- 42	1.6				69.0					27.6	12.5					7.7	

Depth (cm)	Extractable Bases Ca	Mg	Na	K	Sum (me / 100 g)	Ext Acidity	C E C Sum of Cations	C E C Na OAc	Ext Al me / 100 g	Ratios to clay C. E. C	Ratios to clay Ext. Fe	Ratios to clay 15 bar water	Ca/ Mg	Total Solu. Salts ppm		Base saturation Sum of Cations	Base saturation NaOAc
0- 3			.1	.8				28.0		1.5		.4					100.0
3- 12			.1	.2				26.0		.7		.3					100.0
12- 33			.1	.5				38.0		1.2		.3					100.0
33- 42			.2	.1				22.0		.6		.3					100.0

Depth (cm)	Electrical Conductivity mmho / cm	Water Extract From Saturated Paste: Cations Ca (me / liter)	Mg	Na	K	CO 3	HCO 3	Cl	SO 4	Water at Satur %	ESP %	SAR	CSP %	Gypsum %	Ext P_2O_5 ppm	Available Nutrients Ca (mg / 100 g)	Mg	K
0- 3	1.1										.4	.1	100.0		19.0			75.5
3- 12	tr										.4	.2	100.0		4.5			18.9
12- 33	.4										.3	.2	100.0		4.5			47.2
33- 42	.7										.9	.4	100.0		2.0			9.4

Classification: Lithic Torriorthent; fine loamy, mixed, thermic.
Location: Damascus province, Syria. Approximately 6 km northwest of Damascus, 200 m north of Doummar, 100 m north of the road from Damascus to Beirut. Approximate coordinates 33o 33' N latitude and 36o 16' E longtitude.
Physiographic Position: Upper slopes of high mountains, elevation about 1085 m.a.s.l.
Topography: Mountainous topography with a slope of 100 percent towards south.
Drainage: Well drained, very rapid surface run-off, moderately rapid permeability.
Vegetation: Barren lands.
Parent Material: Neogene limestone.
Sampled by: H. Yuksel and R. Rizek on July 20, 1980
Soil No.: SP - 40



Hori.	Depth (cm)	Description
A11	0 - 3	Yellowish brown (10 YR 5/4 m) to brownish yellow (10 YR 6/6 d) loam; weak, fine, subangular blocky structure; slightly hard (dry), friable (moist), slightly sticky and non plastic; many, fine, continuous, vertical, inped, irregular, simple, open pores; frequent subrounded gravel constituting approximately 35 percent of the horizon; few, very fine to fine roots, mostly between peds; abrupt, smooth boundary; pH 7.7
A12	3 - 12	Yellowish brown (10 YR 5/8 m) to strong brown (7.5 YR 5/8 d) clay loam; moderate, medium, subangular blocky structure; hard (dry), friable (moist), sticky and plastic; many, fine to medium, continuous, vertical, inped, irregular, simple, open pores; frequent subrounded gravels, constituting approximately 20 percent of the horizon; few very fine roots between peds; clear, smooth boundary; pH 7.6
C1	12 - 33	Yellowish brown (10 YR 5/6 m) to reddish yellow (7.5 YR 6/6) loam; weak medium subangular blocky structure; hard (dry), friable (moist), sticky and plastic; frequent, fine to medium, continuous, vertical, inped, irregular, simple, open pores; frequent subrounded gravels, constituting approximately 15 percent of the horizon; few, very fine to medium roots between peds; clear, smooth boundary; pH 7.0
C2	33 - 42	Yellowish brown (10 YR 5/8 m to 10 YR 5/6 d) clay loam; weak, fine, subangular blocky structure; slightly hard (dry), friable (moist), sticky and plastic; few fine, continuous, vertical, inped, irregular, simple, open pores; few very fine to medium roots between peds; pH 7.7
R	42+	Limestone bedrock

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SOIL SERIES _____ TAXONOMY _____ SOIL No SP - 41

LOCATION _____ LAB Nos. 1559

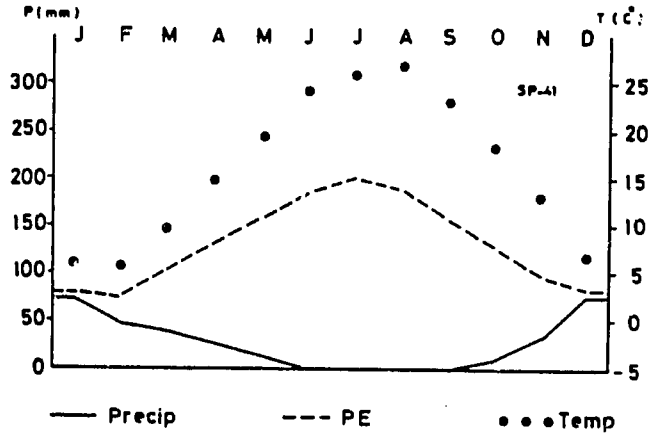
Depth (cm)	Horizon	Size Class and particle diameter (mm): Total: Sand (2-0.05)	Silt (0.05-0.002)	Clay (<0.002)	Sand: Very coarse (2-1)	Coarse (1-0.5)	Medium (0.5-0.25)	Fine (0.25-0.1)	Very fine (0.1-0.05)	Silt: 0.05-0.02	0.02-0.002				Coarse fragments: >2 % of whole soil	2-19 %	19-76 %	Texture class
		% of < 2 mm														% of <76 mm		
0- 12	A1	27	33	40														CL

Depth (cm)	Organic Carbon %	Nitrogen %	C / N	Ext Iron as Fe %	Carbonates as Ca Co 3: <2 mm %	<0.002 mm %	Bulk Density: 1/3 bar g/cc	ovendry g/cc		COLE	Water Contents: 1/3 bar %	15 bar %				pH: Satur paste	H_2O	KCl
0- 12	1.5					9.0					27.6	12.5					7.6	

Depth (cm)	Extractable Bases: Ca	Mg	Na	K	Sum (me / 100 g)	Ext Acidity	CEC: Sum of Cations	Na OAc		Ext. Al me / 100 g	Ratios to clay: C. E. C	Ext. Fe	15 bar water	Ca/ Mg	Total Solu. Salts ppm		Base saturation: Sum of Cations %	Na OAc %
0- 12			.3	1.4				46.0			1.2		.3					100.0

Depth (cm)	Electrical Conductivity mmho / cm	Water Extract From Saturated Paste: Cations: Ca	Mg	Na	K	CO 3	HCO 3	Cl	SO 4 (me / liter)	Water at Satur %	ESP %	SAR	CSP %	Gypsum %	Ext P_2O_5 ppm	Available Nutrients: Ca	Mg	K (mg / 100 g)
0- 12	.5										.7	.3	100.0		7.0			>100

Classification: Lithic Xerorthent
Location: Damascus province, Syria. Approximately 13 km northwest of Damascus city, 200 m east of the road from Damascus to Beirut; approximate coordinates 33o 35' N latitude and 36o 11' E longtitude.
Physiographic Position: Gently undulating plateaus, elevation about 1000m.a.s.l.
Topography: Moderately sloping with a characteristic slope of 6 percent towards north.
Drainage: Well drained, slow surface run-off, moderate permeability.
Parent Material: Pliocene limestone.
Sampled by: H. Yuksel and R. Rizek on Sept. 20, 1980
Soil No.: SP - 41



Hori.	Depth (cm)	Description
A1	0 - 12	Yellowish red (5 YR 5/6 d to 5 YR 5/8 m) clay; moderate, medium, subangular blocky structure; hard (dry), firm (moist), sticky and plastic; frequent, fine to medium, continuous, inped, irregular, simple, open pores; frequent, subrounded to angular gravels, constituting approximately 30 percent of the horizon; few, very fine to fine roots, mostly inside peds; abrupt wavy boundary to limestone bedrock; pH 7.6
R	12+	Pliocene limestone

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SOIL SERIES _____ TAXONOMY _____ SOIL No SP - 42

LOCATION _____ LAB Nos. 1560

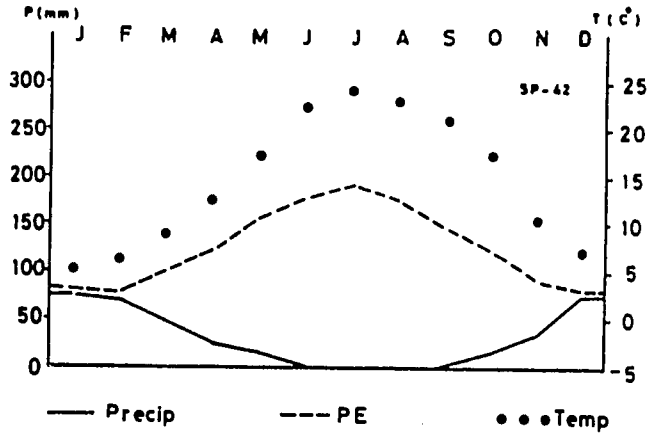
Depth (cm)	Horizon	Size Class and particle diameter (mm) — Total: Sand (2-0.05)	Total: Silt (0.05-0.002)	Total: Clay (<0.002)	Sand: Very coarse (2-1)	Sand: Coarse (1-0.5)	Sand: Medium (0.5-0.25)	Sand: Fine (0.25-0.1)	Sand: Very fine (0.1-0.05)	Silt: 0.05-0.02	Silt: 0.02-0.002				Coarse fragments: >2 % of whole soil	Coarse fragments: 2-19 % of <76 mm	Coarse fragments: 19-76 % of <76 mm	Texture class
		% of < 2 mm																
0- 12	A1	20	37	43														C

Depth (cm)	Organic Carbon %	Nitrogen %	C / N	Ext. Iron as Fe %	Carbonate as $CaCO_3$ <2 mm %	Carbonate as $CaCO_3$ <0.002 mm %	Bulk Density 1/3 bar g/cc	Bulk Density ovendry g/cc		COLE	Water Contents 1/3 bar %	Water Contents 15 bar %				pH Satur. paste	pH H_2O	pH KCl
0- 12	2.3				17.0						29.6	13.6					7.4	

Depth (cm)	Extractable Bases me / 100 g: Ca	Mg	Na	K	Sum	Ext Acidity	C.E.C. me / 100 g: Sum of Cations	Na OAc		Ext Al me / 100 g	Ratios to clay: C.E.C	Ext. Fe	15 bar water	Ca / Mg	Total Solu. Salts ppm	Base saturation %	Sum of Cations	Na OAc
0- 12			.3	1.1				48.0			1.1		.3					100.0

Depth (cm)	Electrical Conductivity mmho / cm	Water Extract From Saturated Paste — Cations me / liter: Ca	Mg	Na	K	CO_3	HCO_3	Cl	SO_4	Water at Satur %	ESP %	SAR	CSP %	Gypsum %	Ext P_2O_5 ppm	Available Nutrients mg / 100 g: Ca	Mg	K
0- 12	.5										.6	.3	100.0		8.0			>100

Classification: Lithic Xerorthent
Location: Damascus province, Syria. Approximately 20 km northwest of Damascus city, 13 km south of Zabadani, 50 m east of the road from Damascus to Bludan; approximate coordinates 33o 37' N latitude and 36o 05' E longtitude.
Physiographic Position: Steep shoulders of low mountains, elevation about 1740 m.a.s.l.
Topography: Steep topography with a characteristic slope of 45 percent towards southwest.
Drainage: Well drained, rapid surface run-off, moderate permeability.
Vegetation: Native forest.
Parent Material: Cretaceous limestone.
Sampled by: H. Yuksel and R. Rizek on Sept. 20, 1980
Soil No.: SP - 42



Hori.	Depth (cm)	Description
A1	0 - 12	Yellowish red (5 YR 4/6 d) to reddish brown (5 YR 4/4 m) clay; weak, medium, subangular blocky structure; slightly hard (dry), firm (moist), sticky and plastic; few, fine, continuous, vertical, inped, irregular, simple, open pores; common, fine to medium roots mostly inside peds; abrupt, wavy boundary to limestone bedrock; pH 7.4
R	12+	Cretaceous limestone.

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SOIL SERIES _____ TAXONOMY _____ SOIL No. SP - 43

LOCATION _____ LAB Nos. 1561 - 1562 - 1563 - 1564

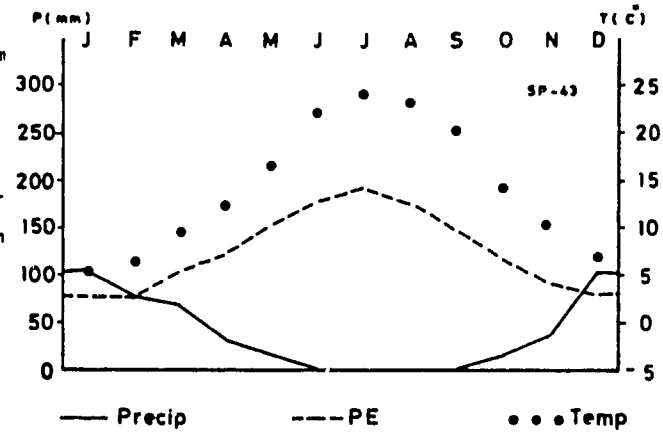
Depth (cm)	Horizon	Size Class and particle diameter (mm) — Total: Sand (2-0.05)	Silt (0.05-0.002)	Clay (<0.002)	Sand: Very coarse (2-1)	Coarse (1-0.5)	Medium (0.5-0.25)	Fine (0.25-0.1)	Very fine (0.1-0.05)	Silt: 0.05-0.02	0.02-0.002	Coarse fragments: >2 % of whole soil	2-19 mm	19-76 mm	Texture class
		% of < 2 mm											% of <76 mm		
0- 4	A1	58	23	19											SL
4- 20	C1	60	20	20											SCL
20- 35	C2	58	18	24											SCL
35- 54	C3	55	19	26											SCL
54- 73	C4	nd	nd	nd											

Depth (cm)	Organic Carbon %	Nitrogen %	C / N	Ext Iron as Fe %	Carbonate as Ca Co 3 < 2 mm %	< 0.002 mm %	Bulk Density 1/3 bar g/cc	ovendry g/cc	COLE	Water Contents 1/3 bar %	15 bar %	Satur. paste	pH H_2O	KCl
0- 4	2.3				58.5					16.1	6.5		7.2	
4- 20	1.6				54.5					16.2	6.6		7.5	
20- 35	1.8				58.5					17.8	7.4		7.6	
35- 54	1.3				67.0					18.9	8.0		7.7	
54- 73														

Depth (cm)	Extractable Bases Ca	Mg	Na	K	Sum (me / 100 g)	Ext Acidity	C. E. C. Sum of Cations	Na OAc	Ext. Al me / 100 g	Ratios to clay C. E. C	Ext. Fe	15 bar water	Ca / Mg	Total Solu. Salts ppm	Base saturation Sum of Cations %	NaOAc
0- 4			.1	1.2				28.0		1.5		.3				100.0
4- 20			.1	.7				28.0		1.4		.3				100.0
20- 35			.1	.7				24.0		1.0		.3				100.0
35- 54			.1	.4				22.0		.8		.3				100.0
54- 73																100.0

Depth (cm)	Electrical Conductivity mmho / cm	Water Extract From Saturated Paste — Cations Ca	Mg	Na	K	CO 3	HCO 3	Cl	SO 4	Water at Satur %	ESP %	SAR	CSP %	Gypsum %	Ext P_2O_5 ppm	Available Nutrients Ca	Mg	K
		me / liter														mg / 100 g		
0- 4	1.3										.4	.1	100.0		22.5			>100
4- 20	.4										.4	.1	100.0		20.0			67.0
20- 35	.3										.5	.2	100.0		15.0			62.3
35- 54	.4										.4	.1	100.0		12.5			40.6
54- 73													100.0					

Classification: Typic Xerorthent
Location: Damascus province, Syria. Approximately 25 km north west of Damascus, 6 km south of Zabadani, 30 m east of the rail road from Damascus to Zabadani; approximate coordinates 33o 14' N Latitude and 36o 05' E longtitude.
Physiographic Position: Foot slopes of low mountains, elevation about 1740 m.a.s.l.
Topography: Moderately sloping topugraphy with a characteristic slope of 8 percent towards south west.
Drainage: Well drained, moderate surface run-off, medium permeability.
Parent Material: Quaternary to recent collovium derived mainly from cretaceous limestone.
Sampled by: H. Yuksel and R. Rizek on Sept. 21, 1980
Soil No.: SP - 43



Hori.	Depth (cm)	Description
A1	0 - 4	Yellowish red (5 YR 4/6 d) to reddish brown (5 YR 4/4 m) gravelly sandy loam; weak, very fine, subangular blocky structure; slightly sticky and slightly plastic; slightly hard (dry), friable (moist), abundant rounded to subrounded gravels, constituting approximately 70 percent of the horizon; common, fine to medium roots inside and between peds; abrupt, smooth boundary; pH 7.2
C1	4 - 20	Yellowish red (5 YR 5/8 d to 5 YR 5/6 m) gravelly sandy clay loam; weak, very fine subangular blocky structure; abundant, rounded gravel, constituting approximately 80 percent of the horizon; common, fine to medium roots; abrupt, wavy boundary; pH 7.5
C2	20 - 35	Yellowish red (5 YR 5/8 d to 5 YR 4/6 m) gravelly sandy loam to sandy clay loam; structureless; loose (dry), friable (moist), slightly sticky and slightly plastic; dominant, rounded gravel, constituting 90 percent of the horizon; few, fine to medium roots; abrupt, wavy boundary; pH 7.6
C3	35 - 54	Yellowish red (5 YR 5/8 d to 5 YR 4/6 m) gravelly sandy clay loam; structureless, abundant rounded gravel, constituting approximately 80 percent of the horizon; few, very fine to medium roots; abrupt wavy boundary; pH 7.7
C4	54 - 73	Yellowish red (5 YR 5/6 d to 5 YR 4/6 m) gravelly sandy clay loam; structureless; dominant, rounded gravel constituting approximately 90 percent of the horizon; few, very fine to medium roots; abrupt wavy boundary.
C5	73+	The horizon almost entirely consists of round gravel; few, very fine to medium roots.

SYRIAN ARAB REPUBLIC
MINISTRY OF AGRICULTURE AND AGRARIAN REFORM
DIRECTORATE OF SOILS
DEPARTMENT OF SOIL SURVEY

SOIL SERIES _____ TAXONOMY _____ SOIL No SP - 44

LOCATION _____ LAB Nos. 1565 - 1566 - 1567 - 1568 - 1569

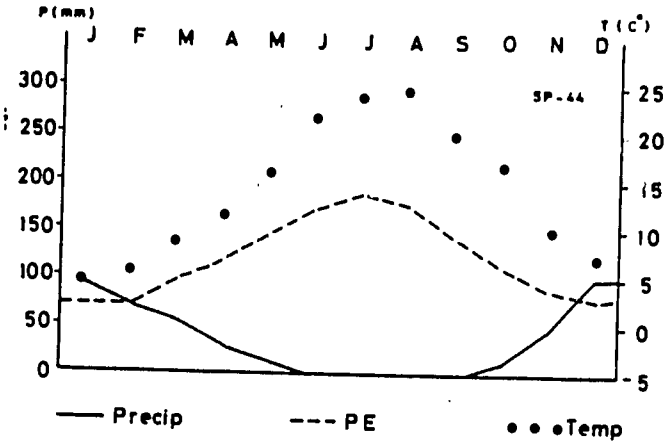
Depth (cm)	Horizon	Size Class and particle diameter (mm): Total Sand 2-0.05	Total Silt (0.05-0.002)	Total Clay (<0.002)	Sand: Very coarse (2-1)	Sand: Coarse (1-0.5)	Sand: Medium (0.5-0.25)	Sand: Fine (0.25-0.1)	Sand: Very fine (0.1-0.05)	Silt: 0.05-0.02	Silt: 0.02-0.002	Coarse fragments >2 % of whole soil	Coarse fragments 2-19 % of <76 mm	Coarse fragments 19-76 % of <76 mm	Texture class
		% of < 2 mm													
0- 14	AP	44	18	38											CL
14- 25	A1	44	15	41											C
25- 42	C1	39	19	42											C
42- 63	C2	38	16	46											C
63-105	C3	15	13	72											C

Depth (cm)	Organic Carbon %	Nitrogen %	C / N	Ext Iron as Fe %	Carbonate as Ca Co 3 <2 mm %	Carbonate as Ca Co 3 <0.002 mm %	Bulk Density 1/3 bar g/cc	Bulk Density ovendry g/cc	COLE	Water Contents 1/3 bar %	Water Contents 15 bar %	pH Satur paste	pH H_2O	pH KCl
0- 14	.8				21.0	37.0				24.5	10.9		7.6	
14- 25	1.7				17.5					25.5	11.4		7.6	
25- 42	.3				18.5					26.5	12.0		7.7	
42- 63	.8				17.0					28.0	12.8		7.4	
63-105	1.7				1.0					[illegible]	19.0		7.4	

Depth (cm)	Extractable Bases Ca (me / 100 g)	Mg	Na	K	Sum	Ext Acidity	C. E. C. Sum of Cations	C. E. C. Na OAc	Ext. Al me / 100 g	Ratios to clay C. E. C	Ratios to clay Ext. Fe	Ratios to clay 15 bar water	Ca / Mg	Total Solu. Salts ppm	Base saturation Sum of Cations %	Base saturation Na OAc %
0- 14			.3	.4				34.0		.9		.3				100.0
14- 25			.2	.3				28.0		.7		.3				100.0
25- 42			.2	.3				34.0		.8		.3				100.0
42- 63			.4	.3				32.0		.7		.3				100.0
63-105			.7	.4				48.0		.7		.3				100.0

Depth (cm)	Electrical Conductivity mmho / cm	Water Extract From Saturated Paste: Cations Ca (mg / liter)	Mg	Na	K	CO 3	HCO 3	Cl	SO 4	Water at Satur %	ESP %	SAR	CSP %	Gypsum %	Ext P_2O_5 ppm	Available Nutrients Ca (mg / 100 g)	Mg	K
0- 14	.7										.8	.4	100.0					36.8
14- 25	.7										.6	.3	100.0					24.5
25- 42	.9										.7	.4	100.0					24.5
42- 63	.9										1.3	.5	100.0					29.3
63-105	1.0										1.4	.7	100.0					31.5

Classification: Typic Xerofluvent, fine, mixed, mesic
Location: Damascus province, Syria. Approximately 28 km north west of Damascus city, 6 km south of Zabadani, 500 m west of the rail road from Damascus to Zabadani; approximate coordinates 33o 41' N latitude and 36o 05' E longtitude.
Physiographic position: Flood plains, elevation about 1000 m.a.s.l.
Topography: Level topography with a characteristic slope of 1 percent.
Drainage: Moderately well drained, very slow surface run-off, slow permeability
Parent Material: Quaternary to recent alluvial derived mainly from cretaceous limestone.
Sampled by: H. Yuksel and R. Rizek on Sept. 21, 1980
Soil No.: SP - 44



Hori.	Depth (cm)	Description
Ap	0 - 14	Yellowish red (5 YR 4/6 d) to reddish brown (5 YR 4/4 m) clay loam; massive; approximately 1 cm wide craks, extending up to 60 cm; extremely hard (dry), firm (moist), sticky and plastic; few, very fine, continuous, random, inped, irregular, simple open pores; few, very fine to fine roots mainly between peds; clear smooth boundary; pH 7.6
A1	14 - 25	Yellowish red (5 YR 5/6 d to 5 YR 4/6 m) clay; extremely hard (dry), firm (moist), sticky and plastic; few, very fine continuous, random, inped, irregular, simple, open pores; few, very fine to fine roots inside and between peds; gradual wavy boundary; pH 7.6
C1	25 - 42	Dark brown (10 YR 4/3 m) clay; strong, medium to coarse subangular blocky structure; firm; very sticky and very plastic; slickenside; frequent, very fine, continuous, inped, irregular, simple, open pores; gradual wavy boundary; pH 7.7
C2	42 - 63	Dark brown (10 YR 4/3 m) clay; strong, medium to coarse subangular blocky structure; very firm, very sticky and plastic; slickenside; few, very fine, continuous, inped, irregular, simple pores; few, small, soft, spheric, black manganese concreations of concentric structure; clear, wavy boundary; pH 7.4
C3	63 - 105	Very dark gray (10 YR 3/1 m) clay; strong, medium, subangular blocky structure; very firm, very sticky and very plastic; some manganese coatings mostly on ped faces; pH 7.4

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DEPARTMENT OF SOIL SURVEY

SOIL SERIES _____ TAXONOMY _____ SOIL No SP - 45

LOCATION _____ LAB Nos. 1570 - 1571 - 1572 - 1573 - 1574

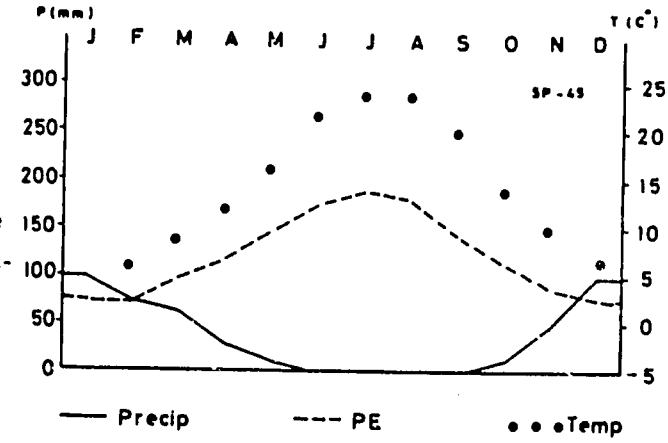
Depth (cm)	Horizon	Size Class and particle diameter (mm) — Total: Sand (2-0.05)	Silt (0.05-0.002)	Clay (<0.002)	Sand: Very coarse (2-1)	Coarse (1-0.5)	Medium (0.5-0.25)	Fine (0.25-0.1)	Very fine (0.1-0.05)	Silt: 0.05-0.02	0.02-0.002	Coarse fragments >2 % of whole soil	2-19 %	19-76 %	Texture class
		% of < 2 mm											% of <76 mm		
0- 4	A1	41	27	32											CL
4- 20	B21	42	24	34											CL
20- 32	B22	38	18	44											C
32- 51	C1	42	20	38											CL
51- 94	C2	46	21	33											SCL

Depth (cm)	Organic Carbon %	Nitrogen %	C / N	Ext. Iron as Fe %	Carbonates as $CaCO_3$ <2 mm %	<0.002 mm %	Bulk Density 1/3 bar g/cc	ovendry g/cc	COLE	Water Contents 1/3 bar %	15 bar %	pH Satur paste	H_2O	KCl
0- 4	.7				9.0					22.9	10.1		7.5	
4- 20	1.3				9.0					23.4	10.4		7.6	
20- 32	.5				5.0					27.3	12.4		7.5	
32- 51	.9				10.0					24.8	11.1		7.5	
51- 94	.8				12.0					22.5	9.9		7.5	

Depth (cm)	Extractable Bases me/100 g: Ca	Mg	Na	K	Sum	Ext Acidity	C.E.C: Sum of Cations	Na OAc	Ext. Al me/100 g	Ratios to clay: C.E.C	Ext. Fe	15 bar water	Ca/Mg	Total Solu. Salts ppm	Base saturation: Sum of Cations %	Na OAc %
0- 4			.1	1.4				30.0		.9		.3				100.0
4- 20			.3	1.4				34.0		1.0		.3				100.0
20- 32			.2	1.1				34.0		.8		.3				100.0
32- 51			.4	1.1				32.0		.8		.3				100.0
51- 94			.2	1.1				34.0		1.0		.3				100.0

Depth (cm)	Electrical Conductivity mmho/cm	Water Extract From Saturated Paste — Cations me/liter: Ca	Mg	Na	K	CO_3	HCO_3	Cl	SO_4	Water at Satur %	ESP %	SAR	CSP %	Gypsum %	Ext P_2O_5 ppm	Available Nutrients mg/100 g: Ca	Mg	K
0- 4	.6										.3	.1	100.0	tr	9.3			>100
4- 20	.6										.9	.3	100.0	tr	17.0			>100
20- 32	.5										.6	.2	100.0	tr	15.0			>100
32- 51	1.6										1.3	.4	100.0	tr	14.0			>100
51- 94	.4										.6	.2	100.0	tr	5.7			>100

Classification: Typic Xerochrept, fine loamy skeletal, mixed, mesic
Location: Damascus province, Syria. Approximately 26 km north west of Damascus, 5 km south of Zabadani, 500 m east of the rail road from Damascus to Zabadani; approximate coordinates 33o 41' N Latitude and 36o 06'E longtitude
Physiographic Position: Foot slopes of low mountains, elevation about 1740 m.a.s.l.
Topography: Moderately sloping topography with a characteristic slope of 10 percent towards Southwest.
Drainage: Well drained, medium surface run-off, moderate permeability.
Parent material: Quaternary to recent colluvium derived mainly from cretaceous limestone.
Sampled by: H. Yuksel and R. Rizek on Sept. 21, 1980
Soil No.: SP - 45



Hori.	Depth (cm)	Description
A1	0 - 4	Dark red (2.5 YR 3/6 d) to dark reddish brown (2.5 YR 3/4 m) clay loam; weak, fine, subangular blocky structure; slightly hard (dry), friable (moist), slightly sticky and slightly plastic; many, fine continuous, inped, irregular, simple, open pores; frequent subrounded gravel, constituting approximately 20 percent of the horizon; common, very fine to fine roots, mostly between peds; abrupt smooth boundary; pH 7.5
B21	4 - 20	Yellowish red (5 YR 5/8 d to 5 YR 4/6 m) clay loam; moderate, medium, subangular blocky structure; hard (dry), friable (moist), slightly sticky and slightly plastic; many fine to medium continuous, inped, irregular, simple, open pores; frequent subrounded gravel constituting approximately 35 percent of the horizon; common, very fine to fine roots mostly between peds; clear wavy boundary; pH 7.6
B22	20 - 32	Yellowish red (5 YR 5/8 d to 5 YR 4/6 m) gravelly clay; moderate, medium, subangular blocky structure; hard (dry), firm (moist), sticky and plastic; few, fine to medium, continuous, vertical, inped, irregular, simple, open pores; frequent, subrounded gravel, constituting approximately 30 percent of the horizon; few, fine to medium roots, mostly between peds; gradual wavy boundary; pH 7.5
C1	32 - 51	Yellowish red (5 YR 5/6 d) to reddish brown (5 YR 4/4 m) gravelly clay loam; hard (dry), firm (moist), sticky and plastic; few, fine, continuous, random, inped, irregular, simple, pores; abundant, subrounded gravel, constituting approximately 45 percent of the horizon; few, very fine roots mostly between peds; gradual wavy boundary; pH 7.5
C2	51 - 94	Yellowish red (5 YR 5/6 d to 4/6 m) gravelly sandy clay loam; hard (dry), firm (moist), sticky and plastic; abundant subrounded gravel, constituting approximately 50 percent of the horizon; few, very fine roots, mostly between peds; gradual wavy boundary; pH 7.5
C3	94+	Yellowish red (5 YR 5/6 d to 5YR 4/6 m) gravelly clay loam; dominant, subrounded gravels, constituting more than 80 percent of the horizon; few, very fine roots.

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SOIL SERIES _____ TAXONOMY _____ SOIL No SP - 46

LOCATION _____ LAB Nos 1575 - 1576 - 1577 - 1578 - 1579 - 1580 - 158

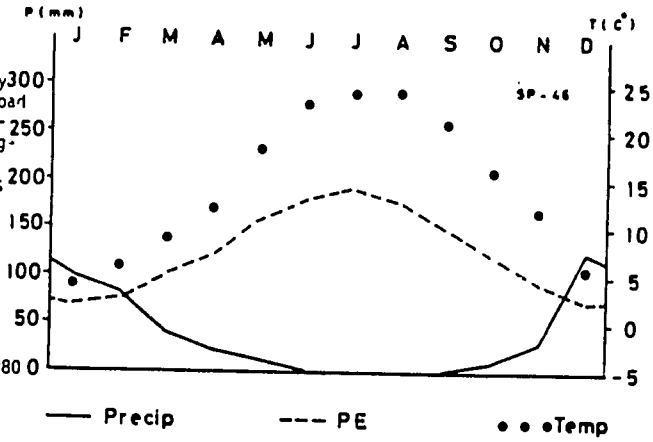
Depth (cm)	Horizon	Size Class and particle diameter (mm) — Total: Sand (2-0.05)	Total: Silt (0.05-0.002)	Total: Clay (<0.002)	Sand: Very coarse (2-1)	Sand: Coarse (1-0.5)	Sand: Medium (0.5-0.25)	Sand: Fine (0.25-0.1)	Sand: Very fine (0.1-0.05)	Silt: 0.05-0.002	Silt: 0.02-0.002	Coarse fragments >2 % of whole soil	Coarse fragments 2-19 % of <76 mm	Coarse fragments 19-76 % of <76 mm	Texture class
		% of < 2 mm													
0- 15	A1	31	32	37											CL
15- 21	B1	30	28	42											C
21- 40	B21	26	22	52											C
40- 61	B22	33	25	42											C
61- 86	B23	nd	nd	nd											
86-107	B3ca	31	27	42											C
107-140	C1ca	31	27	42											C
140-166	C2ca	33	27	40											CL

Depth (cm)	Organic Carbon %	Nitrogen %	C / N	Ext Iron as Fe %	Carbonate as $CaCO_3$ <2 mm %	Carbonate as $CaCO_3$ <0.002 mm %	Bulk Density 1/3 bar g/cc	Bulk Density ovendry g/cc	COLE	Water Contents 1/3 bar %	Water Contents 15 bar %	pH Satur paste	pH H_2O	pH KCl
0- 15	1.4				42.0					26.0	11.7		7.5	
15- 21	1.0				53.0					27.8	12.7		7.6	
21- 40	.8				61.0					31.7	14.7		7.4	
40- 61	.8				53.0					27.4	12.4		7.6	
61- 86														
86-107	1.0				53.0					27.7	12.6		7.7	
107-140	1.5				56.0					27.7	12.6		7.7	
140-166	.3				56.0					26.7	12.1		7.8	

Depth (cm)	Extractable Bases Ca (me/100 g)	Mg	Na	K	Sum	Ext Acidity	C.E.C Sum of Cations	C.E.C NaOAc	Ext. Al me/100 g	Ratios to clay C.E.C	Ext. Fe	15 bar water	Ca/Mg	Total Solu. Salts ppm	Base saturation Sum of Cations %	Base saturation NaOAc %
0- 15			.3	.4				32.0		.9		.3				100.0
15- 21			.3	.2				34.0		.8		.3				100.0
21- 40			.3	.2				38.0		.7		.3				100.0
40- 61			.3	.2				32.0		.8		.3				100.0
61- 86																
86-107			.3	.2				34.0		.8		.3				100.0
107-140			.4	.2				34.0		.8		.3				100.0
140-166			.4	.3				28.0		.7		.3				100.0

Depth (cm)	Electrical Conductivity mmho/cm	Water Extract From Saturated Paste: Cations Ca (me/liter)	Mg	Na	K	CO_3	HCO_3	Cl	SO_4	Water at Satur %	ESP %	SAR	CSP %	Gypsum %	Ext P_2O_5 ppm	Available Nutrients Ca (mg/100 g)	Mg	K
0- 15	.5										.9	.4	100.0	tr	10.0			37.8
15- 21	.5										.9	.5	100.0	tr	3.2			18.9
21- 40	.6										.9	.5	100.0	tr	3.7			18.9
40- 61	.9										.9	.5	100.0	tr	1.5			18.9
61- 86													100.0					
86-107	.5										.9	.5	100.0	tr	1.0			18.9
107-140	.5										1.2	.6	100.0	tr	5.1			18.9
140-166	.4										1.4	.5	100.0	tr	2.1			28.3

Classification: Calcioxerollic Xerochrept; fine, mixed, thermic.
Location: Damascus province, Syria. Approximately 12 km west of Damascus, 4 km south of the road from Damascus to Beirut; Approximate coordinates 33o 02' N latitude and 36o 10' E longtitude.
Physiographic Position: Gently undulating terrace; elevation about 1000 m.a.s.l.
Topography: Moderately sloping topography with a characteristic slope of 10 percent towards southwest.
Drainage: Well drained, medium surface run-off, moderate permeability.
Parent Material: Quaternary rerent colluvium deposits derived from cretaceous limestone.
Sampled by: H. Yuksel and R. Rizek on Sept. 22, 1980
Soil No.: SP - 46



Hori.	Depth (cm)	Description
A1	0 - 15	Yellowish red (5 YR 5/6 d to 5 YR 4/6 m) clay loam; weak, medium, subangular blocky structure; hyde (dry), firm (moist), sticky and plastic; few, fine, continuous, vertical, inped, irregular, simple pores; few, very fine to fine roots, mostly between peds; abrupt, wavy boundary; pH 7.5
B1	15 - 21	Strong brown (7.5 YR 5/6 d) to (7.5 YR 5/4 m) clay; moderate, fine to very fine, subangular blocky structure; slightly hard (dry), firm (moist), sticky and plastic; few, very fine to fine, continuous, vertical, inped, irregular, simple pores; few, rounded and subrounded gravel, constituting approximately 15 percent of the horizon; few, large, soft, irregular, local calcium carbonate accumulations; few, very fine roots, mostly between peds; clear, wavy boundary; pH 7.6
B21	21 - 40	Yellow (10 YR 7/6 d) to strong brown (7.5 YR 5/6 m) clay; moderate, fine and very fine subangular blocky structure; slightly hard (dry), friable (moist), sticky and plastic, few, fine to medium, continuous, vertical, inped, irregular, simple pores; few rounded and subrounded gravel constituting approximately 10 percent of the horizon; frequent, large, soft, irregular, carbonate accumulations; few, very fine roots mostly between peds; gradual wavy boundary; pH 7.4
B22	40 - 61	Brownish yellow (10 YR 6/6 d) to strong brown (7.5 YR 5/6 m) clay; moderate, fine, subangular blocky structure; hard (dry), firm (moist), sticky and plastic; few, fine, continuous, vertical, inped, irregular, simple pores; few rounded and subrounded gravel, constituting approximately 15 percent of the horizon; frequent, large, soft, irregular shaped carbonates accumulations; gradual, wavy boundary; pH 7.6
B 23	61 - 86	Light yellowish brown (10 YR 6/4 d) to strong brown (7.5 YR 5/6 m) clay; moderate, fine subangular blocky structure; slightly hard (dry) firm (moist), sticky and plastic; few rounded to subrounded gravel constituting approximately 15 percent of the horizon; frequent, large, soft, irregular carbonates coatings on ped faces; gradual, wavy boundary.
B3 ca	86 - 107	Yellowish brown (10 YR 5/6 d) to strong brown (7.5 YR 5/6 m) clay; weak, fine, subangular blocky structure; slightly hard (dry), firm (moist), sticky and plastic; few, fine, discontinuous, random, inped, irregular simple pores; frequent rounded and subrounded gravel constituting approximately 25 percent of the horizon; abundant, large, soft, irregular carbonates coatings on ped faces; gradual, wavy boundary; pH 7.7
C1 ca	107 - 140	Yellowish brown (10 YR 5/6 d) to strong brown (7.5 YR 5/6 m) clay; weak, fine, subangular blocky structure; slightly hard (dry), firm (moist), sticky and plastic; few, fine, discontinuous, random inped, irregular, closed pores; frequent, rounded and subrounded gravel constituting approximately 25 percent of the horizon; abundant, large, soft, irregular carbonate coatings on ped faces; gradual, wavy boundary; pH 7.7
C2 ca	140 - 166	Brownish yellow (10 YR 6/6 d) to yellowish brown (10 YR 5/6 m) clay; weak, very fine, subangular blocky structure; slightly hard (dry), firm (moist), sticky and plastic; frequent, rounded and subrounded gravel constituting approximately 30 percent of the horizon; abundant, large, soft, irregular, carbonate coatings on ped faces; pH 7.8

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DEPARTMENT OF SOIL SURVEY

SOIL SERIES _____ TAXONOMY _____ SOIL. No SP - 47

LOCATION _____ LAB Nos. 1583 - 1584 - 1585

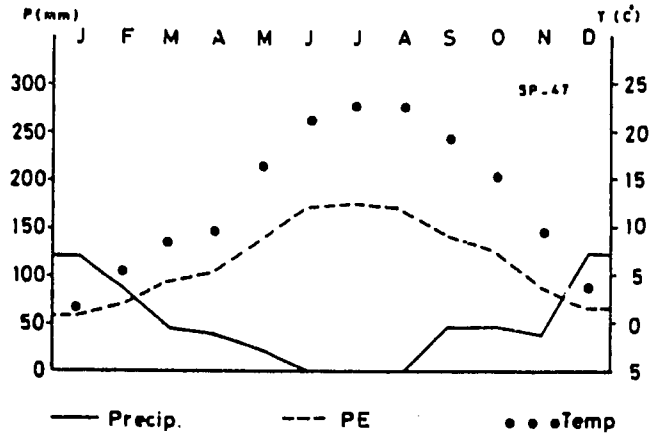
Depth (cm)	Horizon	Size Class and particle diameter (mm) — Total: Sand (2-0.05)	Total: Silt (0.05-0.002)	Total: Clay (<0.002)	Sand: Very coarse (2-1)	Sand: Coarse (1-0.5)	Sand: Medium (0.5-0.25)	Sand: Fine (0.25-0.1)	Sand: Very fine (0.1-0.05)	Silt: 0.05-0.02	Silt: 0.02-0.002	Coarse fragments: >2 % of whole soil	Coarse fragments: 2-19 % of <76 mm	Coarse fragments: 19-76 % of <76 mm	Texture class
		% of < 2 mm													
0- 8	A1	28	24	48											C
8- 17	B21	41	25	34											CL
17- 37	B22	34	24	42											C

Depth (cm)	Organic Carbon %	Nitrogen %	C / N	Ext. Iron as Fe %	Carbonate as $CaCO_3$ <2 mm %	Carbonate as $CaCO_3$ <0.002 mm %	Bulk Density 1/3 bar g/cc	Bulk Density ovendry g/cc	COLE	Water Contents 1/3 bar %	Water Contents 15 bar %	pH Satur paste	pH H_2O 1	pH KCl 1
0- 8	1.2				11.0					30.1	13.9		7.6	
8- 17	1.9				9.0					23.6	10.4		7.6	
17- 37	.4				11.0					27.3	12.4		7.6	

Depth (cm)	Extractable Bases Ca (me / 100 g)	Mg	Na	K	Sum	Ext Acidity	C.E.C. Sum of Cations	C.E.C. Na OAc	Ext Al me / 100 g	Ratios to clay C.E.C	Ext. Fe	15 bar water	Ca / Mg	Total Solu. Salts ppm	Base saturation Sum of Cations %	Base saturation Na OAc %
0- 8			.3	1.1				48.0		1.0		.3				100.0
8- 17			.5	1.3				44.0		1.3		.3				100.0
17- 37			.5	.8				8.0		.2		.3				100.0

Depth (cm)	Electrical Conductivity mmho / cm	Water Extract From Saturated Paste — Cations: Ca (me / liter)	Mg	Na	K	CO_3	HCO_3	Cl	SO_4	Water at Satur %	ESP %	SAR	CSP %	Gypsum %	Ext P_2O_5 ppm	Available Nutrients Ca (mg / 100 g)	Mg	K
0- 8	.4										.6	.3	100.0	tr	6.0			>100
8- 17	.4										1.1	.5	100.0	tr	3.0			>100
17- 37	.5										6.3	.5	100.0	tr	3.0			75.5

Classification: Ruptic Lithic Xerochrept; fine, mixed, thermic.
Location: Damascus province, Syria. Approximately 14 km west of Damascus city, 3 km south of the road from Damascus to Beirut; approximate coordinates 33o 33' N Latitude and 36o 09' E longtitude.
Physiographic Position: Foot slopes; elevation about 900 m.a.s.l.
Topography: Undulating to gently sloping with a characteristic slope of less than 5 percent towards west.
Drainage: Well drained, moderately slow surface run-off, moderately slow permeability.
Parent Material: Quaternary or more recent colluvium derived mainly from cretaceous limestone
Sampled by: H. Yuksel and R. Rizek on Sept. 14, 1980
Soil No.: SP - 47



Hori.	Depth (cm)	Description
A1	0 - 8	Yellowish red (5 YR 5/8 d) to reddish brown (5 YR 4/4 m) clay; weak, medium, subangular blocky structure; approximately 1 cm wide craks extending upto 30 cm; hard (dry), friable (moist); sticky and plastic; many, very fine, continuous, vertical, inped, tubular, simple pores; few subrounded gravel constituting approximately 5 percent of the horizon; few insect nests and worm casts; few, very fine to fine roots between peds; clear wavy boundary; pH 7.6
B21	8 - 17	Yellowish red (5 YR 5/6 d) to reddish brown (5 YR 4/4 m) clay loam; moderate, medium, subangular blocky structure; slightly hard (dry), firm (moist), sticky and plastic; many, very fine, continuous, vertical, inped, simple pores; few, rounded gravel constituting approximately 5 percent of the horizon; few, very fine to fine roots, mostly between peds; clear wavy boundary; pH 7.6
B22	17 - 37	Yellowish red (5 YR 4/6 d) to reddish brown (5 YR 4/4 m) clay; moderate, medium, subangular blocky structure; many, very fine, continuous, vertical, inped, tubular simple pores; few subrounded gravel constituting approximately 5 percent of the horizon; few, very fine roots between peds; pH 7.6
R	37+	Limestone bedrock.

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SOIL SERIES _____ TAXONOMY _____ SOIL No SP - 48

LOCATION _____ LAB Nos. 1586 - 1587 - 1588 - 1589

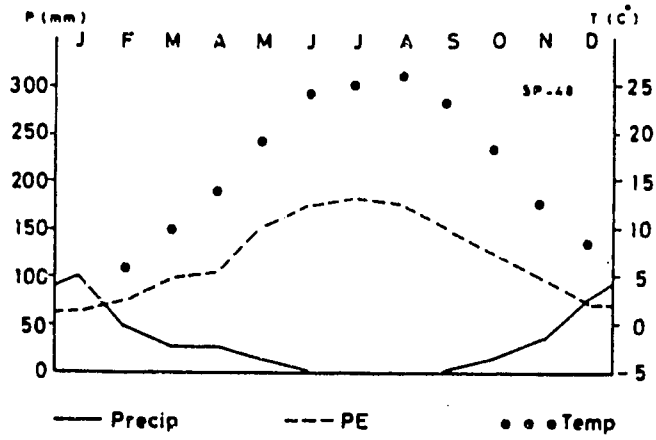
Depth (cm)	Horizon	Size Class and particle diameter (mm) — Total: Sand (2-0.05)	Silt (0.05-0.002)	Clay (<0.002)	Sand: Very coarse (2-1)	Coarse (1-0.5)	Medium (0.5-0.25)	Fine (0.25-0.1)	Very fine (0.1-0.05)	Silt: 0.05-0.02	0.02-0.002				Coarse fragments >2 mm % of whole soil	2-19 mm % of <76 mm	19-76 mm % of <76 mm	Texture class
		% of < 2 mm																
0- 11	A11	27	42	31														CL
11- 22	A12	31	37	32														CL
22- 37	B2ca	26	24	50														C
37- 48	C	33	28	39														CL

Depth (cm)	Organic Carbon %	Nitrogen %	C / N	Ext Iron as Fe %	Carbonate as $CaCO_3$ <2 mm %	Carbonate as $CaCO_3$ <0.002 mm %	Bulk Density 1/3 bar g/cc	Bulk Density ovendry g/cc	COLE	Water Contents 1/3 bar %	Water Contents 15 bar %				pH Satur. paste	pH H_2O	pH KCl
0- 11	2.0				35.0	10.0				24.6	11.0					7.5	
11- 22	1.1				34.5	10.2				24.4	10.8					7.6	
22- 37	1.0				29.5	12.3				31.1	14.4					7.7	
37- 48	.9				43.5	16.6				26.4	11.9					7.6	

Depth (cm)	Extractable Bases Ca	Mg	Na	K	Sum (me / 100 g)	Ext Acidity	C. E. C. Sum of Cations	C. E. C. Na OAc		Ext. Al me / 100 g	Ratios to clay C. E. C	Ext. Fe	15 bar water	Ca / Mg	Total Solu. Salts ppm		Base saturation Sum of Cations %	Base saturation Na OAc %
0- 11			.3	3.6				40.0			1.3		.4					100.0
11- 22			.3	1.7				46.0			1.4		.3					100.0
22- 37			.3	1.5				46.0			.9		.3					100.0
37- 48			.4	1.1				42.0			1.1		.3					100.0

Depth (cm)	Electrical Conductivity mmho / cm	Water Extract From Saturated Paste — Cations: Ca (me / liter)	Mg	Na	K	CO_3	HCO_3	Cl	SO_4	Water at Satur %	ESP %	SAR	CSP %	Gypsum %	Ext P_2O_5 ppm	Available Nutrients Ca (mg / 100 g)	Mg	K
0- 11	.5										.8	.2	100.0	tr	22.0			>100
11- 22	.3										.7	.3	100.0	tr	9.2			>100
22- 37	.3										.7	.3	100.0	tr	7.0			>100
37- 48	.5										1.0	.4	100.0	tr	7.0			>100

Classification: Lithic Xerochrept, fine, loamy, mixed, thermic.
Location: Damascus province, Syria. Approximately 10 km west of Damascus, 8 km southwest of Dumar, 5 km south of the road from Damascus to Beirut. Approximate coordinates 33o 31' N latitude and 36o 11' longtitude.
Physiographic Position: Shoulder of high hills; elevation approximately 1085 m.a.s.l.
Topography: Very steep topography with a slope of 60 percent towards north.
Drainage: Well drained, very rapid surface run-off, moderate permeability.
Vegetation: Barren land.
Parent Material: Neogene and/or paleogene limestone.
Sampled by: H. Yuksel and R. Rizek on Sept. 22, 1980
Soil No.: SP - 48



Hori.	Depth (cm)	Description
A11	0 - 11	Brown (7.5 YR 5/4 d) to reddish brown (5 YR 4/4 m) clay loam; weak, fine, subangular blocky structure; breaking to weak, fine granular structure; slightly hard (dry), firm (moist), sticky and slightly plastic; many, fine, continuous, vertical, inped, simple, open pores; few subrounded angular gravel constituting approximately 15 percent of the horizon; frequent, large, hard, limestone fragments; few insect nests; common, very fine to fine roots mostly inside peds; clear, smooth boundary; pH 7.5
A12	11 - 22	Brown (7.5 YR 5/4 d) to reddish brown (5 YR 4/4 m) clay loam; moderate, medium, subangular blocky structure; slightly hard (dry), firm (moist), sticky and slightly plastic; frequent, fine, continuous, vertical, inped, simple, open pores; frequent subrounded to angular gravel constituting 20 percent of the horizon; frequent, large, hard, angular limestone fragments; few insect nests; common, very fine to fine roots inside peds; abrupt smooth boundary; pH 7.6
B2 ca	22 - 37	Brown (7.5 YR 5/4 d) to dark brown (7.5 YR 4/4 m) clay; moderate, medium, subangular blocky structure; hard (dry), firm (moist), sticky and plastic; frequent, fine, continuous, vertical, inped, simple, open pores; frequent, subrounded to angular gravel constituting approximately 30 percent of the horizon; frequent, large, soft to hard, angular limestone fragments; few insect nests and burrows; few, fine to medium roots inside peds; clear smooth boundary; pH 7.7
C	37 - 48	Strong brown (5 YR 5/6 m) clay loam; medium subangular blocky structure; hard (dry), firm (moist), sticky and plastic; few, fine to medium, discontinuous, vertical, inped, irregular, simple, closed pores; abundant subrounded to angular gravel stone constituting approximately 60 percent of the horizon; frequent to abundant, large, hard, angular limestone fragments; few, very fine roots inside peds; clear broken boundary; pH 7.6
R	48+	Limestone bedrock.

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SOIL SERIES _____ TAXONOMY : _____ SOIL No SP - 49

LOCATION _____ LAB Nos. 1590 - 1591 - 1592

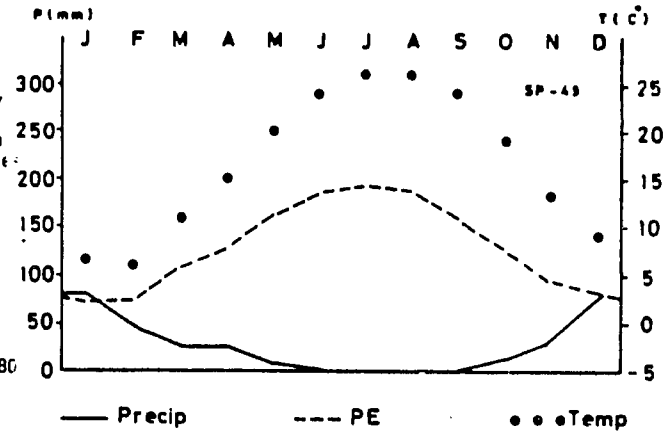
Depth (cm)	Horizon	Size Class and particle diameter (mm) — Total: Sand (2-0.05)	Total: Silt (0.05-0.002)	Total: Clay (<0.002)	Sand: Very coarse (2-1)	Sand: Coarse (1-0.5)	Sand: Medium (0.5-0.25)	Sand: Fine (0.25-0.1)	Sand: Very fine (0.1-0.05)	Silt: 0.05-0.02	Silt: 0.02-0.002				Coarse fragments: >2 % of whole soil	Coarse fragments: 2-19 % of <76 mm	Coarse fragments: 19-76 % of <76 mm	Texture class
		% of < 2 mm																
0- 14	AP	45	28	27														L
14- 23	B21	29	22	49														C
23- 34	B22	33	34	33														L

Depth (cm)	Organic Carbon %	Nitrogen %	C / N	Ext Iron as Fe %	Carbonate as $CaCO_3$ <2 mm %	Carbonate as $CaCO_3$ <0.002 mm %	Bulk Density 1/3 bar g/cc	Bulk Density oven dry g/cc		COLE	Water Contents 1/3 bar %	Water Contents 15 bar %			pH Satur. paste	pH H_2O 1/	pH KCl 1/
0- 14	.9				39.0	10.2					20.7	8.9				7.4	
14- 23	.5				39.5	14.4					30.3	14.0				7.6	
23- 34	.7				39.5	18.6					24.4	10.9				7.4	

Depth (cm)	Extractable Bases Ca	Mg	Na	K	Sum (me / 100 g)	Ext Acidity	C. E. C. Sum of Cations	C. E. C. Na OAc		Ext. Al me / 100 g	Ratios to clay C. E. C	Ratios to clay Ext. Fe	Ratios to clay 15 bar water	Ca/Mg	Total Solu. Salts ppm		Base saturation Sum of Cations %	Base saturation Na OAc %
0- 14			.3	4.8				34.0			1.3		.3					100.0
14- 23			.5	2.6				36.0			.7		.3					100.0
23- 34			.5	1.5				34.0			1.0		.3					100.0

Depth (cm)	Electrical Conductivity mmho / cm	Water Extract From Saturated Paste — Cations: Ca	Mg	Na	K	CO_3	HCO_3	Cl	SO_4	Water at Satur %	ESP %	SAR	CSP %	Gypsum %	Ext P_2O_5 ppm	Available Nutrients Ca	Mg	K
		me / liter														me / 100 g		
0- 14	.5										.9	.2	100.0	tr	18.0			>100
14- 23	.6										1.4	.4	100.0	tr	10.0			>100
23- 34	.9										1.5	.5	100.0	tr	10.0			>100

Classification: Lithic Camborthids, fine, loamy, mixed, thermic.
Location: Damascus province, Syria. Approximately 10 km southwest of Damascus, 500 m north of Maaddamyah, 200 m southeast of the road from Damascus to Quneytra. Approximate coordinates: 33o 29' N latitude and 34o 13' E longtitude.
Physiographic Position: Gently undulating plains, elevation about 750 m.a.s.l.
Topography: Topography with a characteristic slope 3 percent towards east.
Drainage: Well drained, slow surface run-off, slow permeability.
Parent Material: Neogene limestone with inclusions of Quaternary or more recent colluvium.
Sampled by: H. Yuksel and R. Rizek on Sept. 23, 1980
Soil No.: SP - 49



Hori.	Depth (cm)	Description
Ap	0 - 14	Brownish yellow (10 YR 6/6 d) to yellowish brown (10 YR 5/6 m) loam; moderate, medium, subangular blocky structure; slightly hard (dry), friable (moist), slightly sticky and slightly plastic; frequent, fine, continuous, vertical, inped open pores; few, rounded to subrounded gravels, constituting approximately 5 percent of the horizon; few, large, hard, irregular limestone fragments; few, very fine to fine roots mostly between peds; clear, wavy boundary; pH 7.4
B21	14 - 23	Brownish yellow (10 YR 6/6 d) to yellowish brown (10 YR 5/6 m) clay; moderate, fine, subangular blocky structure; slightly hard (dry), firm (moist), sticky and plastic; few, fine, continuous, vertical, inped, open pores; few, rounded to subrounded gravels, constituting approximately 5 percent of the horizon; frequent, large, soft, irregular, shaped limestone fragments and carbonate coating on coarse fragments and peds; few, very fine roots between peds; clear, wavy boundary; pH 7.6
B22	23 - 34	Yellowish brown (10 YR 5/5 m) clay loam; moderate, fine, subangular blocky structure; firm (moist), sticky and slightly plastic, frequent, fine, continuous, vertical, inped, closed pores; few rounded to subrounded gravel constituting approximately 10 percent of the horizon; frequent, large, hard, irregular, shaped limestone fragments and carbonate coatings on ped faces; few, very fine roots between peds; abrupt, smooth boundary; pH 7.4
R	34+	Limestone bedrock.

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SOIL SERIES _____ TAXONOMY _____ SOIL No SP - 50

LOCATION _____ LAB Nos. 1593 - 1594

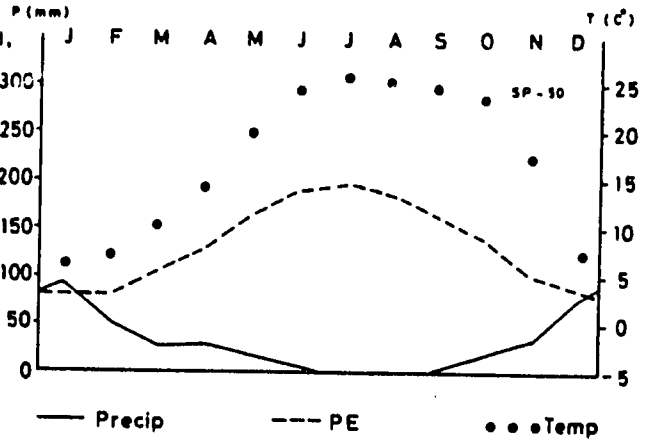
Depth (cm)	Horizon	Size Class and particle diameter (mm)																Texture class
		Total			Sand					Silt					Coarse fragments			
		Sand (2-0.05)	Silt (0.05-0.002)	Clay (<0.002)	Very coarse (2-1)	Coarse (1-0.5)	Medium (0.5-0.25)	Fine (0.25-0.1)	Very fine (0.1-0.05)	0.05-0.02	0.02-0.002				>2 % of whole soil	2-19 %	19-76 %	
		% of < 2 mm														% of <76 mm		
0-12	A11	33	34	33														CL
12-27	A12	27	26	47														C

Depth (cm)	Organic Carbon %	Nitrogen %	C / N	Ext. Iron as Fe %	Carbonate as $CaCO_3$ <2 mm %	Carbonate as $CaCO_3$ <0.002 mm %	Bulk Density 1/3 bar g/cc	Bulk Density ovendry g/cc	COLE	Water Contents 1/3 bar %	Water Contents 15 bar %			pH Satur. paste	pH H_2O	pH KCl
0-12	1.7				28.5	6.0				24.4	10.9				7.4	
12-27	1.1				23.0	6.0				29.9	13.8				7.6	

Depth (cm)	Extractable Bases Ca	Mg	Na	K	Sum	Ext Acidity	C.E.C. Sum of Cations	C.E.C. Na OAc		Ext. Al me/100 g	Ratios to clay C.E.C	Ext. Fe	15 bar water	Ca/Mg	Total Solu. Salts ppm		Base saturation Sum of Cations %	Base saturation NaOAc %
	me / 100 g																	
0-12			.4	4.5				46.0			1.4		.3					100.0
12-27			.6	1.9				47.0			1.0		.3					100.0

Depth (cm)	Electrical Conductivity mmho / cm	Water Extract From Saturated Paste Cations Ca	Mg	Na	K	CO_3	HCO_3	Cl	SO_4	Water at Satur %	ESP %	SAR	CSP %	Gypsum %	Ext P_2O_5 ppm	Available Nutrients Ca	Mg	K
		me / liter														mg / 100 g		
0-12	.5										.9	.2	100.0	tr	18.0			>100
12-27	.4										1.3	.5	100.0	tr	9.0			>100

Classification: Lithic Xerothents; fine loamy, mixed, thermic.
Location: Damascus province, Syria. Approximately 22 km west of Damascus, 4 km northwest of Quneytra, 3 km west of the road from Damascus to Quneytra. Approximate coordinates 33o 28' N Latitude and 36o 02' E longtitude.
Physiographic Position: Low hills, elevation about 1000 m.a.s.l.
Topography: Moderately steep topography with a characteristic slope of 30 percent towards north.
Drainage: Well drained, rapid surface run-off, moderate permeability.
Parent Material: Neogene or quaternary conglomerate and limestone.
Sampled by: H. Yuksel and R. Rizek on Sept. 22, 1980
Soil No.: SP - 50



Hori.	Depth (cm)	Description
A11	0 - 12	Strong brown (7.5 YR 5/6 d) to dark brown (7.5 YR 4/4 m) clay loam; moderate, medium, subangular blocky structure; slightly hard (dry), friable (moist), slightly sticky and slightly plastic; frequent, fine, continuous, vertical, inped, open pores; few, rounded to subrounded gravel constituting approximately 10 percent of the horizon; common, fine roots between peds; abrupt smooth boundary; pH 7.4
A12	12 - 27	Yellowish red (5 YR 5/6 d to 5 YR 4/6 m) clay loam; moderate, medium, subangular blocky structure, breaking to moderate, medium, granular structure; slightly hard (dry), firm (moist), sticky and slightly plastic; frequent, fine to medium, continuous, vertical, inped, open pores; frequent, rounded to subrounded gravels constituting approximately 15 percent of the horizon; few, very fine to fine roots between peds; gradual, broken boundary; pH 7.6
R	27+	Conglomerate.

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SOIL SERIES _____ TAXONOMY _____ SOIL No SP - 51

LOCATION _____ LAB Nos. 1595 - 1596 - 1597

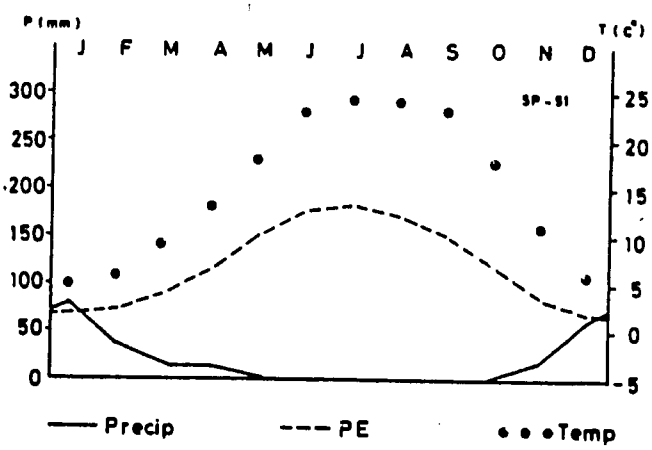
Depth (cm)	Horizon	Size Class and particle diameter (mm)																Texture class
		Total			Sand					Silt					Coarse fragments			
		Sand (2-0.05)	Silt (0.05-0.002)	Clay (<0.002)	Very coarse (2-1)	Coarse (1-0.5)	Medium (0.5-0.25)	Fine (0.25-0.1)	Very fine (0.1-0.05)	0.05-0.02	0.02-0.002				>2 % of whole soil	2-19 %	19-76 %	
		% of < 2 mm														% of <76 mm		
0- 3	A1	25	42	33														CL
3- 21	B21	35	34	31														CL
21- 42	B22	23	26	51														C

Depth (cm)	Organic Carbon %	Nitrogen %	C / N	Ext Iron as Fe %	Carbonate as Ca Co 3		Bulk Density			COLE	Water Contents				pH		
					<2 mm	<0.002 mm	1/3 bar	ovendry			1/3 bar	15 bar			Satur paste	H_2O	KCl
					%		g / cm³				%						
0- 3	.7				18.0	4.0					25.6	11.5				7.4	
3- 21	.7				17.0	4.0					23.5	10.4				7.6	
21- 42	.8				17.0	5.0					31.8	14.8				7.7	

Depth (cm)	Extractable Bases					Ext Acidity	C. E. C.			Ext. Al me / 100 g	Ratios to clay				Total Soluble Salts ppm	Base saturation	
	Ca	Mg	Na	K	Sum		Sum of Cations	Na OAc			C E C	Ext. Fe	15 bar water	Ca/ Mg		Sum of Cations	NaOAc
	me / 100 g															%	
0- 3			.3	5.3				46.0			1.4		.3				100.0
3- 21			.4	3.6				47.0			1.5		.3				100.0
21- 42			.5	2.9				46.0			.9		.3				100.0

Depth (cm)	Electrical Conductivity mmho / cm	Water Extract From Saturated Paste								Water at Satur %	ESP %	SAR	CSP %	Gypsum %	Ext P_2O_5 ppm	Available Nutrients		
		Cations																
		Ca	Mg	Na	K	Co 3	HCO 3	Cl	SO 4							Ca	Mg	K
		me / liter														mg / 100 g		
0- 3	.5										.7	.2	100.0	tr	20.5			>100
3- 21	.4										.9	.3	100.0	tr	13.0			>100
21- 42	.5										1.1	.4	100.0	tr	6.6			>100

Classification: Lithic Xerochrept; fine loamy, mixed, thermic.
Location: Damascus province, Syria. Approximately 23 km west of Damascus, 5 km northwest of Qatana, 4 km west of the road from Damascus to Qatana. Approximate coordinates 33o 28' N latitude and 36o 02' longtitude.
Physiographic Position: Steep back slopes of high hills, elevation about 1500 m.a.s.l.
Topography: Strongly sloping topography with a slope of 20 percent towards east.
Drainage: Well drained, rapid surface run-off, moderate permeability.
Parent Material: Neogene or more recent conglomerate with limestone inclusions
Sampled by: H. Yuksel and R. Rizek on Sept. 22, 1980
Soil No.: SP - 51



Hori.	Depth (cm)	Description
A1	0 - 3	Yellowish red (5 YR 5/6 d to 5 YR 4/6 m) clay loam; moderate, fine, subangular blocky structure, breaking to moderate, fine, granular structure; slightly hard (dry), firm (moist), sticky and plastic; frequent, fine, continuous, vertical, inped, open pores; frequent, subrounded to angular gravel, constituting approximately 30 percent of the horizon; few, very fine to fine roots between peds; abrupt, smooth boundary; pH 7.4
B21	3 - 21	Yellowish red (5 YR 5/6 d) to reddish brown (5 YR 4/4 m) clay loam; moderate, medium, subangular blocky structure; hard (dry), firm (moist), sticky and plastic; few, fine to medium, continuous, vertical, inped, open pores; frequent, subrounded to angular gravels constituting approximately 30 percent of the horizon; few, very fine to fine roots between peds; clear, smooth boundary; pH 7.6
B22	21 - 42	Yellowish red (5 YR 4/6 d) to reddish brown (5 YR 4/4 m) clay; moderate, medium, subangular blocky structure; hard (dry), firm (moist), sticky and plastic; frequent, fine to medium, continuous, vertical, inped, open pores; abundant, subrounded to angular gravels and stones constituting approximately 60 percent of the horizon; few, small, soft, irregular shaped pseudomycelium coatings; few, fine to medium roots, mostly between peds; diffuse broken boundary; pH 7.7
R	42+	Bedrock conglomerate and limestone.

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SOIL SERIES _____ TAXONOMY _____ SOIL No SP - 52

LOCATION _____ LAB Nos. 1598 - 1599 - 1600 - 1601 - 1602 - 1603 - 160

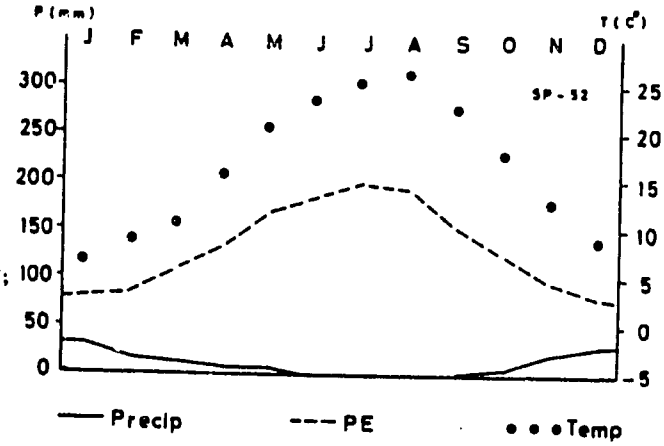
Depth (cm)	Horizon	Size Class and particle diameter (mm)																Texture class
		Total			Sand					Silt					Coarse fragments			
		Sand (2-0.05)	Silt (0.05-0.002)	Clay (<0.002)	Very coarse (2-1)	Coarse (1-0.5)	Medium (0.5-0.25)	Fine (0.25-0.1)	Very fine (0.1-0.05)	0.05-0.02	0.02-0.002				>2 % of whole soil	2-19 mm	19-76 mm	
		% of < 2 mm													% of < 76 mm			
0- 12	A11	19	25	56														C
12- 22	A12	23	32	45														C
22- 36	BA	25	30	45														C
36- 56	B21	18	19	63														C
56- 87	B22	15	20	65														C
87-106	B23	15	19	66														C
106-127	B3	17	19	64														C
127-145	C	35	24	41														C

Depth (cm)	Organic Carbon %	Nitrogen %	C / N	Est. Iron as Fe %	Carbonate as $CaCO_3$ <2 mm %	Carbonate as $CaCO_3$ <0.002 mm %	Bulk Density 1/3 bar g/cc	Bulk Density ovendry g/cc	COLE	Water Contents 1/3 bar %	Water Contents 15 bar %			pH Satur paste	pH H_2O	pH KCl
0- 12	.3				22.5	8.1				34.1	15.9				7.8	
12- 22	.3				23.0	10.2				29.8	13.7				8.0	
22- 36	.2				10.2	25.0				28.6	13.6				7.8	
36- 56	.3				8.1	25.5				36.6	17.2				7.9	
56- 87	.2				8.1	23.0				37.7	17.8				7.9	
87-106	.3				8.1	24.0				38.0	18.0				7.9	
106-127	.2				7.0	20.0				37.0	17.5				7.9	
127-145	.3				8.1	18.5				26.8	12.1				7.9	

Depth (cm)	Extractable Bases Ca	Mg	Na	K	Sum	Ext Acidity	C.E.C Sum of Cations	C.E.C NaOAc	Ext Al	Ratios to clay C.E.C	Ext Fe	15 bar water	Ca/Mg	Total Solu. Salts ppm	Base saturation Sum of Cations	Base saturation NaOAc
	me / 100 g								me / 100 g							
0- 12			1.2	4.0				36.0		.6		.3				100.0
12- 22			4.8	3.1				41.0		.9		.3				100.0
22- 36			5.3	2.4				46.0		1.0		.3				100.0
36- 56			6.0	2.4				50.0		.8		.3				100.0
56- 87			8.0	2.5				44.0		.7		.3				100.0
87-106			6.8	2.8				40.0		.6		.3				100.0
106-127			7.0	2.3				44.0		.7		.3				100.0
127-145			3.0	1.7				36.0		.9		.3				100.0

Depth (cm)	Electrical Conductivity mmho / cm	Water Extract From Saturated Paste: Cations Ca	Mg	Na	K	CO_3	HCO_3	Cl	SO_4	Water at Satur %	ESP %	SAR	CSP %	Gypsum %	Ext P_2O_5 ppm	Available Nutrients Ca	Mg	K
		me / liter														mg / 100 g		
0- 12	.5										3.3	.7	100.0	tr	12.0			>100
12- 22	.5										11.7	1.9	100.0	tr	11.2			>100
22- 36	4.2										11.5	2.1	100.0	tr	7.6			>100
36- 56	5.2										12.0	2.2	100.0	tr	7.6			>100
56- 87	9.0										18.2	2.6	100.0	tr	8.7			>100
87-106	15.0										17.0	2.4	100.0	tr	4.1			>100
106-127	12.0										15.9	2.5	100.0	tr	6.0			>100
127-145	12.0										8.3	1.5	100.0	10.9	7.0			>100

Classification: Vertic Xerochrept; very fine, mixed, thermic.
Location: Damascus province, Syria. Approximately 14 km south of Damascus, 5 km southeast of Shamaya, 500 m east of the road from Damascus to Deraa. Approximate coordinates 33o 23' N Latitude and 35o 17' E Longtitude.
Physiographic Position: Undulating piedmont plains, elevation about 750 m.a.s.l.
Topography: Moderately sloping topography with a slope of 10 percent towards south.
Drainage: Moderately well drained, rapid surface run-off; very slow permeability.
Parent Material: Quaternary or more recent colluvium derived mainly from Neogene basalt.
Sampled by: H. Yuksel and R. Rizek on Sept. 24, 1980
Soil No.: SP - 52



Hori.	Depth (cm)	Description
A11	0 - 12	Yellowish brown (7.5 YR 5/4 d) to dark brown (10 YR 4/4 m) clay; weak, medium, subangular blocky structure; approximately 1 cm wide craks extending upto 110 cm; slightly hard (dry), firm (moist), sticky and plastic; few, fine to medium, continuous, vertical, inped, open pores; few, rounded grave's constituting approximately 5 percent of the horizon; few insect nests and worm casts; common, very fine to fine roots between peds; clear, wavy boundary, pH 7.8
A12	12 - 22	Strong brown (7.5 YR 5/6 d) to dark brown (7.5 YR 4/4 m) clay; moderate, medium, subangular blocky structure; hard (dry), firm (moist) sticky and plastic; few, fine, continuous, vertical, inped, open pores; few, rounded gravels, constituting approximately 3 percent of the horizon; few, small, soft, irregular, local carbonate coatings; few, insect nests and worm casts; few, very fine roots between peds; clear, wavy boundary; pH 8.0
BA	22 - 36	Strong brown (7.5 YR 5/6 d) to dark brown (7.5 YR 4/4 m) clay; strong, medium to coarse subangular blocky structure; extremely hard (dry), very firm (moist), very sticky and very plastic; broken, thin cutanes, probably of clay minerals on horizontal and vertical ped faces; frequent, fine, discontinuous, vertical, inped, closed pores; few, very fine roots, between peds; gradual, smooth boundary; pH 7.8
B21	36 - 56	Brown (7.5 YR 5/4 d) to dark brown (7.5 YR 4/4 m) clay; strong, medium to coarse subangular blocky structure; extremely hard (dry), very firm (moist), very sticky and very plastic; patchy, thin cutanes, probably of clay minerals on horizontal and vertical ped faces; few, fine, roots, between peds, diffuse, smooth boundary; pH 7.9
B22	56 - 87	Strong brown (7.5 YR 5/6 d) and dark brown (7.5 YR 4/4 m) clay; strong, medium to coarse subangular blocky structure; extremely hard (dry), very firm (moist), very sticky and very plastic; broken, thin cutanes, probably of clay minerals on horizontal and vertical ped faces; few, fine, discontinuous, vertical, inped closed pores; clear, smooth boundary; pH 7.9
B23	87 - 106	Brown (7.5 YR 5/4 d) and dark brown (7.5 YR 4/4 m) clay; strong, medium, subangular blocky structure; extremely hard (dry), very firm (moist), very sticky and very plastic; broken, thin cutanes, probably of clay minerals on horizontal and vertical ped faces; few, very fine to fine, discontinuous, vertical, inped, vesicular, closed pores; clear, smooth boundary; pH 7.9
B3	106 - 127	Brown (7.5 YR 5/4 d) to dark brown (7.5 YR 4/4 m) clay; moderate, medium, subangular blocky structure; extremely hard (dry), very firm (moist), very sticky and very plastic; abrupt, smooth boundary; pH 7.9
C	127 - 145	Dark brown (7.5 YR 4/4 m) clay; massive; very firm (moist), sticky and plastic; frequent, large, gypsum particles; pH 7.9

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SOIL SERIES _____ TAXONOMY _____ SOIL No SP - 53

LOCATION _____ LAB Nos. 1606 - 1607 - 1608 - 1609 - 1610

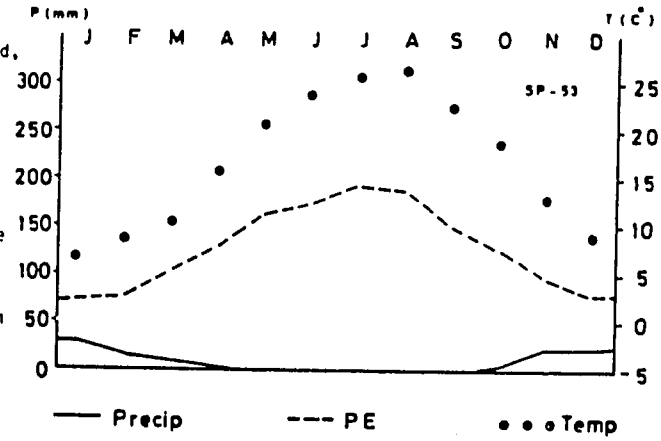
Depth (cm)	Horizon	Size Class and particle diameter (mm) — Total: Sand (2-0.05)	Total: Silt (0.05-0.002)	Total: Clay (<0.002)	Sand: Very coarse (2-1)	Sand: Coarse (1-0.5)	Sand: Medium (0.5-0.25)	Sand: Fine (0.25-0.1)	Sand: Very fine (0.1-0.05)	Silt: 0.05-0.02	Silt: 0.02-0.002	Coarse fragments: >2 % of whole soil	Coarse fragments: 2-19 % of <76 mm	Coarse fragments: 19-76 % of <76 mm	Texture class
		%, of < 2 mm													
0- 12	A11	28	30	42											C
12- 21	A12	35	31	34											CL
21- 53	A13	38	31	31											CL
53- 68	AB	26	26	48											C
68- 74	B2	36	28	36											CL

Depth (cm)	Organic Carbon %	Nitrogen %	C / N	Ext. Iron as Fe %	Carbonate as Ca Co 3 <2 mm %	Carbonate as Ca Co 3 <0.002 mm %	Bulk Density 1/3 bar g/cc	Bulk Density evendry g/cc	COLE	Water Contents 1/3 bar %	Water Contents 15 bar %	pH Satur paste	pH H_2O 1/	pH KCl 1/
0- 12	1.1				24.0	10.2				28.1	12.8		7.5	
12- 21	1.1				23.5	1.7				24.5	10.9		7.6	
21- 53	.5				22.0	8.1				23.0	10.1		7.8	
53- 68	1.4				23.5	10.2				30.4	14.0		7.5	
68- 74	.5				23.5	8.1				25.0	11.2		7.4	

Depth (cm)	Extractable Bases Ca	Mg	Na	K	Sum	Ext Acidity	C. E. C. Sum of Cations	C. E. C. Na OAc	Ext. Al me / 100 g	Ratios to clay C. E. C	Ext. Fe	15 bar water	Ca/ Mg	Total Solu. Salts ppm	Base saturation Sum of Cations %	Base saturation Na OAc %
	me / 100 g															
0- 12			.6	4.9				44.0		1.0		.3				100.0
12- 21			.3	2.1				42.0		1.2		.3				100.0
21- 53			.4	2.0				47.0		1.5		.3				100.0
53- 68			.3	1.7				51.0		1.1		.3				100.0
68- 74			.7	1.2				50.0		1.4		.3				100.0

Depth (cm)	Electrical Conductivity mmho / cm	Water Extract From Saturated Paste — Cations Ca	Mg	Na	K	CO 3	HCO 3	Cl	SO 4	Water at Satur %	ESP %	SAR	CSP %	Gypsum %	Ext P_2O_5 ppm	Available Nutrients Ca	Mg	K
		me / liter														mg / 100 g		
0- 12	1.2										1.4	.3	100.0	tr	15.0			>100
12- 21	.4										.7	.3	100.0	tr	9.5			>100
21- 53	.4										.9	.3	100.0	tr	9.5			>100
53- 68	.5										.6	.3	100.0	tr	4.8			>100
68- 74	.6										1.4	.6	100.0	tr	4.9			>100

Classification: Typic Xerochrept; fine, loamy, mixed, thermic.
Location: Damascus province, Syria. Approximately 17 km south of Damascus. 5 km southwest of Najaha village, 4 km west of the road from Damascus to Sweyda. Approximate coordinates 33o 22' N latitude and 36o 22' E longtitude.
Physiographic Position: Steep foot slopes of high hills, elevation about 750 m.a.s.l.
Topography: Moderately steep topography with a slope of 30 percent towards north.
Drainage: Well drained, rapid surface run-off, slow permeability.
Parent Material: Quaternary or more recent colluvium deposits, derived mainly from Neogene basalt.
Sampled by: H. Yuksel and R. Rizek on Sept. 24, 1980
Soil No.: SP - 53



Hori.	Depth (cm)	Description
A11	0 - 12	Yellowish brown (10 YR 5/4 d) to dark yellowish brown (10 YR 4/4 m) clay; moderate, medium, subangular blocky structure, breaking to moderate, medium, granular structure; hard (dry), firm (moist), sticky and plastic; frequent, fine, discontinuous, random, inped, closed pores; abundant, rounded to surounded gravels, constituting approximately 40 percent of the horizon; some insect nests and worm casts; common, very fine to fine roots between peds; clear, smooth boundary; pH 7.5
A12	12 - 21	Yellowish brown (10 YR 5/4 d) to dark brown (10 YR 4/4 m) clay loam; weak, medium, subangular blocky structure, breaking to weak, medium, granular structure; hard (dry), firm (moist), sticky and plastic; few, fine to fine medium, discontinuous, random, inped, closed pores; abundant, rounded to surounded gravels, constituting approximately 45 percent of the horizon; some insect nests and worm casts; few, fine to very fine roots between peds; clear smooth boundary; pH 7.6
A13	21 - 53	Yellowish brown (10 YR 5/4 d) to dark yellowish brown (10 YR 4/4 m) clay loam; moderate, medium, subangular blocky structure; hard (dry), firm (moist), sticky and plastic; few, medium to coarse, continuous, vertical, inped, open pores; abundant, rounded to subrounded gravels and stones constituting approximately 40 percent of the horizon; few, irregular shaped soft powder form of carbonates; few, insect nests, few, very fine to fine roots, between peds; gradual smooth boundary; pH 7.8
A B	53 - 68	Dark yellowish brown (10 YR 4/4 d) to dark brown (10 YR 4/3 m) clay; moderate, medium, subangular blocky structure; hard (dry), firm (moist), sticky and plastic; few, fine to medium, discontinuous, vertical, inped, irregular closed pores; abundant, rounded to subrounded gravels and stones, constituting approximately 50 percent of the horizon; few, small, irregular, shaped soft powder form of carbonates; few, very fine to fine roots between peds; gradual, smooth boundary; pH 7.5
B2	68 - 74	Dark brown (10 YR 4/3 m) clay; weak, medium, subangular blocky structure; hard (dry), firm (moist), sticky and plastic; few, fine, discontinuous, vertical, inped, irregular, closed pores; abundant, rounded to surounded gravels and stones, constituting approximately 50 percent of the horizon; few, small, irregular, localized soft powder of carbonates; few, very fine to fine roots between peds; clear, smooth boundary; pH 7.4
C	74+	Dark brown (10 YR 4/3 m) clay; massive; very firm (moist), sticky and plastic, dominant rounded to subrounded gravels and stones constituting approximately 80 percent of the horizon; few, small, irregular, localized soft powder of carbonates.

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SOIL SERIES _____ TAXONOMY _____ SOIL No SP - 24

LOCATION _____ LAB Nos. 1602 - 1603 - 1604 - 1615 - 1616 - 1617

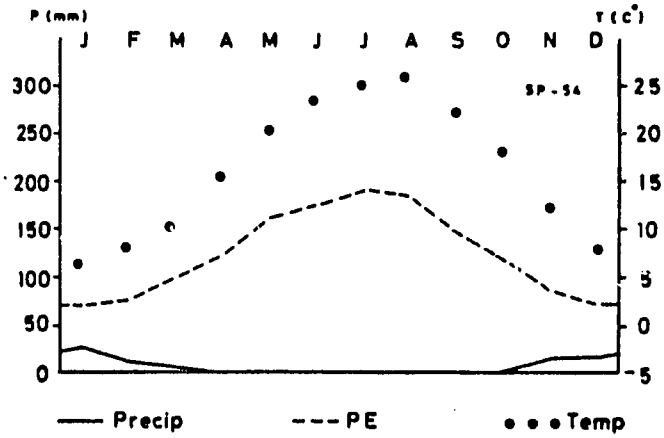
Depth (cm)	Horizon	Size Class and particle diameter (mm) — Total: Sand (2-0.05)	Total: Silt (0.05-0.002)	Total: Clay (<0.002)	Sand: Very coarse (2 - 1)	Sand: Coarse (1 - 0.5)	Sand: Medium (0.5 - 0.25)	Sand: Fine (0.25 - 0.1)	Sand: Very fine (0.1 - 0.05)	Silt: 0.05 - 0.02	Silt: 0.02 - 0.002				Coarse fragments: >2 mm % of whole soil	Coarse fragments: 2 - 19 mm % of < 6 mm	Coarse fragments: 19-76 mm % of < 6 mm	Texture class
		% of < 2 mm																
0- 16	AP	21	33	46														C
16- 30	A1	37	19	44														C
30- 68	B21	31	29	40														CL
68- 84	B22	nd	nd	nd														
84-110	B3	23	23	54														C
110+	C	20	40	40														CL

Depth (cm)	Organic Carbon %	Nitrogen %	C / N	Ext Iron as Fe %	Carbonate as $CaCO_3$ < 2 mm %	Carbonate as $CaCO_3$ < 0.002 mm %	Bulk Density 1/3 bar g / cc	Bulk Density ovendry g / cc	COLE	Water Contents 1/3 bar %	Water Contents 15 bar %			pH Satur. paste	pH H_2O	pH KCl
0- 16	.4				27.0	6.0				30.5	14.0				7.3	
16- 30	.4				28.2	6.0				27.5	12.5				7.5	
30- 68	.3				28.5	8.1				27.0	12.2				7.7	
68- 84																
84-110	.4				72.0	6.0				32.8	15.3				7.3	
110+	.2				28.0	8.1				28.6	13.1				7.1	

Depth (cm)	Extractable Bases Ca	Mg	Na	K	Sum (me / 100 g)	Ext Acidity	C. E. C. Sum of Cations	C. E. C. Na OAc		Ext. Al me / 100 g	Ratios to clay C. E. C	Ratios to clay Ext. Fe	Ratios to clay 15 bar water	Ca/ Mg	Total Solu. Salts ppm		Base saturation Sum of Cations %	Base saturation NaOAc %
0- 16			.5	4.9				47.0			1.0		.3					100.0
16- 30			.9	3.8				46.0			1.0		.3					100.0
30- 68			3.7	2.5				46.0			1.2		.3					100.0
68- 84																		
84-110			4.2	2.0				44.0			.8		.3					100.0
110+			2.5	2.2				46.0			1.2		.3					100.0

Depth (cm)	Electrical Conductivity mmho / cm	Water Extract From Saturated Paste — Cations: Ca (me / liter)	Mg	Na	K	CO_3	HCO_3	Cl	SO_4	Water at Satur %	ESP %	SAR	CSP %	Gypsum %	Ext P_2O_5 ppm	Available Nutrients Ca (mg / 100 g)	Mg	K
0- 16	.4										1.1	.3	100.0	tr	14.2			>100
16- 30	.4										2.0	.5	100.0	tr	10.0			>100
30- 68	.6										8.0	1.7	100.0	tr	9.8			>100
68- 84													100.0					
84-110	4.0										9.5	1.8	100.0	tr	3.5			>100
110+	5.7										5.4	1.3	100.0	tr	4.0			>100

Classification: Typic Xerochrept; fine, mixed, thermic.
Location: Damascus province, Syria. Approximately 27 km South of Damascus, 10 km West of Deir Ali, 300 m West of the road from Damascus to Deraa. Approximate coordinates 33o 18' N Latitude and 36o 13' E longtitude.
Physiographic Position: Plains elevation about 1900m.a.s.l.
Topography: Level topography with a slope of less than 2 percent towards south.
Drainage: Well drained, slow surface run-off, slow permeability.
Parent Material: Neogene basalt.
Sampled by: H. Yuksel and R. Rizek on Sept. 24, 1980
Soil No.: SP - 54



Hori.	Depth (cm)	Description
Ap	0 - 16	Strong brown (7.5 YR 5/6 d) to dark brown (7.5 YR 4/4 m) clay; weak, medium, subangular blocky structure breaking to weak, medium, granular structure; approximately 1 cm wide craks extending uplo 60 cm; hard (dry), firm (moist), sticky and plastic; many fine to medium, continuous, vertical, inped, open pores; few rounded gravels constituting approximately 5 percent of the horizon; some insect nests and worm casts; common, very fine to fine rocts inside and between peds; clear, smooth boundary, pH 7.3
A1	16 - 30	Yellowish red (5 YR 4/8 d to 5 YR 4/6 m) clay; moderate, medium, subangular blocky structure; slightly hard (dry), firm(moist), sticky and plastic; frequent, fine, continuous, vertical, inped, open pores; few, insect nests and worm casts; common, very fine to fine roots inside and between peds; clear, smooth boundary; pH 7.5
B21	30 - 58	Yellowish red (5 YR 4/8 d to 5YR 4/6 m) clay loam; strong, medium, subangular, blocky structure; hard(dry), firm (moist), sticky and plastic; continuous, moderately thick cutanes, probably of clay minerals on horizontal and vertical ped faces; few, fine, continuous, vertical, open pores; few, small, soft, irregular, local carbonate coatings on ped faces; few, insect nests and worm casts; common, very fine roots between peds; gradual smooth boundary; pH 7.7
B22	58 - 84	Reddish brown (5 YR 4/4 m) clay; strong, coarse to medium, subangular blocky structure; firm (moist), very sticky and very plastic; continuous, moderately thick cutanes probably of clay minerals on horizontal and vertical ped faces; few, small, soft, irregular local carbonate coatings on ped faces; few, very fine roots between peds; gradual, smooth boundary; pH 7.7
B 3	84 - 110	Yellowish red (5 YR 4/6 m) clay; moderate, coarse, subangular blocky structure; firm (moist), very sticky and very plastic; continuous, thin cutanes, probably of clay minerals on horizontal and vertical ped faces; few, very fine to fine continuous, vertical, open pores; few, small, soft, irregular, local carbonate coatings on ped faces; very fine roots mostly between peds; clear, smooth boundary, pH 7.3
C	110+	Yellowish-red (5 YR 4/6 m) clay to clay loam; moderate, medium subangular blocky structure; very firm (moist), very sticky and very plastic; few, very fine, discontinous, vertical, closed pores; frequent, large, soft, irregular, gravel carbonate coatings on ped faces; pH 7.1

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SOIL SERIES _____ TAXONOMY _____ SOIL No SP - 55

LOCATION _____ LAB Nos. 1618 - 1619

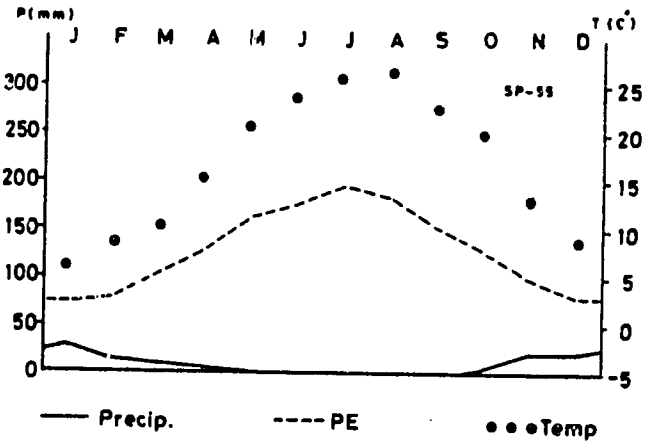
Depth (cm)	Horizon	Size Class and particle diameter (mm)																
		Total			Sand					Silt					Coarse fragments			Texture class
		Sand (2-0.05)	Silt (0.05-0.002)	Clay (<0.002)	Very coarse (2-1)	Coarse (1-0.5)	Medium (0.5-0.25)	Fine (0.25-0.1)	Very fine (0.1-0.05)	0.05-0.02	0.02-0.002				>2 % of whole soil	2-19 %	19-76 %	
		%, of < 2 mm													of <76 mm			
0-13	A11	27	29	44														CL
13-31	A12	31	36	33														CL

Depth (cm)	Organic Carbon %	Nitrogen %	C / N	Ext Iron as Fe %	Carbonate as Ca Co 3		Bulk Density			COLE	Water Contents				pH		
					< 2 mm	< 0.002 mm	1/3 bar	ovendry			1/3 bar	15 bar			Satur paste	H_2O	K Cl
					%,		g / cc				%,						
0-13	1.7				15.0	5.0					28.9	13.2				7.5	
13-31	1.4				20.5	9.0					24.7	11.0				7.4	

Depth (cm)	Extractable Bases					Ext Acidity	C. E. C.			Ext. Al me / 100 g	Ratio to clay			Ca / Mg	Total Solu. Salts ppm		Base saturation	
	Ca	Mg	Na	K	Sum		Sum of Cations	Na OAc			C. E. C	Ext. Fe	15 bar water				Sum of Cations	Na OAc
	me / 100 g																%	
0-13			.4	1.7				50.0			1.1		.3					100.0
13-31			.4	.7				66.0			2.0		.3					100.0

Depth (cm)	Electrical Conductivity mmho / cm	Water Extract From Saturated Paste								Water at Satur %	ESP %	SAR	CSP %	Gypsum %	Ext P_2O_5 ppm	Available Nutrients		
		Cations																
		Ca	Mg	Na	K	CO 3	HCO 3	Cl	SO 4							Ca	Mg	K
		me / liter														mg / 100 g		
0-13	.4										.7	.3	100.0		6.0			>100
13-31	.3										.6	.5	100.0		3.2			64.2

Classification: Lithic Xerorthent; fine loamy, mixed, thermic.
Location: Damascus province, Syria. Approximately 32 km south of Damascus, 22 km northwest of Deir Ali, 100 m east of the road from Damascus to Deraa. Approximate coordinates 33o14' N latitude and 36o16' E longtitude.
Physiographic Position: Steep side slopes of undulating basalt plateaus, elevation approximately 500 m a.s.l.e.
Drainage: Well drained, very rapid surface run-off, moderate slow permeability.
Parent Material: Neogene or younger basalt.
Sampled by: H. Yuksel and R. Rizek on Sept. 26, 1980
Soil No.: SP - 55



Hori.	Depth (cm)	Description
A11	0 - 13	Strong brown (7.5 YR 5/6 d) to dark brown (7.5 YR 4/4 m) clay; weak, fine, subangular blocky structure breaking to granular structure; moderate, fine, slightly hard (dry), firm (moist), sticky and plastic; many, fine to medium, continuous, vertical, open pores; few, angular gravels, constituting approximately 10 percent of the horizon; few, insect nests; many, very fine to fine roots, inside and between peds; clear, smooth boundary; pH 7.5
A12	13 - 31	Strong brown (7.5 YR 5/6 d) to dark brown (7.5 YR 4/4 m) clay loam; moderate, fine, subangular blocky structure; hard (dry), firm (moist), sticky and slightly plastic; frequent, fine to medium, continuous, vertical, open pores; few, angular gravels, constituting approximately 5 percent of the horizon; few insect nests, common, very fine to fine roots inside and between peds; abrupt, broken boundary; pH 7.4
R	31+	Neogene basalt.

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DEPARTMENT OF SOIL SURVEY

SOIL SERIES _____ TAXONOMY _____ SOIL No SP - 56

LOCATION _____ LAB Nos. 1620 - 1621 - 1622 - 1623 - 1624 - 1625 - 162

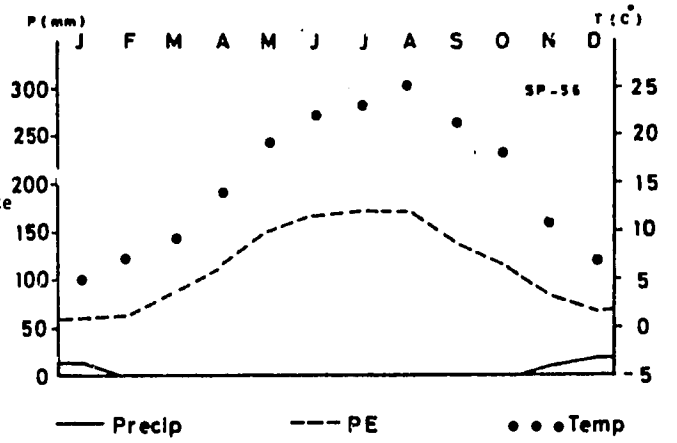
Depth (cm)	Horizon	Size Class and particle diameter (mm) — Total: Sand (2-0.05)	Silt (0.05-0.002)	Clay (<0.002)	Sand: Very coarse (2-1)	Coarse (1-0.5)	Medium (0.5-0.25)	Fine (0.25-0.1)	Very fine (0.1-0.05)	Silt: 0.05-0.02	0.02-0.002	Coarse fragments: >2 % of whole soil	2-19%	19-76 %	Texture class
		% of < 2 mm											of <76 mm		
0- 12	AP	8	32	60											C
12- 56	B21	12	33	55											C
56- 71	B22	10	28	62											C
71- 93	B23	10	52	38											SiCL
93-117	B3	28	26	46											C
117-134	C1	8	26	66											C
134-155	C2	15	23	62											C

Depth (cm)	Organic Carbon %	Nitrogen %	C / N	Ext. Iron as Fe %	Carbonate as $CaCO_3$ <2 mm %	<0.002 mm %	Bulk Density 1/3 bar g/cc	Ovendry g/cc	COLE	Water Contents 1/3 bar %	15 bar %	pH Satur. paste	H_2O	KCl
0- 12	1.8				41.0	21.0				37.0	17.5		7.5	
12- 56	.8				38.0	20.0				34.8	16.3		7.4	
56- 71	.6				38.0	22.0				37.4	17.7		7.6	
71- 93	.6				38.5	19.0				29.4	13.5		7.8	
93-117	1.1				36.0	20.0				29.5	13.5		7.8	
117-134	.5				33.5	17.0				39.0	18.5		7.7	
134-155	.4				31.5	15.0				36.7	17.3		7.8	

Depth (cm)	Extractable Bases (me / 100 g) Ca	Mg	Na	K	Sum	Ext Acidity	C. E. C. Sum of Cations	Na OAc	Ext Al me / 100 g	Ratios to clay C. E. C	Ext. Fe	15 bar water	Ca / Mg	Total Solu. Salts ppm	Base saturation Sum of Cations %	Na OAc
0- 12			5.0	2.4				30.0		.5		.3				100.0
12- 56			5.0	1.9				28.0		.5		.3				100.0
56- 71			5.0	1.7				28.0		.5		.3				100.0
71- 93			5.0	1.7				28.0		.7		.4				100.0
93-117			6.2	2.3				34.0		.7		.3				100.0
117-134			5.5	2.3				36.0		.5		.3				100.0
134-155			5.0	2.4				28.0		.5		.3				100.0

Depth (cm)	Electrical Conductivity mmho / cm	Water Extract From Saturated Paste — Cations (me / liter) Ca	Mg	Na	K	CO_3	HCO_3	Cl	SO_4	Water at Satur %	ESP %	SAR	CSP %	Gypsum %	Ext P_2O_5 ppm	Available Nutrients (mg / 100 g) Ca	Mg	K
0- 12	27.0										16.7	2.0	100.0	tr	10.5			>100
12- 56	29.0										17.9	2.0	100.0	tr	8.2			>100
56- 71	27.0										17.9	2.1	100.0	tr	11.2			>100
71- 93	25.0										17.9	2.1	100.0	tr	7.2			>100
93-117	22.0										18.2	2.3	100.0	tr	7.9			>100
117-134	23.0										15.3	2.1	100.0	tr	6.2			>100
134-155	25.0										17.9	2.0	100.0	tr	9.0			>100

Classification: Typic Calciorthids, fine, mixed, thermic.
Location: Damascus province, Syria. Approximately 32 km northeast of Damascus, 6 km west of Doumayr, 20 m. north of the Damascus-Baghdad highway.
Physiographic Position: Gently undulating plains. Elevation about 540 m.a.s.l.
Topography: Level Topography with a slope of 1 percent.
Drainage: Well drained, very slow surface run-off, moderate permeability.
Vegetation: Non-irrigated land.
Parent Material: Quaternary or more recent alluvium and colluvium.
Sampled by: H. Yuksel and R. Rizek on 25.9.1980.
Soil No.: SP-56



Hori.	Depth (cm)	Description
Ap	0 - 17	Yellowish brown (10 YR 5/6 m) to yellow (10 YR 7/6 d) clay; weak, fine, subangular blocky structure, breaking to weak, fine granular structure; hard (dry), friable (moist), sticky and plastic; many, fine to medium, continuous, vertical, inped, tubular, open pores; some insect nests and worm casts; common very fine to fine roots between peds; abrupt wavy boundary; pH 7.5
B21	17 - 56	Yellowish brown (10 YR 5/6 m) clay; weak, fine, subangular blocky structure; hard (dry), firm (moist), sticky and plastic; frequent, fine to medium, continuous, vertical, inped, tubular, open pores; few worm casts; few, very fine roots between peds; gradual wavy boundary; pH 7.4
B22	56-71	Strong brown (7.5 YR 5/6 m) clay; moderate, fine, subangular blocky structure, friable (moist), sticky and plastic; few, fine, discontinuous, vertical, inped, tubular, closed pores; few, small, soft, irregular, local carbonates coatings; few, gypsum powder; few, very fine roots between peds; gradual wavy boundary; pH 7.6
B23	71 - 93	Strong brown (7.5 YR 5/6 m) silty clay loam; moderate, medium subangular blocky structure; firm (moist), sticky and plastic, few, fine, discontinuous, vertical, inped, tubular, closed pores; few, small, soft, irregular local carbonates coatings; few gypsum needles; few very fine roots between peds; clear, wavy boundary, pH 7.8
B3	93 - 117	Strong brown (7.5 YR 5/6 m) clay; moderate, medium, subangular blocky structure, firm (moist), sticky and plastic; few, fine, discontinuous, vertical, inped, tubular, closed pores; few, small soft carbonates coatings; few, small, gypsum crystals, gradual, wavy boundary; pH 7.6
C1	117 - 134	Brown (7.5 YR 5/5 m) clay; weak, medium, subangular blocky structure; firm (moist), sticky and plastic; few, very fine to fine discontinuous, vertical, inped, tubular, closed pores; few, small, soft carbonates powder; few gypsum crystals; gradual wavy boundary, pH 7.7
C2	134 - 155	Dark brown to brown (7.5 YR 4/4 m) clay; weak, medium, subangular blocky structure; firms (moist), sticky and plastic; few, very fine, discontinuous, vertical, inped, tubular, closed pores; few, small, soft carbonate powder; few, small gypsum crystal, pH 7.8

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SOIL SERIES _____ TAXONOMY : _____ SOIL No SP - 37

LOCATION _____ LAB Nos. 1627 - 1628 - 1629 - 1630 - 1631 - 1632

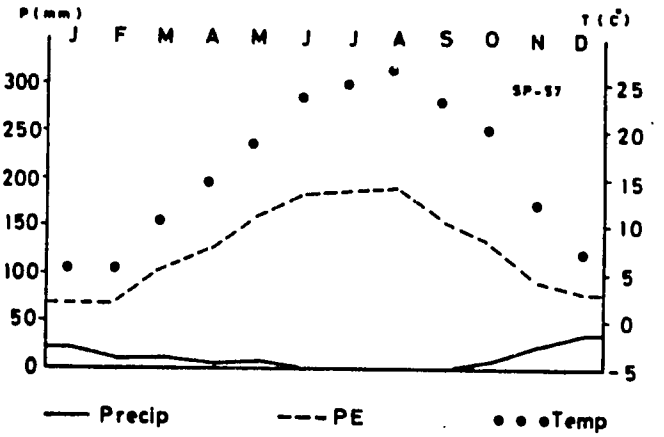
Depth (cm)	Horizon	Size Class and particle diameter (mm) — Total: Sand (2-0.05)	Total: Silt (0.05-0.002)	Total: Clay (<0.002)	Sand: Very coarse (2-1)	Sand: Coarse (1-0.5)	Sand: Medium (0.5-0.25)	Sand: Fine (0.25-0.1)	Sand: Very fine (0.1-0.05)	Silt: 0.05-0.02	Silt: 0.02-0.002	Coarse fragments: >2 % of whole soil	Coarse fragments: 2-19 % of <76 mm	Coarse fragments: 19-76 % of <76 mm	Texture class
		% of < 2 mm													
0- 9	A1	59	19	22											SCL
9- 20	B1	57	21	22											SCL
20- 46	B21	53	21	26											SCL
46- 90	B22	11	25	64											C
90-120	B3	nd	nd	nd											
120-150	C	27	16	57											C

Depth (cm)	Organic Carbon %	Nitrogen %	C / N	Ext. Iron as Fe %	Carbonate as $CaCO_3$ <2 mm %	Carbonate as $CaCO_3$ <0.002 mm %	Bulk Density 1/3 bar g/cc	Bulk Density ovendry g/cc	COLE	Water Contents 1/3 bar %	Water Contents 15 bar %	pH Satur. paste	pH H_2O	pH KCl
0- 9	.9				48.0	9.0				17.0	7.0		7.9	
9- 20	.8				46.0	12.0				17.3	7.1		7.7	
20- 46	.5				46.0	12.0				19.2	8.1		7.9	
46- 90	.3				58.0	15.0				37.9	17.9		7.4	
90-120	.3				43.5	15.0							7.5	
120-150	.4				31.0	10.0				33.3	15.5		7.6	

Depth (cm)	Extractable Bases Ca (me / 100 g)	Mg	Na	K	Sum	Ext Acidity	C. E. C. Sum of Cations	C. E. C. Na OAc	Ext. Al me / 100 g	Ratios to clay C. E. C	Ext. Fe	15 bar water	Ca/ Mg	Total Solu. Salts ppm	Base saturation Sum of Cations %	Base saturation Na OAc %
0- 9			.3	1.0				20.0		.9		.3				100.0
9- 20			.2	.9				20.0		.9		.3				100.0
20- 46			.8	.9				22.0		.8		.3				100.0
46- 90			1.5	.2				18.0		.3		.3				100.0
90-120			1.5	.2				26.0								100.0
120-150			2.2	.3				32.0		.6		.3				100.0

Depth (cm)	Electrical Conductivity mmho / cm	Water Extract From Saturated Paste — Cations Ca (me / liter)	Mg	Na	K	CO_3	HCO_3	Cl	SO_4	Water at Satur %	ESP %	SAR	CSP %	Gypsum %	Ext P_2O_5 ppm	Available Nutrients Ca (mg / 100 g)	Mg	K
0- 9	.8										1.5	.3	100.0		10.0			94.4
9- 20	.7										1.0	.2	100.0	tr	7.0			85.0
20- 46	.8										3.6	.7	100.0	tr	6.0			85.0
46- 90	10.0										8.3	1.2	100.0	tr	7.0			18.9
90-120	7.8										5.8	1.2	100.0	tr	6.5			18.9
120-150	2.4										6.9	1.4	100.0	tr	8.0			28.3

Classification: Typic Calciorthids, fine loamy, mixed, Thermic.
Location: Damascus province, Syria. Approximately 52 km northeast of Damascus, 16 km southwest of Doumayr, 5 km south of Damascus-Baghdad highway.
Physiographic Position: Foot slopes of piedmont plains, elevation about 726 m.a.s.l.
Topography: Moderately sloping topography with a slope of 10 percent towards west.
Drainage: Well drained, medium to rapid surface run-off, moderate permeability.
Vegetation: Range land.
Parent Material: Neogene basalt.
Sampled by: H. Yuksel and R. Rizek on Sept. 25, 1980
Soil No.: SP - 57



Hori.	Depth (cm)	Description
A1	0 - 9	Yellowish brown (10 YR 5/6 m) to light yellowish brown (10 YR 6/4 d) sandy clay loam; weak, medium, subangular blocky structure, breaking to weak, fine granular structure; slightly hard (dry), friable (moist), slightly sticky and slightly plastic; many, fine, continuous, vertical, inped, vesicular, open pores; few, insect nests and worm casts; common, fine and few medium roots between peds; abrupt wavy boundary; pH 7.9
B1	9 - 20	Yellowish brown (10 YR 5/6 m) to light yellowish brown (10 YR 6/4 d) sandy clay loam; weak, medium, subangular blocky structure; slightly hard (dry), friable (moist), slightly sticky and slightly plastic; few, fine, continuous, vertical, inped, open pores; few subrounded gravels constituting approximately 5 percent of the horizon; few, small, soft powder of carbonate coatings; few insect nests and worm casts; few, fine to medium roots between peds; clear wavy boundary; pH 7.7
B21	20 - 46	Yellowish brown (10 YR 5/6 m) to brownish yellow (10 YR 6/6 d) sandy clay loam; moderate, medium, subangular blocky structure; slightly hard (dry), friable (moist), slightly sticky and slightly plastic; few, fine, discontinuous, vertical, inped, closed pores; few subrounded gravels, constituting approximately 15 percent of the horizon; few, small, soft, soft powder of carbonate coatings; few, very fine roots between peds; abrupt wavy boundary; pH 7.9
B22	46 - 90	Yellowish brown (10 YR 5/6 m) clay; moderate, medium, subangular blocky structure; slightly hard (dry), friable (moist), sticky and plastic; few, fine, discontinuous, vertical, inped, closed pores; abundant, large, soft, soft powder of carbonate coatings; clear, wavy boundary; pH 7.4
B3	90 - 120	Strong brown (7.5 YR 5/6 m) clay loam; moderate, medium, subangular blocky structure; slightly hard (dry), friable (moist), sticky and plastic; few, fine, discontinuous, vertical, inped, closed pores; abundant, large, soft carbonate coatings on ped surfaces; clear wavy boundary; pH 7.5
C	120+	Strong brown (7.5 YR 5/6 m) silty clay loam; weak, medium, subangular blocky structure; slightly hard (dry), friable (moist), slightly sticky and slightly plastic; few, small, soft, soft powder of carbonate accumulations on ped surfaces; pH 7.6

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SOIL SERIES _____ TAXONOMY _____ SOIL No SP - 58

LOCATION _____ LAB Nos 1633 - 1634

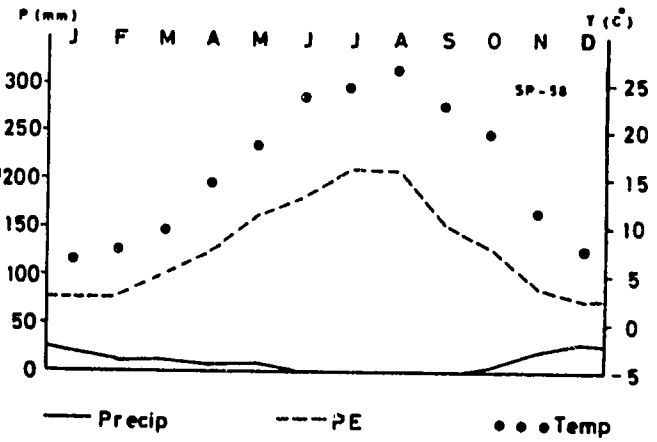
Depth (cm)	Horizon	Size Class and particle diameter (mm) — Total: Sand (2-0.05)	Total: Silt (0.05-0.002)	Total: Clay (<0.002)	Sand: Very coarse (2-1)	Sand: Coarse (1-0.5)	Sand: Medium (0.5-0.25)	Sand: Fine (0.25-0.1)	Sand: Very fine (0.1-0.05)	Silt: 0.05-0.02	Silt: 0.02-0.002	Coarse fragments >2 % of whole soil	Coarse fragments 2-19 % of <76 mm	Coarse fragments 19-76 % of <76 mm	Texture class
		% of < 2 mm													
0- 11	A1	61	17	22											SCL
11- 38	C	57	18	25											SCL

Depth (cm)	Organic Carbon %	Nitrogen %	C / N	Ext. Iron as Fe %	Carbonate as $CaCO_3$ <2 mm %	Carbonate as $CaCO_3$ <0.002 mm %	Bulk Density 1/3 bar g/cc	Bulk Density ovendry g/cc	COLE	Water Contents 1/3 bar %	Water Contents 15 bar %	pH Satur. paste	pH H_2O	pH KCl
0- 11	.7				47.0	10.0				16.7	6.8		7.3	
11- 38	1.5				48.5	12.0				18.3	7.7		7.4	

Depth (cm)	Extractable Bases Ca (me/100 g)	Mg	Na	K	Sum	Ext. Acidity	C.E.C. Sum of Cations	C.E.C. Na OAc	Ext. Al me/100 g	Ratios to clay C.E.C	Ext. Fe	15 bar water	Ca/Mg	Total Solu. Salts ppm	Base saturation Sum of Cations %	Base saturation Na OAc %
0- 11			.2	.8				24.0		1.1		.3				100.0
11- 38			.3	.4				22.0		.9		.3				100.0

Depth (cm)	Electrical Conductivity mmho/cm	Water Extract From Saturated Paste — Cations: Ca (me/liter)	Mg	Na	K	CO_3	HCO_3	Cl	SO_4	Water at Satur. %	ESP %	SAR	CSP %	Gypsum %	Ext. P_2O_5 ppm	Available Nutrients Ca (mg/100 g)	Mg	K
0- 11	.5										.8	.3	100.0		10.0			79.5
11- 38	.6										1.4	.4	100.0		7.0			37.8

Classification: Lithic Torriorthents, fine loamy, mixed, thermic.
Location: Damascus province, Syria. Approximately 54 km northeast of Damascus, 18 km southeast of Doumayr, 6 km south of Damascus-Baghdad highway.
Physiographic Position: Gently rolling plateaus; elevation about 750 m.s.a.l.
Topography: Moderately sloping topography with a slope of 8 percent towards north.
Drainage: Well drained, medium surface run-off, moderate permeability.
Vegetation: Range land.
Parent Material: Neogene basalt
Sampled by: H. Yuksel and R. Rizek on Sept. 25, 1980
Soil No.: SP - 58



Hori.	Depth (cm)	Description
A1	0 - 11	Yellowish brown (10 YR 5/6 m) to light yellowish brown (10 YR 6/4 d) sandy clay loam; weak, fine, subangular blocky structure breaking to weak, fine, granular structure; slightly hard (dry), friable (moist), slightly sticky and slightly plastic; frequent, fine, continuous, vertical inped, open pores; few, subrounded gravels constituting approximately 5 percent of the horizon; common, very fine to fine roots between peds; abrupt, smooth boundary; pH 7.3
C	11 - 38	Yellowish brown (10 YR 5/6 m) to light yellowish brown (10 YR 6/4 d) sandy clay loam; slightly hard (dry), friable (moist), slightly sticky and slightly plastic; few, fine, continuous, vertical, inped, open pores; frequent, large, soft, powder of carbonate coatings on ped faces; few, very fine roots between peds; clear, broken boundary; pH 7.4
R	38 +	Bedrock

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SOIL SERIES _____ TAXONOMY _____ SOIL No SP - 59

LOCATION _____ LAB Nos. 1635 - 1636 - 1637 - 1638 - 1639

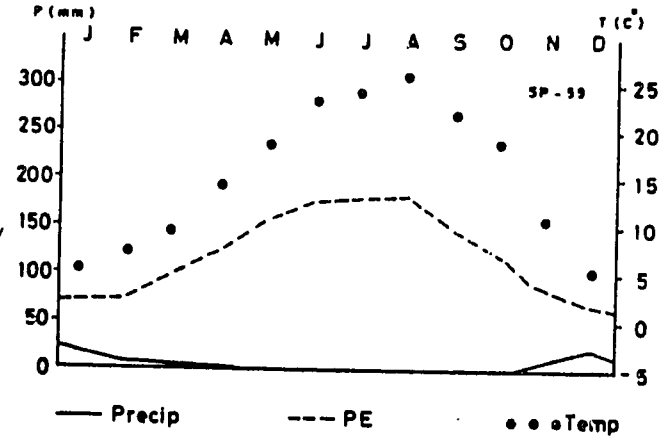
Depth (cm)	Horizon	Size Class and particle diameter (mm) — Total: Sand (2-0.05)	Silt (0.05-0.002)	Clay (<0.002)	Sand: Very coarse (2-1)	Coarse (1-0.5)	Medium (0.5-0.25)	Fine (0.25-0.1)	Very fine (0.1-0.05)	Silt: 0.05-0.02	0.02-0.002	Coarse fragments: >2 % of whole soil	2-19 % of <76 mm	19-76 % of <76 mm	Texture class
		% of < 2 mm													
0- 18	A1	53	31	16											SL
18- 34	CA	63	15	22											SCL
34- 82	C1	60	15	25											SCL
82-123	C2ca	43	19	38											CL
123-166	C3ca	43	17	40											CL

Depth (cm)	Organic Carbon %	Nitrogen %	C / N	Ext Iron as Fe %	Carbonate as Ca Co 3 < 2 mm %	Carbonate as Ca Co 3 < 0.002 mm %	Bulk Density 1/3 bar g/cc	Bulk Density ovendry g/cc	COLE	Water Contents 1/3 bar %	Water Contents 15 bar %	pH Satur paste	pH H_2O	pH KCl
0- 18	1.2				50.5	11.0				15.9	6.4		7.2	
18- 34	.8				61.0	11.0				16.4	6.7		7.4	
34- 82	.6				59.0	13.0				17.8	7.4		7.3	
82-123	.4				63.0	12.0				24.6	11.0		7.2	
123-166	.3				63.0	14.0				25.3	11.3		7.2	

Depth (cm)	Extractable Bases me / 100 g: Ca	Mg	Na	K	Sum	Ext Acidity	C.E.C. Sum of Cations	C.E.C. Na OAc	Ext. Al me / 100 g	Ratios to clay: C.E.C	Ext. Fe	15 bar water	Ca / Mg	Total Solu. Salts ppm	Base saturation: Sum of Cations %	Base saturation: NaOAc %
0- 18			tr	.6				22.0		1.4		.4				100.0
18- 34			.2	.3				18.0		.8		.3				100.0
34- 82			.2	.4				16.0		.6		.3				100.0
82-123			1.0	.2				20.0		.5		.3				100.0
123-166			2.0	.1				16.0		.4		.3				100.0

Depth (cm)	Electrical Conductivity mmho / cm	Water Extract From Saturated Paste — Cations me / liter: Ca	Mg	Na	K	CO 3	HCO 3	Cl	SO 4	Water at Satur %	ESP %	SAR	CSP %	Gypsum %	Ext P_2O_5 ppm	Available Nutrients mg / 100 g: Ca	Mg	K
0- 18	.6										tr	tr	100.0		14.6			56.6
18- 34	1.0										1.1	.3	100.0		16.0			28.3
34- 82	1.2										1.3	.3	100.0		13.7			37.8
82-123	.5										5.0	1.0	100.0		0.0			18.9
123-166	.5										12.5	1.4	100.0		8.2			9.4

Classification: Typic Torriorthents, fragmental, mixed, thermic.
Location: Damascus province, Syria. Approximately 41 km northeast of Damascus, 4 km east of Doumayr, 20 m north of Damascus-Baghdad highway.
Physiographic Position: Alluvial fans, elevation about 1000 m.a.s.l.
Topography: Moderately sloping topography with a slope of 15 percent towards southwest
Drainage: Well drained, rapid surface run-off, moderately rapid permeability.
Vegetation: Range land.
Parent Material: Quaternary or more recent alluvial fan deposits derived from Paleogene limestone.
Sampled by: H. Yuksel and R. Rizek on Sept. 25, 1980
Soil No.: SP - 59



Hori.	Depth (cm)	Description
A 1	0 - 18	Light brown (7.5 YR 6/4 m) to strong brown (7.5 YR 5/6 d) sandy loam; weak, medium subangular blocky structure; slightly hard (dry), friable (moist), slightly sticky and slightly plastic; frequent, fine to medium, continuous, vertical, inped, open pores; few, rounded to subrounded gravels constituting approximately 5 percent of the horizon, few, very fine to fine roots between peds; abrupt, wavy boundary; pH 7.2
CA	18 - 34	Yellowish brown (10 YR 5/6 m) to very pale brown (10 YR 7/4 d) sandy clay loam; structureless; slightly hard (dry), friable (moist), slightly sticky and slightly plastic; abundant rounded to subrounded gravels and stones, constituting approximately 85 percent of the horizon; few, very fine, roots, between peds; gradual wavy boundary, pH 7.4
C1	34 - 82	Yellowish brown (10 YR 5/6 m) to very pale brown (10 YR 7/4 d) sandy clay loam; structureless; slightly hard (dry), friable (moist), slightly sticky and slightly plastic; dominant, rounded to subrounded gravels and stones, constituting approximately 90 percent of the horizon; few, very fine roots, between peds; clear, wavy boundary; pH 7.3
C2 ca	82 - 123	Yellowish brown (10 YR 5/4 m) to brownish yellow (10 YR 6/6 d) clay loam; structureless; slightly hard (dry), firm (moist), sticky and plastic; abundant, rounded to subrounded gravels constituting approximately 60 percent of the horizon; abundant, large, soft, carbonates coatings; diffuse, wavy boundary; pH 7.2
C3 ca	123 - 166	Brownish yellow (10 YR 6/6 d) clay loam, structureless; slightly hard (dry), firm (moist), sticky and plastic; abundant rounded to subrounded gravels constituting approximately 70 percent of the horizon; abundant, large, soft, carbonate coatings; pH 7.2

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SOIL SERIES _____ TAXONOMY _____ SOIL No SP - 60

LOCATION _____ LAB Nos. 1640 - 1641 - 1642 - 1643 - 1644

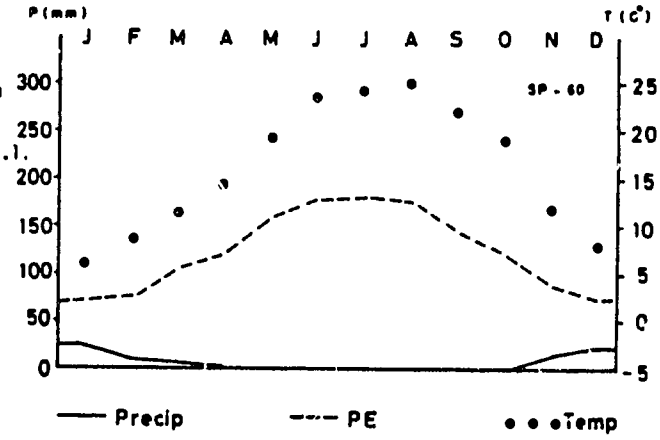
Depth (cm)	Horizon	Size Class and particle diameter (mm) — Total: Sand (2-0.05)	Total: Silt (0.05-0.002)	Total: Clay (<0.002)	Sand: Very coarse (2-1)	Sand: Coarse (1-0.5)	Sand: Medium (0.5-0.25)	Sand: Fine (0.25-0.1)	Sand: Very fine (0.1-0.05)	Silt: 0.05-0.02	Silt: 0.02-0.002	Coarse fragments: >2 % of whole soil	Coarse fragments: 2-19 % of <76 mm	Coarse fragments: 19-76 % of <76 mm	Texture class
		% of < 2 mm													
0- 19	AP	29	31	40											C
19- 40	A3	57	15	28											SCL
40- 68	B21	29	23	49											C
68- 92	B22	26	20	54											C
92-110	B3	27	21	52											C

Depth (cm)	Organic Carbon %	Nitrogen %	C / N	Ext Iron as Fe %	Carbonate as Ca Co 3 <2 mm %	Carbonate as Ca Co 3 <0.002 mm %	Bulk Density 1/3 bar g/cc	Bulk Density ovendry g/cc	COLE	Water Contents 1/3 bar %	Water Contents 15 bar %	pH Satur. paste	pH H_2O	pH KCl
0- 19	.6				23.5	6.0				27.3	12.4		7.8	
19- 40	.6				23.5	9.0				19.3	8.2		7.8	
40- 68	.4				21.0	8.0				30.0	13.8		8.1	
68- 92	.5				21.0	10.0				32.4	15.1		8.2	
92-110	.3				20.0	9.0				31.6	14.6		7.9	

Depth (cm)	Extractable Bases Ca	Mg	Na	K	Sum	Ext Acidity	C.E.C. Sum of Cations	Na OAc	Ext. Al me/100 g	Ratios to clay C.E.C	Ext. Fe	15 bar water	Ca/Mg	Total Solu. Salts ppm	Base saturation Sum of Cations %	Na OAc %
	me / 100 g															
0- 19			.5	1.3				44.0		1.1		.3				100.0
19- 40			1.0	.7				46.0		1.6		.3				100.0
40- 68			2.0	.5				46.0		1.0		.3				100.0
68- 92			3.1	.5				46.0		.9		.3				100.0
92-110			3.0	.6				46.0		.7		.3				100.0

Depth (cm)	Electrical Conductivity mmho / cm	Water Extract From Saturated Paste — Cations Ca	Mg	Na	K	CO_3	HCO_3	Cl	SO_4	Water at Satur %	ESP %	SAR	CSP %	Gypsum %	Ext P_2O_5 ppm	Available Nutrients Ca	Mg	K
		me / liter														mg / 100 g		
0- 19	.5										1.1	.5	100.0		10.0			>100
19- 40	.6										2.2	.9	100.0		6.3			66.1
40- 68	.5										4.3	1.3	100.0		9.0			47.2
68- 92	.5										6.7	1.7	100.0		5.0			47.2
92-110	.7										6.5	1.7	100.0		6.0			56.6

Classification: Typic Camborthids; fine, mixed, thermic.
Location: Damascus province, Syria. Approximately 20 km southeast of Damascus, 16 km west of Alhyjanah, 20 km east of Damascus-Sweyda highway.
Physiographic Position: Plains, elevation about 735 m.a.s.l.
Topography: Gently sloping topography with a slope 3 percent towards north.
Drainage: Well drained, slow surface run-off, moderately slow permeability.
Vegetation: Non-irrigated land.
Parent Material: Neogene basalt.
Sampled by: H. Yuksel and R. Rizek on Sept. 28, 1980
Soil No.: SP - 60



Hori.	Depth (cm)	Description
Ap	0 - 19	Brown (7.5 YR 4/4 m) to reddish yellow (7.5 YR 6/6 d) clay loam; weak, medium, subangular blocky structure breaking to fine granular structure; approximately 1 cm wide craks extending up to 40 cm; slightly hard (dry), friable (moist), slightly sticky and slightly plastic; many, fine, continuous, vertical, inped, simple open pores; common, very fine and few, fine roots between peds; abrupt wavy boundary; pH 7.8
A3	19 - 40	Dark brown (7.5 YR 4/4 m) to strong brown (7.5 YR 5/6 d) sandy clay loam; moderate, medium, subangular blocky structure; hard (dry), firm (moist), sticky and plastic; frequent, fine, continuous, vertical, inped, simple, open pores; few, very fine to fine roots; clear, wavy boundary; pH 7.6
B21	40 - 68	Yellowish red (5 YR 4/6 m) clay; moderate, medium, subangular blocky structure; hard (dry), firm (moist), sticky and plastic; patchy, thin cutanes probably of clay minerals on horizontal and vertical ped faces; frequent, medium to coarse, discontinuous, vertical, inped, simple, closed pores; few, very fine roots; gradual, wavy boundary; pH 8.1
B22	68 - 92	Yellowish red (5 YR 4/6 m) clay; moderate, medium, subangular blocky structure; very hard (dry), very firm (moist), sticky and plastic; patchy, thin cutanes probably of clay minerals on horizontal and vertical ped faces; few, fine, discontinuous, vertical, inped, closed pores; gradual wavy boundary; pH 8.2
BC	92 - 110	Yellowish red (5 YR 4/6 m) clay; moderate, medium, subangular blocky structure; hard (dry), firm (moist), sticky and plastic, patchy, thin cutanes probably of clay minerals on horizontal and vertical ped faces; few, fine, discontinuous, vertical, inped, closed pores; pH 7.9

SYRIAN ARAB REBUBLIC
MINISTRY OF AGRICULTURE AND AGRARIAN
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DEPARTMENT OF SOIL SURVEY

SOIL SERIES _____ TAXONOMY : _____ SOIL. No BP - 61

LOCATION _____ LAB Nos. 1640 - 1646 - 1647 - 1648

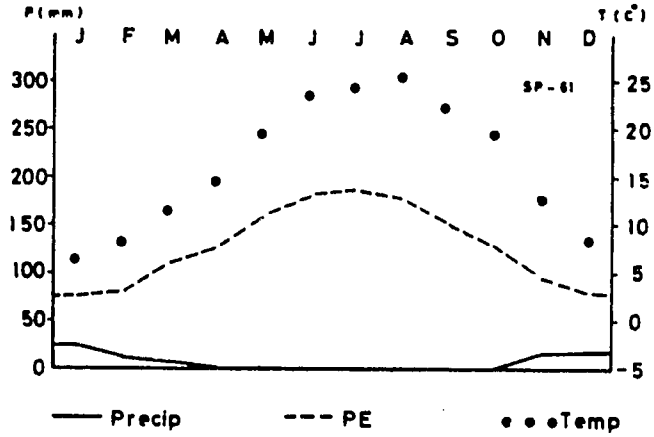
Depth (cm)	Horizon	Size Class and particle diameter (mm) — Total: Sand (2-0.05)	Silt (0.05-0.002)	Clay (<0.002)	Sand: Very coarse (2-1)	Coarse (1-0.5)	Medium (0.5-0.25)	Fine (0.25-0.1)	Very fine (0.1-0.05)	Silt: 0.05-0.02	0.02-0.002	Coarse fragments: >2 % of whole soil	2-19 %	19-76 %	Texture class
		% of < 2 mm											of <76 mm		
0- 20	A1	23	35	42											C
20- 52	C1	21	17	62											C
52- 88	C2	17	19	64											C
88-110	C3	20	24	56											C

Depth (cm)	Organic Carbon %	Nitrogen %	C / N	Ext. Iron as Fe %	Carbonate as Ca Co 3 <2 mm	<0.002 mm	Bulk Density 1/3 bar	ovendry (g / cc)	COLE	Water Contents 1/3 bar	15 bar (%)	pH Satur. paste	H_2O	KCl
0- 20	.6				18.5	7.0				28.9	13.2		7.8	
20- 52	.3				38.0	8.0				35.8	16.8		7.7	
52- 88	.5				17.0	10.0				37.0	17.5		0.1	
88-110	.3				16.0	9.0				33.9	15.9		8.0	

Depth (cm)	Extractable Bases (me / 100 g) Ca	Mg	Na	K	Sum	Ext Acidity	C. E. C. Sum of Cations	Na OAc	Ext. Al me / 100 g	Ratios to clay C. E. C	Ext. Fe	15 bar water	Ca/ Mg	Total Solu. Salts ppm	Base saturation Sum of Cations	Na OAc
0- 20			1.5	1.2				58.0		1.4		.3				100.0
20- 52			4.0	.9				58.0		.9		.3				100.0
52- 88			5.5	.8				58.0		.9		.3				100.0
88-110			6.0	.8				60.0		1.1		.3				100.0

Depth (cm)	Electrical Conductivity mmho / cm	Water Extract From Saturated Paste — Cations: Ca	Mg	Na	K	CO 3	HCO 3	Cl	SO 4	Water at Satur. %	ESP %	SAR	CSP %	Gypsum %	Ext P_2O_5 ppm	Available Nutrients Ca	Mg	K
		me / liter														mg / 100 g		
0- 20	.5										2.6	1.0	100.0		6.0			>100
20- 52	1.4										6.9	1.9	100.0		5.5			85.0
52- 88	1.2										9.5	2.3	100.0		8.2			75.5
88-110	.7										10.0	2.4	100.0		6.0			75.5

Classification: Entic Chromoxerert; very fine, mixed, thermic.
Location: Damascus province, Syria. Approximately 38 km southeast of Damascus, 19 km southwest of Hyjanah, 20 meters east of Damascus-Sweyda highway.
Physiographic Position: Level plains, elevation about 650 m.a.s.l.
Topography: Level topography with a slope 2 percent towards north-west.
Drainage: Well drained, slow surface run-off, slow permeability.
Vegetation: Non-irrigated land.
Parent Material: -
Sampled by: H. Yuksel and R. Rizek on Sept. 28, 1980
Soil No.: SP - 61



Hori.	Depth (cm)	Description
A1	0 - 20	Dark brown (7.5 YR 4/4 m) to brown (7.5 YR 5/4 d) clay; weak, medium subangular blocky structure; approximately 6 cm wide craks extending up to 60 cm; hard (dry), firm (moist), very sticky and very plastic; common very fine to fine roots, between peds; abrupt smooth boundary; pH 7.8
C1	20 - 52	Dark brown (7.5 YR 4/4 m) to brown (7.5 YR 5/4 d) clay; massive; extremely hard (dry), extremely firm (moist), very sticky and very plastic; slickensides on ped faces; few, very fine roots, between peds; gradual, smooth bourdary; pH 7.7
C2	52 - 88	Dark brown (7.5 YR 4/4 m) clay; massive; very firm (moist), very sticky and very plastic; slickensides on ped faces; diffuse smooth boundary; pH 8.1
C3	88 - 110	Dark brown (7.5 YR 4/4 m) clay; massive; firm (moist), very sticky and very plastic; pH 8.0

SYRIAN ARAB REBUBLIC
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DEPARTMENT OF SOIL SURVEY

SOIL SERIES _____ TAXONOMY _____ SOIL No SP - 62

LOCATION _____ LAB Nos 1673 - 1674 - 1675 - 1676 - 1677

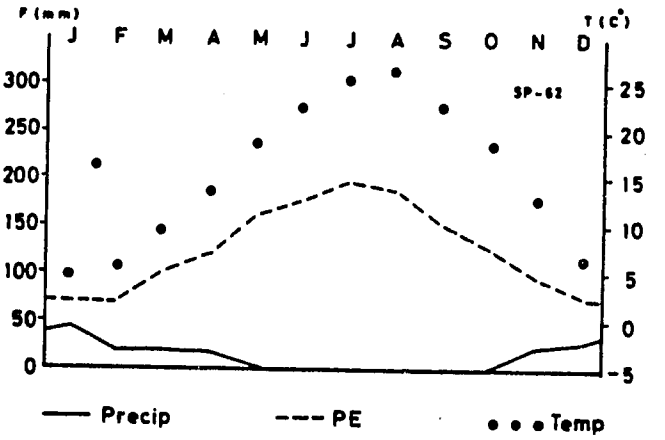
Depth (cm)	Horizon	Size Class and particle diameter (mm): Total Sand (2-0.05)	Total Silt (0.05-0.002)	Total Clay (<0.002)	Sand: Very coarse (2-1)	Sand: Coarse (1-0.5)	Sand: Medium (0.5-0.25)	Sand: Fine (0.25-0.1)	Sand: Very fine (0.1-0.05)	Silt: 0.05-0.02	Silt: 0.02-0.002	Coarse fragments >2 % of whole soil	Coarse fragments 2-19 % of <76 mm	Coarse fragments 19-76 % of <76 mm	Texture class
		% of < 2 mm													
0- 6	A11	54	24	22											SCL
6- 17	A12	40	26	34											CL
17- 49	B21	36	32	32											CL
49- 82	B22	20	28	52											C
82-115	Bc	18	36	46											C

Depth (cm)	Organic Carbon %	Nitrogen %	C / N	Ext Iron as Fe %	Carbonate as $CaCO_3$ <2 mm %	Carbonate as $CaCO_3$ <0.002 mm %	Bulk Density 1/3 bar g/cc	Bulk Density ovendry g/cc	COLE	Water Contents 1/3 bar %	Water Contents 15 bar %	pH Satur paste	pH H_2O 1/	pH KCl 1/
0- 6	.2				50.0	7.0				17.7	7.4		8.0	7.3
6- 17	.3				45.0	10.0				23.7	10.5		8.2	7.2
17- 49	.2				37.0	10.0				23.6	10.5		8.2	7.0
49- 82	.2				20.5	7.0				32.6	15.2		8.1	7.0
82-115	.1				19.5	8.0				30.9	14.3		8.1	7.0

Depth (cm)	Extractable Bases Ca (me / 100 g)	Mg	Na	K	Sum	Ext Acidity	CEC Sum of Cations	CEC Na OAc	Ext. Al me / 100 g	Ratios to clay C.E.C	Ext. Fe	15 bar water	Ca / Mg	Total Solu. Salts ppm	Base saturation Sum of Cations %	Base saturation NaOAc %
0- 6	9.7	1.6	.2	.7	12.2			12.0		.5		.3				100.0
6- 17	10.3	1.9	.2	.7	13.1			12.0		.4		.3				100.0
17- 49	11.1	2.7	.3	.4	14.5			14.0		.4		.3				100.0
49- 82	14.5	6.9	.9	.4	22.7			23.0		.4		.3				98.7
82-115	10.3	8.7	1.1	.5	20.6			26.0		.6		.3				79.2

Depth (cm)	Electrical Conductivity mmho / cm	Water Extract From Saturated Paste: Cations Ca (me / liter)	Mg	Na	K	CO_3	HCO_3	Cl	SO_4	Water at Satur %	ESP %	SAR	CSP %	Gypsum %	Ext P_2O_5 ppm	Available Nutrients Ca (mg / 100 g)	Mg	K
0- 6	.6										1.7	.3	80.8	tr	31.0		271.6	2[illegible] 66
6- 17	.5										1.7	.3	85.8	tr	17.0		288.4	35 3 66
17- 49	.5										2.1	.4	79.3	tr	8.0		310.9	50.2 37
49- 82	.7										3.9	.9	63.0	tr	6.0		406.0	28.2 37
82-115	.5										4.2	.9	39.6	tr	10.0		288.4	61.6 47

Classification: Typic Camborthid: fine loamy, mixed, thermic.
Location: Damascus province, Syria. Approximately 42 km northeast of Damascus, 2 km northeast of Muaddamyah, 10 km southwest of Jeroud, 20 meters east of Damascus-Palmyra highway.
Physiographic Position: Level plains, elevation about 210 m.a.s.l.
Topography: Level topography with a slope of 2 percent towards southwest.
Drainage: Well drained, very slow to slow surface run-off, moderate permeability.
Vegetation: Rangeland.
Parent Material: Quaternary or more recent alluvium, derived from Paleogene limestone.
Sampled by: H. Yuksel and R. Rizek on Oct. 4, 1980
Soil No.: SP - 62



Hori.	Depth (cm)	Description
A11	0 - 6	Light yellowish brown (10 YR 6/4 m) to yellowish brown (10 YR 5/6 d) sandy clay loam; weak, medium, subangular blocky structure, slightly hard (dry), friable (moist), slightly sticky and slightly plastic; few, fine, continuous, vertical, inped, open pores; few, rounded gravels, constituting approximately 15 percent of the horizon; few, very fine roots, between and inside peds; abrupt, smooth boundary; pH 8.0
A12	6 - 17	Light yellowish brown (10 YR 6/4 m) to yellowish brown (10 YR 5/6 d) clay loam; weak, medium, subangular blocky structure; hard (dry), firm (moist), slightly sticky and slightly plastic; few, fine, continuous, vertical, inped, open pores, few rounded gravels, constituting approximately 15 percent of the horizon; few, very fine roots, between and inside peds; clear, wavy boundary; pH 8.2
B21	17 - 49	Reddish yellow (10 YR 6/6 m) to yellowish brown (10 YR 5/6 d) clay loam; moderate, medium, subangular blocky structure; hard (dry), firm (moist), slightly sticky and slightly plastic, few, fine to medium, continuous, vertical, inped, open pores, frequent, rounded gravels, constituting approximately 20 percent of the horizon; few, large, soft, carbonate accumulation between peds; gradual, smooth boundary; pH 8.2
B22	49 - 82	Reddish yellow (7.5 YR 6/6 m) to yellowish brown (10 YR 5/6 d) clay; moderate, medium, subangular blocky structure; hard (dry), firm (moist), sticky and plastic; few, fine to medium, continuous, vertical, inped, open pores; frequent rounded gravels, constituting approximately 20 percent of the horizon; few, large, soft carbonate accumulation between peds; gradual, smooth boundary. pH 8.1
BC	82 - 115	Strong brown (7.5 YR 5/6 m) to brown (7.5 YR 4/4 d) clay; massive; hard (dry), firm (moist), sticky and plastic; frequent fine to medium continuous, vertical inped open pores; frequent, rounded gravels, constituting approximately 25 percent of the horizon; few, large, soft accumulation between peds; pH 8.1

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DEPARTMENT OF SOIL SURVEY

SOIL SERIES _____ TAXONOMY _____ SOIL No SP - 63

LOCATION _____ LAB Nos. 1678 - 1679 - 1680 - 1681 - 1682 - 1683

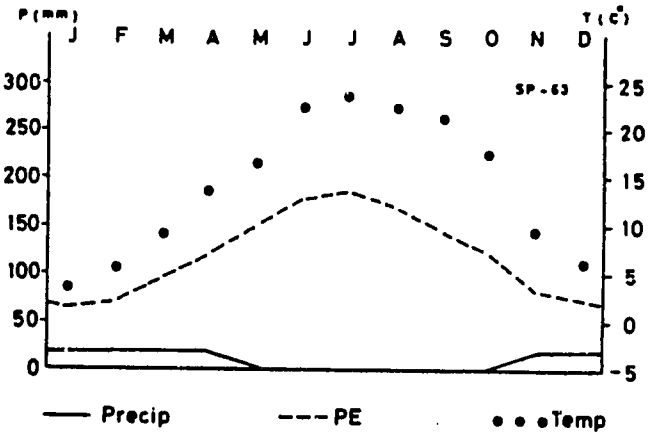
Depth (cm)	Horizon	Size Class and particle diameter (mm) — Total: Sand (2-0.05)	Silt (0.05-0.002)	Clay (<0.002)	Sand: Very coarse (2-1)	Coarse (1-0.5)	Medium (0.5-0.25)	Fine (0.25-0.1)	Very fine (0.1-0.05)	Silt: Coarse (0.05-0.02)	Fine (0.02-0.002)	Coarse fragments >2 % of whole soil	2-19 %	19-76 %	Texture class
		% of < 2 mm											% of <76 mm		
0- 6	A11	15	39	46											C
6- 18	A12	14	42	44											C
18- 45	B21	13	33	54											C
45- 67	B22	15	31	54											C
67- 86	C1	14	32	34											C
86-123	C2	28	34	28											CL

Depth (cm)	Organic Carbon %	Nitrogen %	C / N	Ext Iron as Fe %	Carbonate as $CaCO_3$ <2 mm %	<0.002 mm %	Bulk Density 1/3 bar g/cc	Ovendry g/cc	COLE	Water Contents 1/3 bar %	15 bar %	pH Satur paste	H_2O	KCl
0- 6	.8				31.5	16.0				31.3	14.5		7.9	7.6
6- 18	.7				32.0	14.0				30.8	14.2		8.5	7.2
18- 45	.8				33.0	16.0				34.3	16.0		8.6	7.3
45- 67	.6				31.5	18.0				34.0	15.9		8.2	7.4
67- 86	.5				33.1	17.0				34.1	16.0		8.2	7.4
86-123	.4				30.0	15.0				21.8	9.5		8.0	7.2

Depth (cm)	Extractable Bases Ca	Mg	Na	K	Sum (me / 100 g)	Ext Acidity	C. E. C. Sum of Cations	Na OAc	Ext. Al me / 100 g	Ratios to clay C. E. C	Ext. Fe	15 bar water	Ca/Mg	Total Solu. Salts ppm	Base saturation Sum of Cations %	Na OAc
0- 6	7.7	2.9	1.0	3.2	14.8			15.0		.3		.3				98.7
6- 18	7.0	4.2	1.2	1.9	14.3			14.0		.3		.3				100.0
18- 45	7.0	6.9	.6	1.6	16.1			16.0		.3		.3				100.0
45- 67	7.9	6.0	.3	1.4	15.6			16.0		.3		.3				97.5
67- 86	7.9	6.1	.2	1.4	15.6			16.0		.3		.3				97.5
86-123	8.0	5.8	.2	1.4	15.4			16.0		.6		.3				96.3

Depth (cm)	Electrical Conductivity mmho / cm	Water Extract From Saturated Paste: Cations Ca	Mg	Na	K	CO_3	HCO_3	Cl	SO_4 (me / liter)	Water at Satur %	ESP %	SAR	CSP %	Gypsum %	Ext P_2O_5 ppm	Available Nutrients Ca	Mg (mg / 100 g)	K
0- 6	11.0										6.7	.6	51.3	tr	33.0		215.6	53.9
6- 18	1.4										8.6	.8	50.0	tr	27.0		196.0	78.0
18- 45	.4										3.8	.5	43.8	tr	22.0		196.0	28.2
45- 67	.4										1.9	.3	49.4	tr	25.0		221.2	11.5
67- 86	.5										1.3	.2	49.4	tr	21.0		221.2	[illegible].3
86-123	.5										1.3	.2	50.0	tr	19.0		224.0	07.8

Classification: Typic Calciorthid; fine, mixed, thermic.
Location: Damascus province, Syria. Approximately 66 km northeast of Damascus, 6 km southwest of Nasyrian, 20 meters east of Damascus-Palmyra highway.
Physiographic Position: Level plains; elevation about 550 m.a.s.l.
Topography: Gently sloping topography with a slope of 3 percent towards southwest.
Drainage: Well drained, slow surface run-off, moderate permeability.
Vegetation: Rangeland
Parent Material: Quaternary or more recent colluvium derived from Paleogene limestone with inclusion of some alluvium.
Sampled by: H. Yuksel and R. Rizek on Oct. 4, 1980
Soil No.: SP - 63



Hori.	Depth (cm)	Description
A11	0 - 6	Brown (7.5 YR 5/4 m) to light yellowish brown (10 YR 6/4 d) clay; weak, fine, subangular blocky breaking to weak, fine granular structure; hard (dry), firm (moist), sticky and slightly plastic; few, fine, continuous, vertical, inped, simple open pores; few, insect nests and worm casts; few, very fine to fine roots between peds; abrupt wavy boundary; pH 7.9
A12	6 - 18	Strong brown (7.5 YR 5/6 m) to brownish yellow (10 YR 6/6 d) clay; strong, medium, subangular blocky structure; hard (dry), firm (moist), sticky and slightly plastic; few, fine, continuous, vertical, inped, simple open pores; few, insect nests and worm casts, few, fine to medium roots between peds; gradual, smooth boundary; pH 8.5
B21	18 - 45	Strong brown (7.5 YR 5/6 m) to brownish yellow (10 YR 6/6 d) clay; weak, medium, subangular blocky structure; slightly hard (dry), friable (moist), sticky and slightly plastic; gradual, smooth boundary; pH 8.6
B22	45 - 67	Strong brown (7.5 YR 5/6 m) to brownish yellow (10 YR 6/6 d) clay; weak, fine, subangular blocky structure; hard (dry), firm (moist), sticky and slightly plastic, gradual, smooth boundary; pH 8.2
C1	67 - 86	Strong brown (7.5 YR 5/6 m) to brownish yellow (10 YR 6/6 d) clay; hard (dry), firm (moist), sticky and plastic; few, fine, discontinuous, vertical, inped, closed pores; gradual, smooth boundary; pH 8.2
C2	86 - 123	Strong brown (7.5 YR 5/6 m) to brownish yellow (10 YR 6/6 d) clay loam; hard (dry), firm (moist), sticky and plastic; few, very fine, discontinuous, vertical, inped, simple closed pores; pH 8.0

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DEPARTMENT OF SOIL SURVEY

SOIL SERIES _____ TAXONOMY _____ SOIL No SP - 54

LOCATION _____ LAB Nos. 1684 - 1685 - 1686 - 1687

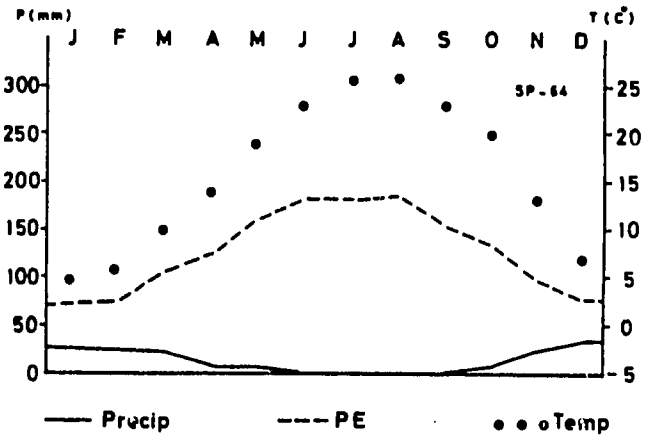
Depth (cm)	Horizon	Total Sand (2-0.05)	Total Silt (0.05-0.002)	Total Clay (<0.002)	Sand: Very coarse (2-1)	Sand: Coarse (1-0.5)	Sand: Medium (0.5-0.25)	Sand: Fine (0.25-0.1)	Sand: Very fine (0.1-0.05)	Silt: 0.05-0.02	Silt: 0.02-0.002	Coarse fragments >2 % of whole soil	Coarse fragments 2-19 % of <76 mm	Coarse fragments 19-76 % of <76 mm	Texture class
		% of < 2 mm													
0- 5	A1	Flocculated----													SiCL
5- 14	B2sa	Flocculated----													SiCL
14- 32	B3sa	Flocculated----													SiC
32- 40	Csa	Flocculated----													

Depth (cm)	Organic Carbon %	Nitrogen %	C / N	Ext. Iron as Fe %	Carbonate as Ca Co 3 <2 mm %	Carbonate as Ca Co 3 <0.002 mm %	Bulk Density 1/3 bar g/cc	Bulk Density oven dry g/cc	COLE	Water Contents 1/3 bar %	Water Contents 15 bar %	pH Satur. paste	pH H_2O	pH KCl
0- 5	2.3				30.0	15.0							8.4	8.3
5- 14	1.6				34.0	16.0							8.2	8.2
14- 32	.9				52.0	21.0							7.9	7.9
32- 40	.7				41.0	26.0							8.0	8.0

Depth (cm)	Extractable Bases Ca	Mg	Na	K	Sum	Ext. Acidity	C. E. C. Sum of Cations	C. E. C. Na OAc	Ext. Al me / 100 g	Ratios to clay C. E. C	Ratios to clay Ext. Fe	Ratios to clay 15 bar water	Ca / Mg	Total Solu. Salts ppm	Base saturation Sum of Cations %	Base saturation Na OAc %
	me / 100 g															
0- 5	21.7	18.7	5.5	2.3	48.2			48.0								100.0
5- 14	20.1	13.5	2.0	1.5	37.1			37.0								100.0
14- 32	19.0	9.0	2.0	1.5	31.5			32.0								98.4
32- 40	5.8	4.1	10.5	1.4	23.8			15.0								100.0

Depth (cm)	Electrical Conductivity mmho / cm	Water Extract From Saturated Paste: Cations Ca	Mg	Na	K	CO 3	HCO 3	Cl	SO 4	Water at Satur. %	ESP %	SAR	CSP %	Gypsum %	Ext. P_2O_5 ppm	Available Nutrients Ca	Mg	K
		me / liter														mg / 100 g		
0- 5	21.0										11	2.1	45	23.0	22.0	607.6	347.4	>100
5- 14	37.0										5	1.2	54	21.7	14.0	562.8	250.8	>100
14- 32	27.0										6	1.2	59	7.7	10.0	532.0	167.2	>100
32- 40	20.0										70	3.1	38	2.8	8.0	162.4	113.3	>100

Classification: Typic Salo.thid; fine loamy, mixed, thermic.
Location: Damascus province, Syria. Approximately 56 km northeast of Damascus, 4 km east of Jayroud, 6 km southwest ofNasseriyah, 6 km east of Damascus-Palmyra highway.
Physiographic Position: Level plains; elevation about 850 m.a.s.l.
Topography: Level to gently undulating topography with a slope of 2 percent towards southwest.
Drainage: Moderately well drained, slow surface run-off, slow permeability.
Vegetation: Rangeland and barren
Parent Material: Quaternary or more recent lacustrine
Sampled by: H. Yuksel and R. Rizek on October 4, 1981
Soil No.: SP - 64



Hori.	Depth (cm)	Description
A1	0 - 5	Yellowish brown (10 YR 5/6 m) to light yellowish brown (10 YR 6/4 d) silt loam; weak, very fine, granular structure; hard (dry), friable (moist), slightly sticky and slightly plastic; few, fine, discontinuous, vertical, inped, simple closed pores; common, fine to medium roots between peds; abrupt smooth boundary; pH 8.4
B2 sa	5 - 14	Light yellowish brown (10 YR 6/4 m) silty clay loam; strong, medium subangular blocky structure; firm (moist), sticky and plastic; few, fine, discontinuous, vertical, inped, simple closed pores; few, very fine roots, between peds; clear wavy boundary; pH 8.2
B3 sa	14 - 32	Pale brown (10 YR 6/3 m) silty clay loam; massive; firm (moist), sticky and plastic; clear, wavy boundary; pH 7.9
Csa	32 +	White (10 YR 8/2 m) silty clay; massive; very firm (moist), sticky and plastic; pH 8.0

SYRIAN ARAB REPUBLIC
MINISTRY OF AGRICULTURE AND AGRARIAN REFORM DIRECTORATE OF SOILS
DEPARTMENT OF SOIL SURVEY

SOIL SERIES _____ TAXONOMY _____ SOIL No SP - 65

LOCATION _____ LAB Nos. 1688 - 1689 - 1690

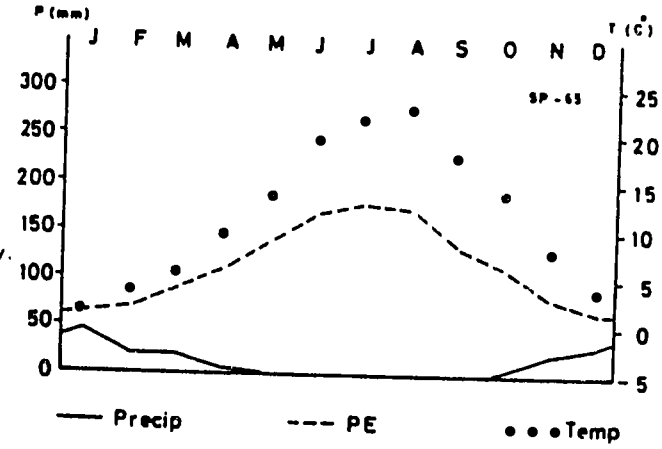
Depth (cm)	Horizon	Total Sand (2-0.05)	Total Silt (0.05-0.002)	Total Clay (<0.002)	Sand: Very coarse (2-1)	Sand: Coarse (1-0.5)	Sand: Medium (0.5-0.25)	Sand: Fine (0.25-0.1)	Sand: Very fine (0.1-0.05)	Silt: 0.05-0.02	Silt: 0.02-0.002	Coarse fragments >2 % of whole soil	Coarse fragments 2-19 % of <76 mm	Coarse fragments 19-76 % of <76 mm	Texture class
		% of < 2 mm													
0- 8	A1	36	26	38											CL
8- 29	B2	37	31	32											CL
29- 43	C	26	26	48											C

Depth (cm)	Organic Carbon %	Nitrogen %	C / N	Ext Iron as Fe %	Carbonate as Ca Co 3 <2 mm %	Carbonate as Ca Co 3 <0.002 mm %	Bulk Density 1/3 bar g/cc	Bulk Density ovendry g/cc	COLE	Water Contents 1/3 bar %	Water Contents 15 bar %	pH Satur. paste	pH H_2O	pH KCl
0- 8	.7				36.5	8.0				25.6	11.5		8.2	7.2
8- 29	.9				31.5	7.0				23.5	10.4		7.9	7.0
29- 43	.8				33.0	10.0				30.4	14.0		8.1	7.0

Depth (cm)	Extractable Bases Ca (me / 100 g)	Mg	Na	K	Sum	Ext Acidity	C. E. C. Sum of Cations	C. E. C. Na OAc	Ext. Al me / 100 g	Ratios to clay C. E. C	Ext. Fe	15 bar water	Ca / Mg	Total Solu. Salts ppm	Base saturation Sum of Cations %	Base saturation Na OAc %
0- 8			.2	1.1				18.0		.5		.3				100.0
8- 29			.5	.5				19.0		.6		.3				100.0
29- 43			.3	.5				14.0		.3		.3				100.0

Depth (cm)	Electrical Conductivity mmho / cm	Water Extract From Saturated Paste Cations Ca (me / liter)	Mg	Na	K	CO 3	HCO 3	Cl	SO 4	Water at Satur %	ESP %	SAR	CSP %	Gypsum %	Ext P_2O_5 ppm	Available Nutrients Ca (mg / 100 g)	Mg	K
0- 8	.7										1	.2	100	tr	29.0			>100
8- 29	.8										2	.6	100	.2	12.5			47.2
29- 43	.7										2	.4	100	tr	13.5			47.2

Classification: Lithic Camborthid; fine loamy, mixed, thermic.
Location: Damascus province, Syria. Approximately 56 km northeast of Damascus, 8 km west of Yabroud, 20 meters north of Sednaya-Yabroud road.
Physiographic position: Gently undulating plains; elevation about 890 m.a.s.l.
Topography: Gently sloping topography with a slope of 4% towards northwest.
Draingae: Well drained, very slow to slow surface run-off, moderately slow to moderate permeability.
Vegetation: Rangeland
Parent Material: Neogene basalt.
Sampled by: H. Yuksel and R. Rizek on Oct. 5, 1980
Soil No.: SP - 65



Hori.	Depth (cm)	Description
A1	0 - 8	Yellowish red (5 YR 5/6 m) to strong brown (7.5 YR 5/6 d) clay loam; moderate, fine, subangular blocky structure breaking to weak, fine granular structure; slightly hard (dry), friable (moist), slightly sticky and slightly plastic; few, fine, continuous, vertical, inped, simple open pores; few, rounded gravels constituting approximately 5 percent of the horizon; few, small, soft carbonate coatings on ped faces; few, very fine to fine roots between peds; abrupt smooth boundary; p H 8.2
B2	8 - 29	Yellowish red (5 YR 5/6 m) to strong brown (7.5 YR 5/6d) clay loam; moderate, medium, subangular blocky structure; hard (dry), friable (moist), sticky and plastic; few, fine, continuous, vertical, inped, simple open pores; few rounded gravels constituting approximately 5 percent of the horizon; few, very fine roots; clear, smooth boundary; pH 7.9
C	29 - 43	Yellowish red (5 YR 4/6 m) to strong brown (7.5 YR 5/6 d) clay; weak, medium, subangular blocky structure, hard (dry), friable (moist), slightly sticky and plastic; few, fine, continuous, vertical, inped, simple open pores; frequent rounded gravels constituting approximately 30 percent of the horizon; gradual broken boundary; pH 8.1
R	43+	Bedrock.

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DEPARTMENT OF SOIL SURVEY

SOIL SERIES _____ TAXONOMY _____ SOIL No SP - 66

LOCATION _____ LAB Nos 1691 - 1692 - 1693 - 1694 - 1695 - 1696

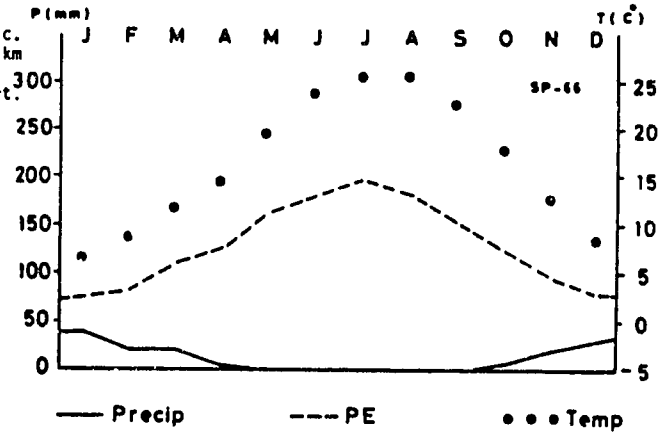
Depth (cm)	Horizon	Size Class and particle diameter (mm) — Total: Sand (2-0.05)	Total: Silt (0.05-0.002)	Total: Clay (<0.002)	Sand: Very coarse (2-1)	Sand: Coarse (1-0.5)	Sand: Medium (0.5-0.25)	Sand: Fine (0.25-0.1)	Sand: Very fine (0.1-0.06)	Silt: 0.05-0.02	Silt: 0.02-0.002	Coarse fragments: >2 % of whole soil	Coarse fragments: 2-19 % of <76 mm	Coarse fragments: 19-76 % of <76 mm	Texture class
		% of < 2 mm													
0- 10	A1	21	32	56											C
10- 46	B21	17	19	64											C
46- 80	B22	40	20	40											CL
80-113	C1ca	22	18	60											C
113-141	C2ca	38	20	42											C
141-172	C3ca	22	24	54											C

Depth (cm)	Organic Carbon %	Nitrogen %	C / N	Ext Iron as Fe %	Carbonate as Ca Co 3 <2 mm %	Carbonate as Ca Co 3 <0.002 mm %	Bulk Density 1/3 bar g/cc	Bulk Density ovendry g/cc	COLE	Water Contents 1/3 bar %	Water Contents 15 bar %	pH Satur. paste	pH H_2O 1/	pH K Cl 1/
0- 10	.5				61.5	21.0				35.3	16.6		8.4	7.5
10- 46	.4				72.5	18.0				37.0	17.5		8.5	7.8
46- 80	.1				78.0	23.0				25.7	11.6		7.9	7.5
80-113	.2				74.0	22.0				35.0	16.4		7.9	7.6
113-141	.1				75.5	17.0				26.7	12.1		7.9	7.5
141-172	.2				72.5	12.0				33.0	15.4		7.9	7.4

Depth (cm)	Extractable Bases Ca	Mg	Na	K	Sum (me / 100 g)	Ext Acidity	C. E. C. Sum of Cations	C. E. C. Na OAc	Ext. Al me / 100 g	Ratios to clay C. E. C	Ratios to clay Ext. Fe	Ratios to clay 15 bar water	Ca/ Mg	Total Solu. Salts ppm	Base saturation Sum of Cations %	Base saturation NaOAc %
0- 10			.5	.5				11.0		.2		.3				100.0
10- 46			.5	.3				7.0		.1		.3				100.0
46- 80			.3	.1				7.0		.2		.3				100.0
80-113			.3	.1				6.0		.1		.3				100.0
113-141			.5	.2				6.0		.1		.3				100.0
141-172			.6	.3				7.0		.1		.3				100.0

Depth (cm)	Electrical Conductivity mmho / cm	Water Extract From Saturated Paste — Cations: Ca (me / liter)	Mg	Na	K	CO 3	HCO 3	Cl	SO 4	Water at Satur %	ESP %	SAR	CSP %	Gypsum %	Ext P_2O_5 ppm	Available Nutrients Ca (mg / 100 g)	Mg	K
0- 10	1.4										4	.5	100	tr	8.0			47.2
10- 46	1.2										6	.6	100	tr	7.0			28.3
46- 80	9.0										3	.5	100	.3	6.5			9.4
80-113	5.5										4	.4	100	.2	8.0			12.3
113-141	2.9										8	.7	100	.2	8.0			15.1
141-172	.8										7	.7	100	.3	6.0			24.5

Classification: Typic Calciorthid; fine, mixed, thermic.
Location: Damascus province, Syria. Approximately 17 km southeast of Damascus, 5 km northeast of Najha, 1 km southwest of Damascus highway to the airport.
Physiographic position: Level plains; elevation about 610 m.a.s.l.
Topography: Level topography with a slope of 1 percent towards northwest.
Drainage: Well drained, slow surface run-off, slow permeability
Vegetation: Rangeland.
Parent Material: Quaternary or more recent lacustrine.
Sampled by: H. Yuksel and R. Rizek on Oct. 9, 1980
Soil No.: SP - 66



Hori.	Depth (cm)	Description
A1	0 - 10	Brownish yellow (10 YR 6/6 m) to very pale brown (10 YR 7/4 d) clay; moderate fine subangular blocky structure; hard (dry), firm (moist), sticky and plastic; many, fine, continuous, random, inped, open pores; few, very fine roots between peds; abrupt wavy boundary; pH 8.4
B21	10 - 46	Yellow (10 YR 7/6 m) to very pale brown (10 YR 8/3 d) clay; weak, medium, subangular blocky structure; hard (dry), friable (moist), sticky and slightly plastic; frequent, fine continuous, inped, open pores; abundant, large, carbonate concreations and carbonate coatings; gradual wavy boundary; pH 8.5
B22	46 - 80	Very pale brown (10 YR 7/4 m) to white (10 YR 8/2 d) clay loam; massive; hard (dry), firm (moist), sticky and plastic; frequent, fine, continuous, inped, open pores; few, rounded gravels, constituting approximately 5 percent of the horizon, abundant, large, carbonate concreation and carbonate coatings; diffuse wavy boundary; pH 7.9
C1 ca	80 - 113	Very pale brown (10 YR 7/4 m) to white (10 YR 8/2 d) clay loam; massive; hard (dry), firm (moist), sticky and plastic, frequent, fine, discontinuous, inped, closed pores; few rounded gravels, constituting approximately 15 percent of the horizon; abundant, large,carbonate concreations and carbonate coatings; gradual wavy boundary; pH 7.9
C2 ca	113 - 141	Very pale brown (10 YR 7/3 m) to white (10 YR 8/2 d) clay; massive; hard (dry), firm (moist), sticky and plastic, frequent, fine, discontinuous, inped, closed pores; frequent rounded gravels, constituting approximately 20 percent of the horizon; frequent, large carbonate concreations and soft carbonate coatings; gradual wavy boundary; pH 7.9
C3 ca	141 - 172	Very pale brown (10 YR 7/4 m) to white (10 YR 8/2 d) clay; massive; hard (dry), firm (moist), sticky and plastic; few, fine, discontinuous, inped, closed pores; frequent rounded gravels, constituting approximately 25 percent of the horizon; abundant, large, carbonate concreations and soft carbonate coatings on ped faces; pH 7.9

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REFORM DIRECTORATE OF SOILS
DEPARTMENT OF SOIL SURVEY

SOIL SERIES _____ TAXONOMY _____ SOIL No SP - 67

LOCATION _____ LAB Nos. 1697

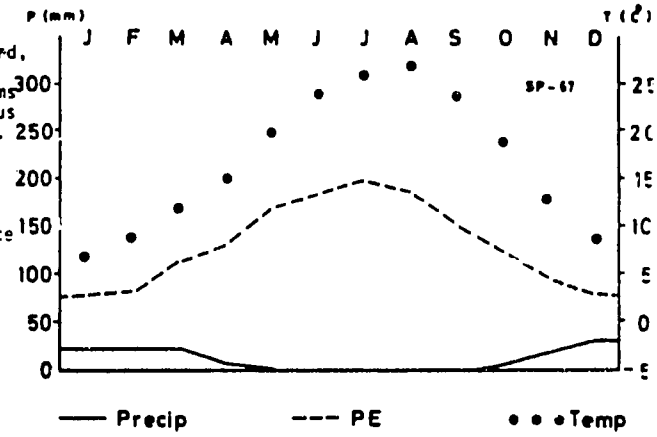
Depth (cm)	Horizon	Size Class and particle diameter (mm) — Total: Sand (2-0.05)	Total: Silt (0.05-0.002)	Total: Clay (<0.002)	Sand: Very coarse (2-1)	Sand: Coarse (1-0.5)	Sand: Medium (0.5-0.25)	Sand: Fine (0.25-0.1)	Sand: Very fine (0.1-0.05)	Silt: 0.05-0.02	Silt: 0.02-0.002	Coarse fragments >2 % of whole soil	Coarse fragments 2-19 % of <76 mm	Coarse fragments 19-76 % of <76 mm	Texture class
		%, of < 2 mm													
0- 13	A1	52	29	19											SL

Depth (cm)	Organic Carbon %	Nitrogen %	C / N	Ext. Iron as Fe %	Carbonate as Ca Co 3 <2 mm %	Carbonate as Ca Co 3 <0.002 mm %	Bulk Density 1/3 bar g/cc	Bulk Density ovendry g/cc	COLE	Water Contents 1/3 bar %	Water Contents 15 bar %	pH Satur. paste	pH H_2O	pH KCl
0- 13	1.1				37.5	15.0				17.0	7.0		8.2	7.4

Depth (cm)	Extractable Bases Ca (me / 100 g)	Mg	Na	K	Sum	Ext Acidity	C. E. C. Sum of Cations	C. E. C. Na OAc	Ext. Al me / 100 g	Ratios to clay C. E. C	Ext. Fe	15 bar water	Ca/Mg	Total Solu. Salts ppm	Base saturation Sum of Cations %	Base saturation Na OAc %
0- 13	1.2	1.9	.2	.7	3.9			4.0		.2		.4				98.3

Depth (cm)	Electrical Conductivity mmho / cm	Water Extract From Saturated Paste — Cations Ca (me / liter)	Mg	Na	K	CO 3	HCO 3	Cl	SO 4	Water at Satur %	ESP %	SAR	CSP %	Gypsum %	Ext. P_2O_5 ppm	Available Nutrients Ca (mg / 100 g)	Mg	K
0- 13	.8										3	.2	30	tr	27.0	33.6	35.3	64.2

Classification: Lithic Torriorthent; coarse loamy, mixed, thermic.
Location: Damascus province, Syria. Approximately 40 kms southeast of Damascus, 18 km southeast of Damascus International Airport, 1 km east of Hyjaneh lake.
Physiographic Position: Level plains; elevation about 630 m.a.s.l.
Topography: Level topography with a slope of 1 percent towards southwest.
Drainage: Well to excessively drained; very slow surface run-off; moderately slow permeability.
Vegetation: Rangeland.
Parent Material: Quaternary or more recent lacustrine.
Sampled by: H. Yuksel and R. Rizek on Oct. 8, 1980
Soil No.: SP - 67



Hori.	Depth (cm)	Description
A1	0 - 15	Dark grayish brown (10 YR 4/2 m) to gray (10 YR 5/1 d) sandy loam; weak, fine, subangular blocky structure breaking to weak, fine granular structure; slightly hard (dry), very friable (moist), non sticky and non plastic; few, fine, discontinuous, random, inped closed pores; few, subrounded gravel constituting approximately 10 percent of the horizon; few fine roots between peds; abrupt, broken, boundary; pH 7.4
R	15+	Lacustrine bedrock with many freshwater fauna fossils.

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DEPARTMENT OF SOIL SURVEY

SOIL SERIES _____ TAXONOMY _____ SOIL. No SP - 68

LOCATION _____ LAB Nos. 1698 - 1699 - 1700 - 1701 - 1702 - 1703

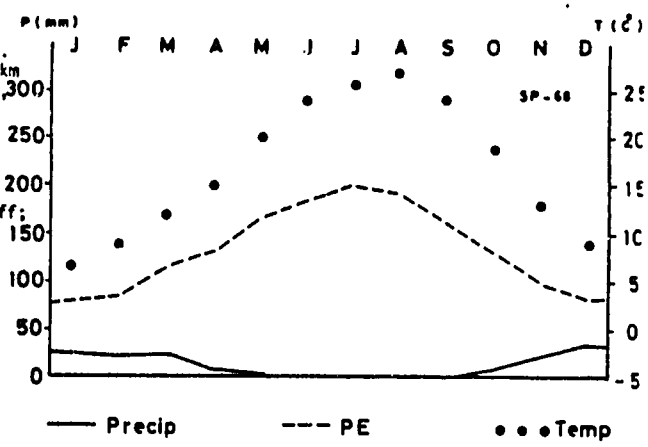
Depth (cm)	Horizon	Size Class and particle diameter (mm) — Total: Sand (2-0.05)	Silt (0.05-0.002)	Clay (<0.002)	Sand: Very coarse (2-1)	Coarse (1-0.5)	Medium (0.5-0.25)	Fine (0.25-0.1)	Very fine (0.1-0.05)	Silt: 0.05-0.02	0.02-0.002	Coarse fragments: >2 % of whole soil	2-19 mm	19-76 mm	Texture class
		% of < 2 mm										% of <76 mm			
0- 18	A1	23	24	53											C
18- 30	B21	31	18	51											C
30- 46	B22	40	14	46											C
46- 65	B3	38	16	46											C
65- 91	C1	34	21	45											C
91-115	C2	32	28	40											CL

Depth (cm)	Organic Carbon %	Nitrogen %	C / N	Ext Iron as Fe %	Carbonate as Ca Co 3 < 2 mm %	< 0.002 mm %	Bulk Density 1/3 bar g/cc	ovendry g/cc	CDLE	Water Contents 1/3 bar %	15 bar %	pH Satur paste	H_2O 1/	KCl 1/
0- 18	1.2				47.5	18.0				32.5	15.1		7.9	7.0
18- 30	.7				53.5	20.0				30.7	14.2		8.0	7.0
30- 46	.4				63.0	19.0				27.7	12.6		8.0	7.2
46- 65	.2				67.5	23.0				28.0	12.8		7.9	7.1
65- 91	2				74.0	23.0				28.3	12.9		8.2	7.4
91-115	.1				74.0	23.0				26.9	12.2		8.4	7.4

Depth (cm)	Extractable Bases Ca	Mg	Na	K	Sum (me / 100 g)	Ext Acidity	C.E.C. Sum of Cations	Na OAc	Ext. Al me / 100 g	Ratios to clay C.E.C	Ext. Fe	15 bar water	Ca/Mg	Total Solu. Salts ppm	Base saturation Sum of Cations %	Na OAc %
0- 18			.3	1.1				2.0		.0		.3				100.0
18- 30			.3	.9				19.0		.4		.3				100.0
30- 46			.2	.6				15.0		.3		.3				100.0
46- 65			.2	.4				11.0		.2		.3				100.0
65- 91			.1	.4				10.0		.2		.3				100.0
91-115			.1	.3				10.0		.3		.3				100.0

Depth (cm)	Electrical Conductivity mmho / cm	Water Extract From Saturated Paste — Cations Ca	Mg	Na	K (me / liter)	CO 3	HCO 3	Cl	SO 4	Water at Satur %	ESP %	SAR	CSP %	Gypsum %	Ext P_2O_5 ppm	Available Nutrients Ca (mg / 100 g)	Mg	K
0- 18	3.8										15	.3	100	tr	18.0			>100
18- 30	.5										1	.3	100	tr	7.4			85.0
30- 46	.8										1	.3	100	tr	7.0			56.6
46- 65	.5										1	.3	100	tr	7.0			37.8
65- 91	.4										1	.2	100	tr	5.0			37.8
91-115	.6										1	.2	100	tr	8.0			28.3

Classification: Aquic Camborthid; fine, mixed, thermic.
Location: Damascus province, Syria. Approximately 34 km southeast of Damascus, 6 km southeast of Hyjaneh, near the west edge of the Hyjaneh lake.
Physiographic Position: Level plains; elevation about 688 m.a.s.l.
Topography: Level topography with a slope of 1 percent towards southwest.
Drainage: Imperfectly drained; very slow surface run-off; moderately slow permeability.
Vegetation: Rangeland.
Parent Material: Quaternary or more recent lacustrine.
Sampled by: H. Yuksel and R. Rizek on Oct. 8, 1980
Soil No.: SP - 68



Hori.	Depth (cm)	Description
A1	0 - 18	Dark gray (10 YR 4/1 m) to gray (10 YR 5/1 d) loam; moderate, medium, subangular blocky structure; approximately 1 cm wide craks extending down to 15 cm; hard (dry), friable (moist), slightly sticky and non plastic; few, fine, continuous, vertical, inped open pores; few, very fine to fine roots inside peds; clear wavy boundary; pH 7.0
B21	18 - 30	Dark brown (10 YR 4/3 m) to brown (10 YR 5/3 d) clay loam; common, medium, distinct strong brown (7.5 YR 5/8 m) mottles on ped faces; moderate, medium, subangular blocky structure; hard (dry), firm (moist), slightly sticky and slightly plastic, many, fine to medium, continuous, vertical, inped, open pores; few, very fine to fine roots inside peds; clear wavy boundary; pH 7.0
B22	30 - 46	Yellowish brown (10 YR 5/4 m) to very pale brown (10 YR 7/3 d) clay loam; common, medium, distinct strong brown (10 YR 5/8 m) mottles on ped faces; moderate, medium, subangular blocky structure; extremely hard (dry), firm (moist), sticky and slightly plastic; many fine to medium continuous, vertical, inped open pores; clear, wavy boundary; pH 7.2
B3	46 - 65	Light brownish gray (10 YR 6/2 m) to very pale brown (10 YR 7/3 d) clay loam; common, medium, distinct, strong brown (10 YR 5/6 m) mottles on ped faces; weak, medium, subangular blocky structure; extremely hard (dry), firm (moist), sticky and plastic; many fine to medium, continuous, vertical, inped open pores, clear, smooth boundary; pH 7.1
C1	65 - 91	Gray (10 YR 6/1 m) to light gray (10 YR 7/2 d) clay loam; common, medium, distinct, strong brown (7.5 YR 5/6 m) mottles on ped faces; massive; extremely hard (dry), firm (moist), sticky and plastic; many, fine to medium, continuous, vertical, inped open pores; clear, smooth boundary; pH 7.4
C2	91 - 115	Gray (10 YR 6/1 m) clay loam; common, medium, distinct, strong brown (10 YR 5/6 m) mottles on ped faces; massive; firm (moist), sticky and plastic; many fine to medium, continuous, vertical, inped open pores; pH 7.4

SYRIAN ARAB REBUBLIC
MINISTRY OF AGRICULTURE AND AGRARIAN
REFORM DIRECTORATE OF SOILS
DEPARTMENT OF SOIL SURVEY

SOIL SERIES _____ TAXONOMY _____ SOIL. No SP - 69

LOCATION _____ LAB Nos. 1704 - 1705 - 1706 - 1707 - 1708

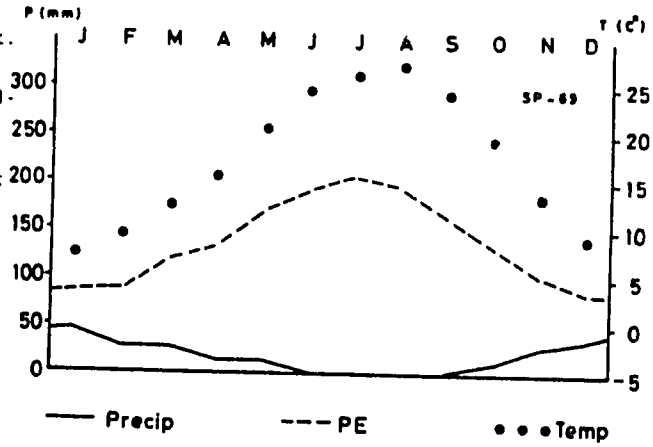
Depth (cm)	Horizon	Size Class and particle diameter (mm) — Total: Sand (2-0.05)	Total: Silt (0.05-0.002)	Total: Clay (<0.002)	Sand: Very coarse (2 - 1)	Sand: Coarse (1 - 0.5)	Sand: Medium (0.5 - 0.25)	Sand: Fine (0.25 - 0.1)	Sand: Very fine (0.1 - 0.05)	Silt: 0.05 - 0.02	Silt: 0.02 - 0.002	Coarse fragments: >2 % of whole soil	Coarse fragments: 2 - 19 % of <76 mm	Coarse fragments: 19-76 % of <76 mm	Texture class
		%, of < 2 mm													
0- 13	A1	24	32	44											C
13- 39	B21	22	32	46											C
39- 58	B22	26	31	43											C
58- 74	B3	31	33	36											CL
74-110	C	32	32	36											CL

Depth (cm)	Organic Carbon %	Nitrogen %	C / N	Ext Iron as Fe %	Carbonate as Ca Co 3 < 2 mm %	Carbonate as Ca Co 3 <0.002 mm %	Bulk Density 1/3 bar g / cc	Bulk Density ovendry g / cc	COLE	Water Contents 1/3 bar %	Water Contents 15 bar %	pH Satur. paste	pH H_2O /	pH K Cl /
0- 13	1.7				52.5	20.0				29.4	13.5		7.5	7.4
13- 39	.4				55.5	22.0				30.3	14.0		8.1	7.2
39- 58	tr				54.5	17.0				28.7	13.1		8.2	7.2
58- 74	.4				55.5	15.0				25.7	11.5		8.2	7.3
74-110	.2				53.0	14.0				25.6	11.5		7.9	7.3

Depth (cm)	Extractable Bases Ca	Mg	Na	K	Sum	Ext Acidity	C. E. C Sum of Cations	Na OAc	Ext. Al me / 100 g	Ratios to clay C. E. C	Ext. Fe	15 bar water	Ca/ .g	Total Solu. Salts ppm	Base saturation Sum of Cations %	Na OAc
	me / 100 g															
0- 13			.6	.4				13.0		.3		.3				100.0
13- 39			.2	.3				14.0		.3		.3				100.0
39- 58			.2	.2				14.0		.3		.3				100.0
58- 74			.2	.2				12.0		.3		.3				100.0
74-110			.3	.2				11.0		.3		.3				100.0

Depth (cm)	Electrical Conductivity mmho / cm	Water Extract From Saturated Paste — Cations Ca	Mg	Na	K	CO 3	HCO 3	Cl	SO 4	Water at Satur %	ESP %	SAR	CSP %	Gypsum %	Ext P_2O_5 ppm	Available Nutrients Ca	Mg	K
		me / liter														mg / 100 g		
0- 13	5.8										4	.7	100	.6	12.5			37.8
13- 39	.8										1	.3	100	tr	9.0			28.3
39- 58	.6										1	.4	100	tr	10.0			18.9
58- 74	7.8										1	.4	100	tr	7.0			18.9
74-110	1.7										2	.5	100	.2	10.5			18.9

Classification: Typic Camborthid; fine, mixed, thermic.
Location: Damascus province, Syria. Approximately 22 km east of Damascus, 8 km west of Utaybeh, 4 km north of the road between Damascus and Harran Al-Awamid.
Physiographic Position: Level plains; elevation about 610 m.a.s.l.
Topography: Level topography with a slope of 1 percent towards northeast.
Drainage: Well drained; slow surface run-off; slow permeability.
Vegetation: Rangeland.
Parent Material: Quaternary or more recent lacustrine.
Sampled by: H. Yuksel and R. Rizek on Oct. 9, 1980
Soil No.: SP - 69



Hori.	Depth (cm)	Description
A1	0 - 13	Yellowish brown (10 YR 5/4 m) to light yellowish brown (10 YR 6/4 d) clay loam; moderate, fine platy structure; very hard (dry), friable (moist), slightly sticky and slightly plastic; few, fine, discontinuous, vertical, inped, closed pores; few, small, soft, local carbonate powder on ped faces; few, insect nests and worm casts; abrupt, wavy boundary; pH 7.4
B21	13 - 39	Dark brown (10 YR 4/3 m) to brown (10 YR 5/3 d) clay loam; moderate, medium, subangular blocky structure; hard (dry), friable (moist), slightly sticky and slightly plastic; many, fine, continuous, random, inped, open pores; few small, soft carbonate powder on ped faces; clear, smooth boundary; pH 7.2
B22	39 - 58	Dark yellowish brown (10 YR 4/4 m) to yellowish brown (10 YR 5/4 d) clay loam; moderate, medium, subangular blocky structure; hard (dry), friable (moist), slightly sticky and slightly plastic; many, fine, continuous, random, inped, closed pores; few, small, soft carbonate powder on ped faces; clear, smooth boundary; pH 7.2
B3	58 - 74	Yellowish brown (10 YR 5/6 m) to brownish yellow (10 YR 6/6 d) clay loam; weak, medium, subangular blocky structure; hard (dry), friable (moist), slightly sticky and slightly plastic; few, fine, discontinuous, inped, closed pores; clear smooth boundary; pH 7.3
C	74 - 110	Yellowish brown (10 YR 5/6 m) to brownish yellow (10 YR 6/6 d) clay loam; massive; slightly hard (dry), firm (moist), slightly sticky and slightly plastic; pH 7.3

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SOIL SERIES _____ TAXONOMY _____ SOIL No. SP - 70

LOCATION _____ LAB Nos. 1709 - 1710 - 1711 - 1712 - 1713

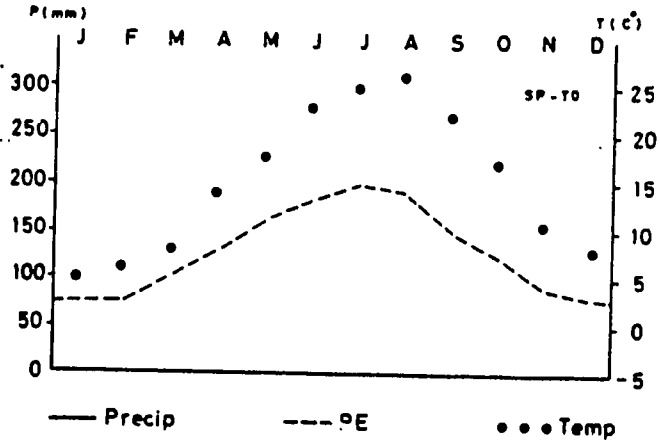
Depth (cm)	Horizon	Size Class and particle diameter (mm): Total Sand (2-0.05)	Total Silt (0.05-0.002)	Total Clay (<0.002)	Sand: Very coarse (2-1)	Sand: Coarse (1-0.5)	Sand: Medium (0.5-0.25)	Sand: Fine (0.25-0.1)	Sand: Very fine (0.1-0.05)	Silt: 0.05-0.02	Silt: 0.02-0.002	Coarse fragments: >2 mm % of whole soil	Coarse fragments: 2-19 mm % of <76 mm	Coarse fragments: 19-76 mm % of <76 mm	Texture class
		%, of < 2 mm													
0- 11	A1	56	28	16											SL
11- 19	B1	42	23	35											CL
19- 42	B2ca	36	32	32											CL
42- 88	C1ca	Flocculated													
88-110	C2ca	Flocculated													

Depth (cm)	Organic Carbon %	Nitrogen %	C / N	Ext. Iron as Fe %	Carbonate as Ca Co 3 <2 mm %	Carbonate as Ca Co 3 <0.002 mm %	Bulk Density 1/3 bar g/cc	Bulk Density ovendry g/cc	COLE	Water Contents 1/3 bar %	Water Contents 15 bar %	pH Satur. paste	pH H_2O	pH KCl
0- 11	.4				43.0	10.0				15.4	6.2		7.8	7.4
11- 19	.4				43.0	10.0				23.8	10.5		7.6	7.3
19- 42	.3				43.0	14.0				23.6	10.5		7.0	7.4
42- 88	.3				39.5	12.0							7.9	7.1
88-110	.3				34.0	12.0							7.6	7.2

Depth (cm)	Extractable Bases Ca (me / 100 g)	Mg	Na	K	Sum	Ext Acidity	C. E. C. Sum of Cations	C. E. C. Na OAc	Ext. Al me / 100 g	Ratios to clay C. E. C	Ext. Fe	15 bar water	Ca / Mg	Total Solu. Salts ppm	Base saturation Sum of Cations %	Base saturation Na OAc %
0- 11			1.5	1.3				12.0		.8		.4				100.0
11- 19			1.5	1.1				10.0		.3		.3				100.0
19- 42			1.5	.2				7.0		.2		.3				100.0
42- 88			2.5	.1				44.0								100.0
88-110			2.0	.1				42.0								100.0

Depth (cm)	Electrical Conductivity mmho / cm	Water Extract From Saturated Paste: Cations Ca (me / liter)	Mg	Na	K	CO 3	HCO 3	Cl	SO 4	Water at Satur %	ESP %	SAR	CSP %	Gypsum %	Ext P_2O_5 ppm	Available Nutrients Ca (mg / 100 g)	Mg	K
0- 11	8.0																	
11- 19	27.0										12	1.0	100	tr	66.4			>100
19- 42	27.0										15	1.0	100	tr	44.6			>100
42- 88	16.0										21	1.2	100	.2	22.9			18.9
88-110	14.0										5	1.6	100	9.8	19.5			9.4
											4	1.4	100	8.9	21.0			9.4

Classification: Typic Calciorthids; fine loamy, mixed, thermic.
Location: Homs province, Syria. Approximately 38 km southeast of Al-Qariatein, 6 km south east of Basiri village, 50 m west of the Homs-Baghdad highway.
Physiographic Position: Gently undulating to undulating piedmont plains; elevation about 787 m.a.s.l.
Topography: gently sloping topography with a slope of 5 percent towards southeast.
Vegetation: Rangeland.
Parent Material: Neogene and Paleogene Limestones.
Sampled by: H. Yuksel and R. Rizek on Oct. 12, 1980
Soil No.: SP - 70



Hori.	Depth (cm)	Description
A1	0 - 11	Yellowish brown (10 YR 5/6 m) to yellow (10 YR 7/6 d) fine sandy loam; weak, fine, subangular blocky structure, breaking to weak, fine, granular structure; slightly hard (dry), friable (moist), slightly sticky and slightly plastic; frequent, fine, continuous, vertical, inped, open pores; few rounded to subrounded gravel, constituting approximately 5 percent of the horizon; few insect nests; few, fine, routs, inside ped; abrupt, smooth boundary; pH 7.4
B1	11 - 19	Yellowish brown (10 YR 5/6 m) to yellow (10 YR 7/6 d) loam; weak, fine, subangular blocky structure breaking to granular structure; slightly hard (dry), friable (moist), slightly sticky and slightly plastic; few, fine, continuous, vertical, inped, open pores; frequent rounded to subrounded gravel constituting approximately 15 percent of the horizon; few, small, soft carbonate powders on ped faces; few, very fine to fine roots between peds; clear, smooth boundary; pH 7.3
B2 ca	19 - 42	Strong brown (7.5 YR 5/6 m) to reddish yellow (7.5 YR 6/6 d) loam; weak, fine, subangular blocky structure; slightly hard (dry), friable (moist), slightly sticky and slightly plastic; few, fine, continuous, vertical, inped, open pores; frequent, rounded to subrounded gravel constituting approximately 20 percent of the horizon; frequent, large, carbonate concreations and soft carbonate powder on ped faces; abrupt, smooth boundary; pH 7.4
C1 ca	42 - 88	Yellowish brown (10 YR 5/6 m) clay loam; massive; firm (moist), sticky and plastic, frequent rounded to subrounded gravel constituting approximately 20 percent of the horizon; abundant, large, hard carbonate concreations and soft carbonate powder; gradual, smooth boundary; pH 7.1
C2 ca	88 - 110	Yellowish brown (10 YR 5/6 m) clay loam; massive; firm (moist), sticky and plastic; frequent rounded to subrounded gravel constituting approximately 25 percent of the horizon; abundant, large, hard carbonate concreations and soft carbonate powder; pH 7.2

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SOIL SERIES _____ TAXONOMY _____ SOIL. No. SP - 71

LOCATION _____ LAB Nos. 2093 - 2094 - 2095 - 2096 - 2097 - 2098

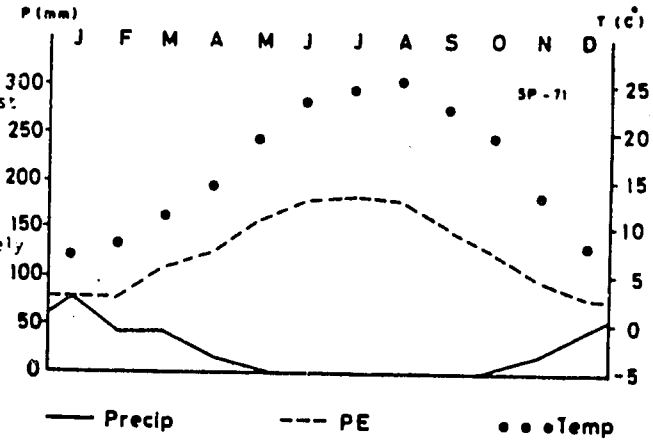
Depth (cm)	Horizon	Size Class and particle diameter (mm) — Total: Sand (2-0.05)	Total: Silt (0.05-0.002)	Total: Clay (<0.002)	Sand: Very coarse (2-1)	Sand: Coarse (1-0.5)	Sand: Medium (0.5-0.25)	Sand: Fine (0.25-0.1)	Sand: Very fine (0.1-0.05)	Silt: 0.05-0.02	Silt: 0.02-0.002	Coarse fragments: >2 % of whole soil	Coarse fragments: 2-19 % of <76 mm	Coarse fragments: 19-76 % of <76 mm	Texture class
		% of < 2 mm													
0- 11	A11	24	36	40											CL
11- 21	A12	24	22	54											C
21- 34	B21	24	30	46											C
34- 55	B22	18	20	62											C
55- 82	C1	24	26	50											C
82-110	C2	18	20	62											C

Depth (cm)	Organic Carbon %	Nitrogen %	C / N	Ext. Iron as Fe %	Carbonate as Ca Co 3 <2 mm %	Carbonate as Ca Co 3 <0.002 mm %	Bulk Density 1/3 bar g/cc	Bulk Density ovendry g/cc	COLE	Water Contents 1/3 bar %	Water Contents 15 bar %	pH Satur. paste	pH H_2O	pH KCl
0- 11	1.5				21.0	11.4				28.0	12.8		7.9	
11- 21	1.4				20.5	11.4				32.7	15.2		8.1	
21- 34	.3				20.5	12.5				30.0	13.8		8.1	
34- 55	.2				35.5	8.0				36.2	17.1		8.1	
55- 82	.3				26.5	16.0				31.4	14.5		8.1	
82-110	.2				37.5	22.8				36.2	17.1		8.2	

Depth (cm)	Extractable Bases Ca	Mg	Na	K	Sum	Ext Acidity	C.E.C. Sum of Cations	C.E.C. Na OAc	Ext. Al me/100 g	Ratios to clay C.E.C	Ratios to clay Ext. Fe	Ratios to clay 15 bar water	Ca/Mg	Total Solu. Salts ppm	Base saturation Sum of Cations %	Base saturation Na OAc %
	me / 100 g															
0- 11								34.0		.9		.3				100.0
11- 21								34.0		.6		.3				100.0
21- 34								33.0		.7		.3				100.0
34- 55								26.0		.4		.3				100.0
55- 82								63.0		1.3		.3				100.0
82-110								29.0		.5		.3				100.0

Depth (cm)	Electrical Conductivity mmho/cm	Water Extract From Saturated Paste — Cations Ca	Mg	Na	K	CO_3	HCO_3	Cl	SO_4	Water at Satur %	ESP %	SAR	CSP %	Gypsum %	Ext P_2O_5 ppm	Available Nutrients Ca	Mg	K
		me / liter														mg / 100 g		
0- 11	.3												100		29.7			
11- 21	.3												100		27.5			
21- 34	.4												100		29.8			
34- 55	.4												100		29.8			
55- 82	.4												100		32.1			
82-110	.5												100		38.9			

Classification: Calcixerollic Xerochrepts; fine, mixed, thermic.
Location: Deraa province, Syria. Approximately 8 km east of Deraa, 12 km north of the Jordan border, 20 m north of Deraa - Sweyda highway.
Physiographic Position: Gently undulating to undulating plains; elevation about 600 m.a.s.l.
Topography: Gently sloping topography with a slope of 4 percent towards west.
Drainage: Well drained; medium surface run-off, moderately slow permeability.
Vegetation: Rainfed agriculture.
Parent Material: Neogene basalt.
Sampled by: H. Yuksel and R. Rizek on Nov. 3, 1980
Soil No.: SP-71



Hori.	Depth (cm)	Description
A11	0 - 11	Yellowish red (5 YR 4/6 m) to (5 YR 5/6 d) clay loam; moderate, medium, subangular blocky structure, breaking to moderate, fine, granular structure; approximately 1 cm wide craks extending down to 35 cm; hard (dry), firm (moist), sticky and slightly plastic; few, fine, continuous, vertical, inped, open pores; few, very fine to fine roots; clear, smooth boundary; pH 7.9
A12	11 - 21	Reddish brown (5 YR 4/4 m) to yellowish red (5 YR 4/8 d) clay; moderate, medium, subangular blocky structure; hard (dry), firm (moist), sticky and plastic; many, fine to medium, continuous, vertical, inped, open pores; few, very fine to fine roots, clear, smooth boundary; pH 8.1
B21	21 - 34	Reddish brown (5 YR 4/4 m) to yellowish red (5 YR 5/6 d) clay; strong, medium, subangular blocky structure; hard (dry), firm (moist), sticky and plastic; patchy, thin cutanes probably of clay minerals on horizontal and vertical ped faces; many fine to medium, continuous, vertical, inped, open pores; few, small, soft carbonate powder on ped faces; few, very fine to fine roots; gradual, smooth boundary; pH 8.1
B22	34 - 55	Strong brown (7.5 YR 5/8 m) to yellowish red (5 YR 5/8 d) clay; strong, medium, subangular blocky structure; hard (dry), firm (moist), sticky and plastic; patchy, thin cutanes probably of clay minerals on horizontal and vertical ped faces; frequent, fine to medium, continuous, vertical, inped, open pores; few, small, soft, carbonate powder on ped faces; gradual, smooth boundary; pH 8.1
C1	55 - 82	Reddish brown (10 YR 4/4 m) to yellowish red (10 YR 4/8 d) clay; moderate, medium, subangular blocky structure; hard (dry), firm (moist), sticky and plastic; few, fine, continuous, vertical, inped, open pores; few, small, soft, carbonate powder on ped faces; gradual, smooth boundary; pH 8.1
C2	82 - 110	Strong brown (7.5 YR 5/8 m) to yellowish red (5 YR 5/8 d) clay; moderate, fine, subangular blocky structure; hard (dry), firm (moist), sticky and plastic; few, fine, discontinuous, vertical, inped, closed pores; few, small, soft, local carbonate powder on ped faces; pH 8.2

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SOIL SERIES _____ TAXONOMY : _____ SOIL. No SP - 72

LOCATION _____ LAB Nos. 2099 - 2100 - 2101 - 2102 - 2103

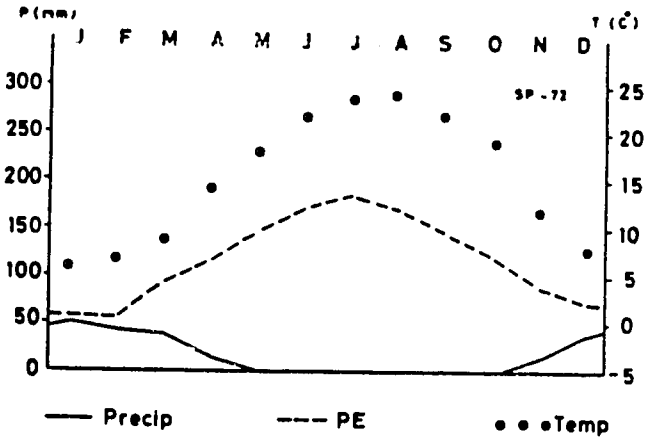
Depth (cm)	Horizon	Size Class and particle diameter (mm) — Total: Sand (2-0.05)	Total: Silt (0.05-0.002)	Total: Clay (<0.002)	Sand: Very coarse (2 - 1)	Sand: Coarse (1 - 0.5)	Sand: Medium (0.5 - 0.25)	Sand: Fine (0.25 - 0.1)	Sand: Very fine (0.1 - 0.05)	Silt: 0.05 - 0.02	Silt: 0.02 - 0.002	Coarse fragments: >2 mm % of whole soil	Coarse fragments: 2 - 19 mm % of <76 mm	Coarse fragments: 19-76 mm % of <76 mm	Texture class
		% of < 2 mm													
0- 14	A1	28	33	39											CL
14- 29	AB	17	19	64											C
29- 52	B2	24	21	55											C
52- 65	B3	15	19	66											C
65-108	C	16	19	65											C

Depth (cm)	Organic Carbon %	Nitrogen %	C / N	Ext Iron as Fe %	Carbonate as Ca Co 3 < 2 mm %	Carbonate as Ca Co 3 < 0.002 mm %	Bulk Density 1/3 bar g / cc	Bulk Density oven dry g / cc	COLE	Water Contents 1/3 bar %	Water Contents 15 bar %	pH Satur. paste	pH H_2O	pH K Cl
0- 14	.3				16.0	10.3				27.1	12.3			
14- 29	.2				20.0	11.4				37.0	17.5			
29- 52	.2				20.0	11.4				33.0	15.4			
52- 65	.2				23.0	14.1				38.0	18.0			
65-108	.1				29.5	19.4				37.5	17.7			

Depth (cm)	Extractable Bases Ca	Mg	Na	K	Sum	Ext Acidity	C. E. C. Sum of Cations	Na OAc	Ext. Al me / 100 g	Ratios to clay C. E. C	Ext. Fe	15 bar water	Ca/ Mg	Total Solu. Salts ppm	Base saturation Sum of Cations %	Na OAc %
	me / 100 g															
0- 14								44.0		1.1		.3				100.0
14- 29								38.0		.6		.3				100.0
29- 52								46.0		.8		.3				100.0
52- 65								40.0		.6		.3				100.0
65-108								36.0		.6		.3				100.0

Depth (cm)	Electrical Conductivity mmho / cm	Water Extract From Saturated Paste — Cations: Ca	Mg	Na	K	CO_3	HCO_3	Cl	SO_4	Water at Satur %	ESP %	SAR	CSP %	Gypsum %	Ext P_2O_5 ppm	Available Nutrients Ca mg / 100 g	Mg	K
		me / liter																
0- 14	.4												100		45.8			
14- 29	.3												100		20.4			
29- 52	.5												100		48.1			
52- 65	.9												100		32.1			
65-108	1.1												100		43.5			

Classification: Vertic Xerochrept, fine, mixed, thermic.
Location: Sweida province, Syria. Approximately, 25 km north of Sweida, 8 km northwest of Shaqa village, 2 km east of Damascus-Sweida highway; approximate coordinates 32o 56' N Latitude and 36o 37' E longtitude.
Physiographic Position: Gently undulating plateaus; elevation about 929 m.a.s.l.
Topography: Moderately sloping topography with a slope of 6 percent towards southwest.
Drainage: Well drained, medium surface run-off, slow permeability.
Vegetation: Rangeland.
Parent Material: Neogene Basalt.
Sampled by: H. Yuksel and R. Rizek, on Oct. 4, 1980
Soil No.: SP - 72



Hori.	Depth (cm)	Description
A1	0 - 14	Yellowish red (5 YR 4/6 m to 5 YR 5/6 d) clay loam; moderate, medium, subangular blocky structure; approximately 2 cm wide cracks, extending down to 65 cm; hard (dry), firm (moist), sticky and slightly plastic; few, fine,continuous, vertical, inped, irregular, open pores; few, very fine roots, between peds; clear, smooth boundary; pH 8.2
AB	14 - 29	Yellowish red (5 YR 4/6 m to 5 YR 5/6 d) clay; moderate, platy structure; extremely hard (dry), firm (moist), sticky and plastic; few, fine, continuous, vertical, inped, open pores; few, small, soft, local, carbonates powders; few, very fine roots between peds; clear, smooth boundary; pH 8.2
B2	29 - 52	Yellowish red (5 YR 4/6 m) clay; strong, coarse to medium prismatic structure, breaking to moderate, medium, subangular blocky structure; firm (moist), sticky and plastic; continuous, thin cutanes, probably of clay minerals, on horizontal and vertical ped faces; few, fine, continuous, vertical, inped, open pores; few, small, soft, local carbonate powders; clear, smooth boundary; pH 8.2
B3	52 - 65	Yellowish red (5YR 5/6 m) clay; strong coarse to medium prismatic structure, breaking to mederate, medium, subangular blocky structure; firm (moist), sticky and plastic; continuous, thin cutanes, probably of clay minerals, on horizontal and vertical ped faces; few, small, soft, local carbonate powders; few, very fine roots between peds; abrupt, smooth boundary; pH 8.4
C	63 - 108	Yellowish red (5 YR 5/6 m) clay; moderate, medium, subangular blocky structure; firm (moist), sticky and plastic; abundant, small, soft, local carbonate powders on ped faces; pH 8.4

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SOIL SERIES _____ TAXONOMY _____ SOIL. No SP - 73

LOCATION _____ LAB Nos. 2104 - 2105 - 2106 - 2107 - 2108

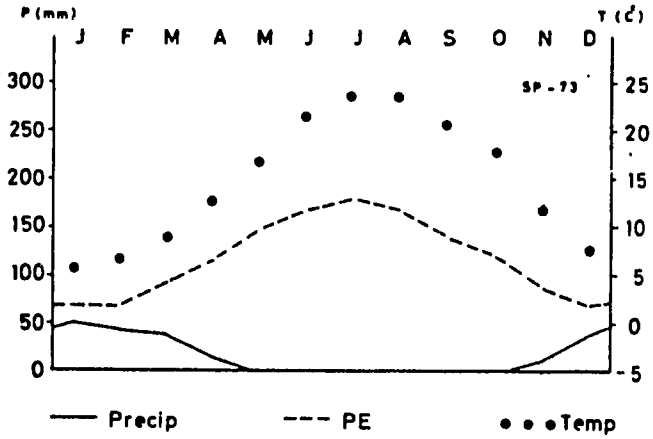
Depth (cm)	Horizon	Size Class and particle diameter (mm) — Total: Sand (2-0.05)	Total: Silt (0.05-0.002)	Total: Clay (<0.002)	Sand: Very coarse (2-1)	Sand: Coarse (1-0.5)	Sand: Medium (0.5-0.25)	Sand: Fine (0.25-0.1)	Sand: Very fine (0.1-0.05)	Silt: 0.05-0.02	Silt: 0.02-0.002	Coarse fragments: >2 % of whole soil	Coarse fragments: 2-19 % of <76 mm	Coarse fragments: 19-76 % of <76 mm	Texture class
		% of < 2 mm													
0- 7	A1	17	27	56											C
7- 33	B21	39	23	38											CL
33- 56	B22	21	21	38											C
56- 67	IIC	30	29	41											C
67- 90	C	16	30	54											C

Depth (cm)	Organic Carbon %	Nitrogen %	C / N	Ext. Iron as Fe %	Carbonate as Ca Co 3 <2 mm %	Carbonate as Ca Co 3 <0.002 mm %	Bulk Density 1/3 bar g/cc	Bulk Density ovendry g/cc	COLE	Water Contents 1/3 bar %	Water Contents 15 bar %	pH Satur paste	pH H_2O	pH KCl
0- 7	.4				6.5	4.6				34.4	16.1		7.9	
7- 33	.5				6.5	6.3				25.2	11.3		8.0	
33- 56	.3				10.5	5.7				34.5	16.1		8.0	
56- 67	.1				14.5	4.0				27.5	12.5		7.9	6.8
67- 90	.2				15.0	5.0				33.9	15.8		7.9	7.0

Depth (cm)	Extractable Bases Ca	Mg	Na	K	Sum (me / 100 g)	Ext Acidity	C. E. C. Sum of Cations	C. E. C. Na OAc	Ext. Al me / 100 g	Ratios to clay C. E. C	Ext. Fe	15 bar water	Ca / Mg	Total Solu. Salts ppm	Base saturation Sum of Cations %	Base saturation Na OAc %
0- 7								71.0		1.3		.3				100.0
7- 33								55.0		1.4		.3				100.0
33- 56								65.0		1.1		.3				100.0
56- 67				117.5				60.0		1.5		.3				100.0
67- 90				117.5				60.0		1.1		.3				100.0

Depth (cm)	Electrical Conductivity mmho / cm	Water Extract From Saturated Paste — Cations: Ca	Mg	Na	K	CO 3	HCO 3	Cl	SO 4	Water at Satur %	ESP %	SAR	CSP %	Gypsum %	Ext P_2O_5 ppm	Available Nutrients Ca	Mg	K
		me / liter														mg / 100 g		
0- 7	.4												100		48.1			
7- 33	.3												100		43.5			
33- 56	.3												100		38.9			
56- 67	.3												100		11.4			>100
67- 90	.4												100		4.6			>100

Classification: Typic Xerochrepts, fine, mixed, thermic.
Location: Sweida province, Syria. Approximately 26 km northeast of Sweda, 8 km southeast of Shaqa village. 10 m west of Shahba - Shaqa road; approximate coordinates 32o 53' N latitude and 36o 47' E longtitude.
Physiographic Position: Gently undulating to rolling plateaus; elevation about 929 m.a.s.l.
Topography: Gently sloping topography with a slope of 3 percent towards northeast.
Drainage: Well drained, slow surface run-off, slow permeability.
Vegetation: Rainfed agriculture.
Parent Material: Neogene Basalt.
Sampled by: H. Yuksel and R. Rizek on Oct. 4, 1980
Soil No.: SP - 73



Hori.	Depth (cm)	Description
A1	0 - 7	Dark brown (7.5 YR 3/2 m) to brown (7.5 YR 4/4 d) clay; weak, very fine to fine granular structure, approximately 1 cm wide cracks, extending down to 30 cm, hard (dry), firm (moist), sticky and slightly plastic; frequent, fine, continuous, random, inped, open pores; few, fine to medium roots inside peds; abrupt, smooth boundary; pH 7.9
B21	7 - 33	Dark brown (7.5 YR 3/2 m) to brown (7.5 YR 4/4 d) clay loam; strong, medium, subangular blocky structure; very hard (dry), firm (moist), sticky and plastic; patchy, thin cutanes, probably of clay minerals, on horizontal and vertical ped faces; few, fine, continuous, random, inped, open pores; few, fine to medium roots inside peds; clear, smooth boundary; pH 8.0
B22	33 - 56	Dark brown (7.5 YR 3/2 m) clay; strong, medium, subangular blocky structure; firm (moist), sticky and plastic, continuous, thin cutanes, probably of clay minerals, on horizontal and vertical ped faces; few, fine, continuous, random, inped, open pores; few, small, soft, local carbonate coatings on ped faces; few, fine to medium roots; clear smooth boundary; pH 8.0
Bc	56 - 67	Dark brown (7.5 YR 3/2 m) clay; moderate, medium, subangular blocky structure; very firm (moist), sticky and plastic; broken, thin cutanes, probably of clay minerals, on horizontal and vertical ped faces; few, small, soft, irregular, local carbonate coatings on ped faces; few, very fine to fine roots; clear, smooth boundary; pH 7.9
C	67 - 90+	Dark brown (7.5 YR 3/2 m) clay; weak, medium subangular blocky structure; firm (moist), sticky and plastic; frequent, small, soft, local carbonate coatings on ped faces; pH 7.9

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SOIL SERIES _____ TAXONOMY _____ SOIL No SP - 74

LOCATION _____ LAB Nos. 2109

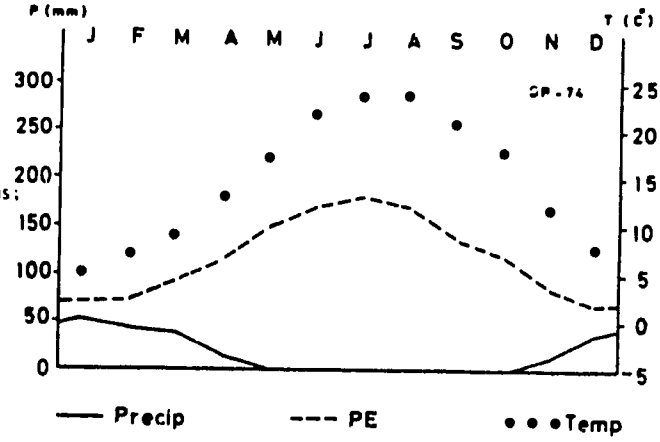
Depth (cm)	Horizon	Size Class and particle diameter (mm): Total Sand (2-0.05)	Total Silt (0.05-0.002)	Total Clay (<0.002)	Sand: Very coarse (2-1)	Sand: Coarse (1-0.5)	Sand: Medium (0.5-0.25)	Sand: Fine (0.25-0.1)	Sand: Very fine (0.1-0.05)	Silt (0.05-0.02)	Silt (0.02-0.002)				Coarse fragments >2 % of whole soil	Coarse fragments 2-19 %	Coarse fragments 19-76 %	Texture class
		% of < 2 mm														% of <76 mm		
0- 23	A1	37	32	31														CL

Depth (cm)	Organic Carbon %	Nitrogen %	C / N	Ext. Iron as Fe %	Carbonate as Ca Co 3 <2 mm %	Carbonate as Ca Co 3 <0.002 mm %	Bulk Density 1/3 bar g/cc	Bulk Density ovendry g/cc		COLE	Water Contents 1/3 bar %	Water Contents 15 bar %				pH Satur. paste	pH H_2O	pH K Cl
0- 23	1.5				.5	tr					23.2	10.2					7.7	6.8

Depth (cm)	Extractable Bases me / 100 g: Ca	Mg	Na	K	Sum	Ext Acidity	C. E. C. Sum of Cations	Na OAc		Ext. Al me / 100 g	Ratios to clay: C. E. C	Ext. Fe	15 bar water	Ca/ Mg	Total Solu. Salts ppm		Base saturation Sum of Cations %	Na OAc
0- 23				113.4				50.0			1.6		.3					100.0

Depth (cm)	Electrical Conductivity mmho / cm	Water Extract From Saturated Paste: Cations me / liter: Ca	Mg	Na	K	CO 3	HCO 3	Cl	SO 4		Water at Satur %	ESP %	SAR	CSP %	Gypsum %	Ext P_2O_5 ppm	Available Nutrients mg / 100 g: Ca	Mg	K
0- 23	.5													100		25.9			>100

Classification: Lithic Xerorthent, fine loamy, mixed, thermic.
Location: Sweida province, Syria. Approximately 18 km northeast of Sweida, 6 km southeast of Shahba, 10 m southeast of Shahba - Nemra road; approximate coordinates 32o 51' N Latitude and 36o 41' E longtitude.
Physiographic Position: Steep back slopes of low mountains; elevation about 1181 m.a.s.l.
Topography: very steep topography with a slope of 50 percent towards north.
Drainage: Well drained, very rapid surface run-off, moderate permeability.
Vegetation: Rangeland.
Parent Material: Neogene Basalt.
Sampled by: H. Yuksel and R. Rizek on October 4, 1980
Soil No.: SP 74



Hori.	Depth (cm)	Description
A1	0 - 23	Dark brown (7.5 YR 3/2 m) to brown (7.5 YR 4/2 d) clay loam; strong, fine, granular structure; hard (dry), firm (moist), sticky and plastic; many, fine, continuous, vertical and horizontal, inped, open pores; frequent, subrounded to angular gravel,constituting approximately 20 percent of the horizon; many, fine roots inside and between peds; abrupt, broken boundary; pH 7.8
R	23+	Saprolitic Basalt.

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SOIL SERIES _____ TAXONOMY _____ SOIL No. SP - 75

LOCATION _____ LAB Nos. 2110 - 2111 - 2112 - 2113 - 2114

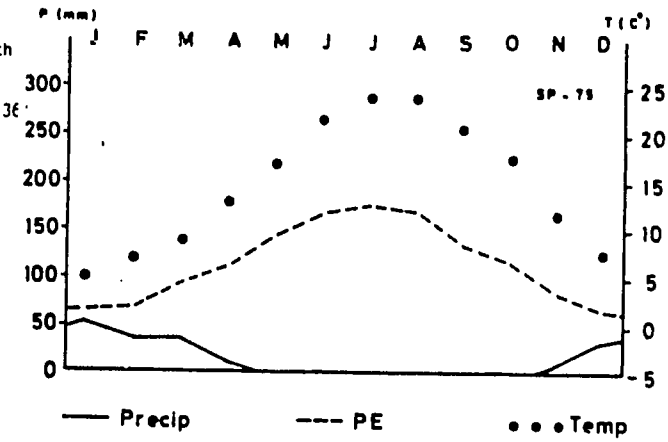
Depth (cm)	Horizon	Size Class and particle diameter (mm): Total Sand (2-0.05)	Total Silt (0.05-0.002)	Total Clay (<0.002)	Sand: Very coarse (2-1)	Sand: Coarse (1-0.5)	Sand: Medium (0.5-0.25)	Sand: Fine (0.25-0.1)	Sand: Very fine (0.1-0.05)	Silt: 0.05-0.02	Silt: 0.02-0.002				Coarse fragments: >2 % of whole soil	Coarse fragments: 2-19 % of <76 mm	Coarse fragments: 19-76 % of <76 mm	Texture class
		% of < 2 mm																
0- 4	A11	12	26	62														C
4- 18	A12	18	31	51														C
18- 52	B21	14	29	57														C
52- 75	B22	20	28	52														C
75-110	B23	18	24	58														C

Depth (cm)	Organic Carbon %	Nitrogen %	C / N	Ext. Iron as Fe %	Carbonate as $CaCO_3$ <2 mm %	Carbonate as $CaCO_3$ <0.002 mm %	Bulk Density 1/3 bar g/cc	Bulk Density oven dry g/cc		COLE	Water Contents 1/3 bar %	Water Contents 15 bar %				pH Satur. paste	pH H_2O	pH KCl
0- 4	.7				tr	tr					37.1	17.5					7.4	6.6
4- 18	.5				tr	tr					32.6	15.1					7.4	6.3
18- 52	.5				tr	tr					35.1	16.5					7.7	6.4
52- 75	.3				tr	tr					32.6	15.2					7.9	6.6
75-110	.3				tr	tr					34.9	16.4					8.0	6.8

Depth (cm)	Extractable Bases: Ca	Mg	Na	K	Sum (me / 100 g)	Ext Acidity	C. E. C.: Sum of Cations	Na OAc		Ext. Al me / 100 g	Ratios to clay: C. E. C	Ext. Fe	15 bar water	Ca/ Mg	Total Soluble Salts ppm		Base saturation: Sum of Cations %	Na OAc
0- 4				4.1				55.0			.9		.3					100.0
4- 18				2.6				60.0			1.2		.3					100.0
18- 52				1.2				60.0			1.1		.3					100.0
52- 75				.9				55.0			1.1		.3					100.0
75-110				.8				55.0			.9		.3					100.0

Depth (cm)	Electrical Conductivity mmho / cm	Water Extract From Saturated Paste: Cations Ca (me / liter)	Mg	Na	K	CO_3	HCO_3	Cl	SO_4	Water at Satur %	ESP %	SAR	CSP %	Gypsum %	Ext P_2O_5 ppm	Available Nutrients Ca (mg / 100 g)	Mg	K
0- 4	.5												100		20.6			>100
4- 18	.5												100		9.2			>100
18- 52	.5												100		9.2			>100
52- 75	.4												100		8.7			85.9
75-110	.4												100		8			72.7

Classification: Typic Xerochrepts, fine, mixed, thermic.
Location: Sweida province, Syria. Approximately 4 km north of Sweida, 12 km southwest of Shahba, near Atyl village, 20 m east of the Damascus-Sweida highway; approximate coordinates 32o 47' N latitude and 36o 36' E longtitude.
Physiographic Position: Shoulder of high mountains; elevation about 967 m.a.s.l.
Topography: Strongly sloping topography with a slope of 10 percent towards west.
Drainage: Well drained, medium surface run-off, slow permeability.
Vegetation: Rangeland.
Parent Material: Neogene Basalt.
Sampled by: H. Yuksel and R. Rizek on Nov. 6, 1980
Soil No.: SP - 75



Hori.	Depth (cm)	Description
A11	0 - 4	Dark brown (7.5 YR 3/2 m) to brown (7.5 YR 4/2 d) clay; moderate, fine, platy structure, breaking to moderate, fine, granular structure; approximately 1 cm wide cracks extending down to 60 cm; hard (dry), firm (moist); sticky and plastic; many, fine, continuous, horizontal, open pores; few, rounded gravel, constituting approximately 10 percent of the horizon; common, very fine to fine roots inside peds; abrupt, smooth boundary; pH 7.5
A12	4 - 18	Dark brown (7.5 YR 3/2 m) to brown (7.5 YR 4/2 d) clay; moderate, fine, subangular, blocky structure; hard (dry), firm (moist), sticky and plastic; frequent, fine, continuous, horizontal, open pores; few rounded gravel, constituting approximately 10 percent of the horizon; common, very fine to fine roots, inside peds; abrupt, wavy boundary; pH 7.2
B21	18 - 52	Dark brown (7.5 YR 3/2 m) clay; strong, medium to coarse,subangular, blocky structure; firm (moist), sticky and plastic; continuous, moderately thick cutanes, probably of clay minerals, on horizontal and vertical ped faces; few, fine, continuous, vertical and horizontal, inped, open pores; frequent stones and boulders constituting approximately 30 percent of the horizon; few, very fine roots, between peds; diffuse, smooth boundary, pH 7.6
B22	52 - 75	Dark brown (7.5 YR 3/2 m) clay; strong, medium, subangular blocky structure; firm (moist), very sticky and very plastic; continuous, moderately thick cutanes, probably of clay minerals, on horizontal and vertical ped faces; few, fine, continuous, vertical and horizontal inped, open pores; frequent stones and boulders, constituting approximately 30 percent of the horizon; few, very fine roots, between peds; diffuse, smooth boundary; pH 7.8
B23	75 - 110	Dark brown (7.5 YR 3/2 m) clay; firm (moist), very sticky and very plastic; continuous, moderately thick cutanes, probably of clay minerals, on horizontal and vertical ped faces; pH 8.0

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SOIL SERIES _____ TAXONOMY _____ SOIL No SP - 76

LOCATION _____ LAB Nos. 2115 - 2116

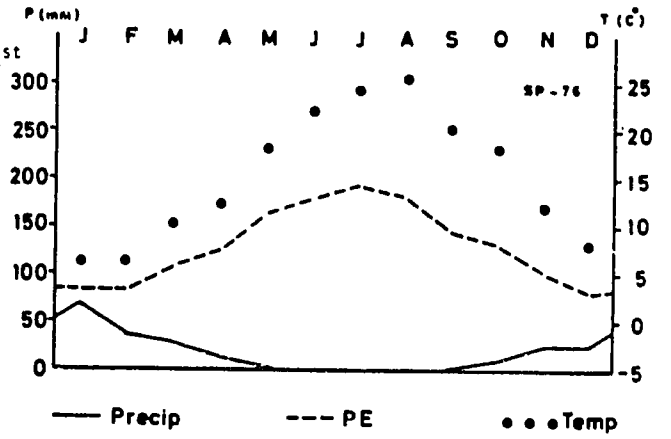
Depth (cm)	Horizon	Size Class and particle diameter (mm) — Total: Sand (2-0.05)	Total: Silt (0.05-0.002)	Total: Clay (<0.002)	Sand: Very coarse (2-1)	Sand: Coarse (1-0.5)	Sand: Medium (0.5-0.25)	Sand: Fine (0.25-0.1)	Sand: Very fine (0.1-0.05)	Silt: 0.05-0.02	Silt: 0.02-0.002	Coarse fragments: >2 % of whole soil	Coarse fragments: 2-19 % of <76 mm	Coarse fragments: 19-76 % of <76 mm	Texture class
		% of < 2 mm													
0- 9	A1	28	22	50											C
9- 31	B2	32	24	44											C

Depth (cm)	Organic Carbon %	Nitrogen %	C / N	Ext. Iron as Fe %	Carbonate as Ca Co 3 < 2 mm %	Carbonate as Ca Co 3 < 0.002 mm %	Bulk Density 1/3 bar g/cc	Bulk Density ovendry g/cc	COLE	Water Contents 1/3 bar %	Water Contents 15 bar %	Satur. paste	pH H_2O	pH KCl
0- 9	.1				24.0	2.5				30.8	14.2		8.2	7.0
9- 31	.1				10.5	1.0				28.2	12.9		7.9	7.0

Depth (cm)	Extractable Bases Ca (me / 100 g)	Mg	Na	K	Sum	Ext Acidity	C. E. C. Sum of Cations	C. E. C. Na OAc	Ext. Al me / 100 g	Ratios to clay C. E. C	Ext. Fe	15 bar water	Ca / Mg	Total Solu. Salts ppm	Base saturation Sum of Cations %	Base saturation NaOAc %
0- 9				5.1				32.0		.6		.3				100.0
9- 31				2.3				33.0		.8		.3				100.0

Depth (cm)	Electrical Conductivity mmho / cm	Water Extract From Saturated Paste — Cations Ca (me / liter)	Mg	Na	K	CO 3	HCO 3	Cl	SO 4	Water at Satur %	ESP %	SAR	CSP %	Gypsum %	Ext P_2O_5 ppm	Available Nutrients Ca (mg / 100 g)	Mg	K
0- 9	.7												100		17.2			>100
9- 31	4.5												100		11.4			>100

Classification: Lithic Camborthids, fine, mixed, thermic.
Location: Sweida province, Syria. Approximately 34 km east of Sweida, 32 km southeast of Shahba, 10 m north of Sweida-Sab' Biar road; approximate coordinates 32o 46' N latitude and 36o 57' E longtitude.
Physiographic Position: Level plains; elevation about 900 m.a.s.l.
Topography: Gently sloping topography with a slope of 4 percent towards east.
Drainage: Well drained, slow surface run-off, moderate permeability.
Vegetation: Rangeland.
Parent Material: Neogene basalt.
Sampled by: H. Yuksel and R. Rizek on Nov. 6, 1980.
Soil No.: SP - 76



Hori.	Depth (cm)	Description
A1	0 - 9	Yellowish brown (10 YR 5/6 m) to brownish yellow (10 YR 6/6 d) clay; weak, medium, subangular blocky structure; hard (dry), firm (moist), sticky and plastic; many fine to medium, continuous, vertical and horizontal, inped, open pores; dominant, rounded to subrounded gravel, constituting approximately 60 percent of the horizon; clear, smooth boundary; pH 8.1
B2	9 - 31	Brown (7.5 YR 4/4 m) to strong brown (7.5 YR 5/6 d) clay; massive; hard (dry), firm (moist), sticky and plastic; dominant, rounded to subrounded gravel, constituting approximately 80 percent of the horizon; clear, broken boundary; pH 7.8
R	31+	Bedrock.

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SOIL SERIES _____ TAXONOMY _____ SOIL. No. SP - 77

LOCATION _____ LAB Nos. 2117 - 2118 - 2119 - 2120

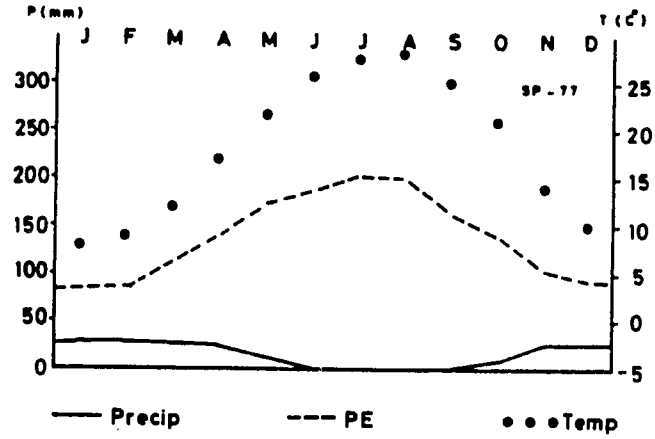
Depth (cm)	Horizon	Size Class and particle diameter (mm): Total Sand (2-0.05)	Total Silt (0.05-0.002)	Total Clay (<0.002)	Sand: Very coarse (2-1)	Sand: Coarse (1-0.5)	Sand: Medium (0.5-0.25)	Sand: Fine (0.25-0.1)	Sand: Very fine (0.1-0.05)	Silt 0.05-0.02	Silt 0.02-0.002	Coarse fragments >2 mm % of whole soil	Coarse fragments 2-19 mm % of <76 mm	Coarse fragments 19-76 mm % of <76 mm	Texture class
		% of < 2 mm													
0- 9	A1	46	34	20											L
9- 37	B21	28	27	45											C
37- 64	B22	32	34	34											CL
64+	C	17	31	52											C

Depth (cm)	Organic Carbon %	Nitrogen %	C / N	Ext. Iron as Fe %	Carbonate as $CaCO_3$ <2 mm %	Carbonate as $CaCO_3$ <0.002 mm %	Bulk Density 1/3 bar g/cc	Bulk Density oven dry g/cc	COLE	Water Contents 1/3 bar %	Water Contents 15 bar %				pH Satur paste	pH H_2O	pH KCl
0- 9	.1				26.5	4.0				18.2	7.6					7.8	7.0
9- 37	.1				25.0	3.0				29.1	13.3					7.9	7.2
37- 64	.1				21.0	3.0				24.9	11.1					7.7	7.2
64+	.0				18.5	4.0				33.0	15.4					7.8	7.2

Depth (cm)	Extractable Bases me / 100 g: Ca	Mg	Na	K	Sum	Ext Acidity	C. E. C. Sum of Cations	C. E. C. NaOAc		Ext. Al me / 100 g	Ratios to clay: C. E. C	Ext. Fe	15 bar water	Ca/Mg	Total Soluble Salts ppm		Base saturation Sum of Cations %	Base saturation NaOAc %
0- 9				3.9				32.0			1.6		.4					100.0
9- 37				1.4				42.0			.9		.3					100.0
37- 64				.9				42.0			1.2		.3					100.0
64+				1.2				45.0			.9		.3					100.0

Depth (cm)	Electrical Conductivity mmho / cm	Water Extract From Saturated Paste: Cations me / liter: Ca	Mg	Na	K	CO_3	HCO_3	Cl	SO_4	Water at Satur %	ESP %	SAR	CSP %	Gypsum %	Ext P_2O_5 ppm	Available Nutrients mg / 100 g: Ca	Mg	K
0- 9	7.0												100	tr	23.2			>100
9- 37	12.0												100	tr	8.0			>100
37- 64	14.5												100	tr	5.3			87.3
64+	0.5												100	tr	4.6			>100

Classification: Typic Camborthid, fine loamy, mixed, thermic.
Location: Sweida province, Syria. Approximately 44 km east of Sweida, 32 km southwest of Zalaf, 20 m north of Sweida-Zalaf road; approximate coordinates 32o 47' N Latitude and 37o 3' E longtitude.
Physiographic Position: Level to gently undulating plains; elevation about 778 m.a.s.l.
Topography: Gently sloping topography with a slope of 45 percent towards southwest.
Drainage: Well drained, slow surface run-off, moderate permeability.
Vegetation: Rangeland.
Parent Material: Neogene Basalt.
Sampled by: H. Yuksel and R. Rizek on Nov. 6, 1980
Soil No.: SP - 77



Hori.	Depth (cm)	Description
A1	0 - 9	Yellowish brown (10 YR 5/6 m) to strong brown (7.5 YR 5/8 d) loam; weak, fine, subangular, blocky structure, breaking to weak, fine, granular structure; soft (dry), friable (moist), slightly sticky and slightly plastic; many, fine to medium, continuous, vertical and horizontal inped, open pores; few, rounded gravel, constituting approximately 5 percent of the horizon; few, very fine roots, inside peds; clear, smooth boundary; pH 7.4
B21	9 - 37	Yellowish brown (10 YR 5/6 m to 10 YR 5/8 d) clay; moderate, medium, subangular blocky structure; slightly hard (dry), firm (moist), slightly sticky and slightly plastic; many, fine to medium, continuous, vertical and horizontal, inped, open pores; few, small, soft, local carbonate powder on ped faces; clear, smooth boundary; pH 7.9
B22	37 - 64	Yellowish red (5 YR 4/6 m) clay loam; moderate, medium, subangular, blocky structure; slightly hard (dry), firm (moist), slightly sticky and slightly plastic; few, fine, discontinuous, vertical, inped, closed pores; clear, smooth boundary; pH 7.8
C	64+	Yellowish red (5 YR 4/6 m) clay; weak, medium, subangular, blocky structure; slightly hard (dry), friable (moist), slightly sticky and slightly plastic; pH 7.8

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SOIL SERIES _____ TAXONOMY . _____ SOIL. No. SP - 78

LOCATION _____ LAB Nos. 23 - 24 - 25 - 26 - 27

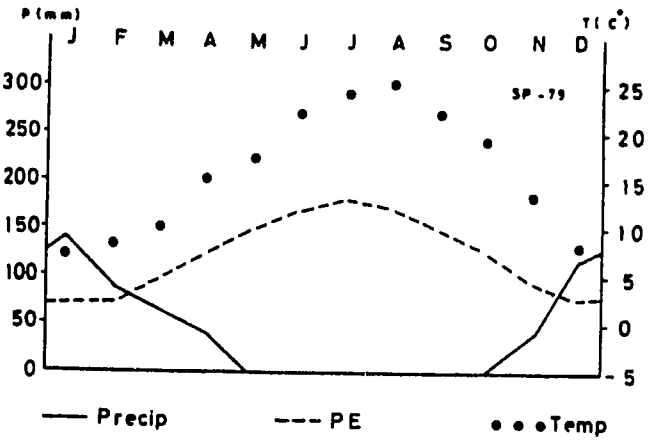
Depth (cm)	Horizon	Size Class and particle diameter (mm) — Total: Sand (2-0.05)	Silt (0.05-0.002)	Clay (<0.002)	Sand: Very coarse (2-1)	Coarse (1-0.5)	Medium (0.5-0.25)	Fine (0.25-0.1)	Very fine (0.1-0.05)	Silt: 0.05-0.02	0.02-0.002	Coarse fragments: >2 % of whole soil	2-19 % (of <76 mm)	19-76 % (of <76 mm)	Texture class
		% of < 2 mm													
0- 6	A11	40	32	28											CL
6- 20	A12	20	32	48											C
20- 35	B21	24	29	47											C
35- 76	B22	30	26	44											C
76- -1	B3	38	28	34											CL

Depth (cm)	Organic Carbon %	Nitrogen %	C / N	Ext. Iron as Fe %	Carbonate as Ca Co 3 <2 mm	<0.002 mm	Bulk Density 1/3 bar	ovendry (g / cc)	COLE	Water Contents 1/3 bar	15 bar (%)	pH Satur. paste	H_2O	KCl
0- 6	1.0				3.5	3.0				21.7	9.5		6.9	5.4
6- 20	.5				3.0	.5				31.3	14.5		6.7	5.3
20- 35	.2				2.0	.5				30.4	14.0		6.6	5.2
35- 76	.3				3.5	.5				28.5	13.0		7.0	5.6
76- -1	.8				3.5	.5				24.0	10.7		6.9	5.6

Depth (cm)	Extractable Bases (me / 100 g) Ca	Mg	Na	K	Sum	Ext Acidity	C. E. C. Sum of Cations	Na OAc	Ext. Al me / 100 g	Ratios to clay C. E. C	Ext. Fe	15 bar water	Ca / Mg	Total Solu. Salts ppm	Base saturation Sum of Cations (%)	NaOAc
0- 6	13.0	8.0	.6	.2	21.8			33.0		1.2		.3				66.1
6- 20	13.0	11.0	.6	.1	24.7			36.0		.8		.3				68.6
20- 35	16.0	10.0	.8	.2	27.0			46.0		1.0		.3				58.7
35- 76	17.0	11.0	1.4	.1	29.5			44.0		1.0		.3				67.0
76- -1	17.0	12.0	1.1	.1	30.2			46.0		1.4		.3				65.7

Depth (cm)	Electrical Conductivity mmhe / cm	Water Extract From Saturated Paste (me / liter) Cations: Ca	Mg	Na	K	CO 3	HCO 3	Cl	SO 4	Water at Satur %	ESP %	SAR	CSP %	Gypsum %	Ext P_2O_5 ppm	Available Nutrients (mg / 100 g) Ca	Mg	K
0- 6	.3										1	.7	37		36.6	364.0	148.6	18.9
6- 20	.3										1	.7	36		42.9	364.0	204.4	9.4
20- 35	.3										1	.8	34		66.4	448.0	185.8	18.9
35- 76	.3										3	1.2	38		61.8	476.0	204.4	9.4
76- -1	.4										2	1.0	36		66.4	476.0	223.0	9.4

Classification: Typic Haploxeralf, fine, mixed, thermic.
Location: Homs province, Syria. Approximately 24 km west of Homs, 12 km northwest of Qatina lake, 6 km southeast of Shin, 8 km north of Homs - Tartous highway; approximate coordinates 34o 44' N latitude and 36o 29' E longtitude.
Physiographic position: Backslopes of high hills, elevation about 662 m.a.s.l.
Topography: Steep topography with a characteristic slope of 30 percent towards southeast.
Drainage: Well drained, rapid surface run-off, slow permeability.
Vegetation: Rangeland.
Parent Material: Neogene Basalt.
Sampled by: H. Yuksel and A. Jaber on Dec. 8, 1980
Soil No.: SP - 78



Hori.	Depth (cm)	Description
A11	0 - 6	Reddish brown (5 YR 4/3 m) clay loam; moderate, fine, subangular, blocky structure, breaking to moderate, fine, granular structure; hard (dry), friable (moist), sticky and slightly plastic; many, fine, continuous, random, inped, open pores; many, ery fine roots, clear, wavy boundary; pH 6.9
A12	6 - 20	Drak reddish brown (5 YR 3/3 m) clay; moderate, fine, subangular, blocky structure, breaking to moderate, fine, granular structure; firm (moist), sticky and plastic; broken, thin cutanes, probably of clay minerals, on horizontal and vertical ped faces; common, very fine to fine roots; clear wavy boundary; pH 6.7
B21	20 - 35	Dark reddish brown (5 YR 3/4 m) clay; strong, medium, subangular blocky structure; firm (moist); sticky and plastic; continuous, moderately thick cutanes, probably of clay minerals, on horizontal and vertical ped faces; few, very fine roots, clear, wavy boundary; pH 6.6
B22	35 - 76	Dark reddish brown (5 YR 3/4 m) clay; strong, coarse, subangular, blocky structure; very firm; sticky and plastic, broken thin cutanes, probably of clay minerals, on horizontal and vertical ped faces; few, very fine roots, gradual, wavy boundary; pH 7
B3	76+	Dark brown (7.5 YR 4/4 m) clay loam; weak, coarse, subangular, blocky structure; friable (moist), sticky and slightly plastic; patchy thin cutanes, probably of clay minerals, on horizontal and vertical ped faces; few angular stones, constituting approximately 10 percent of the horizon; pH 6.9

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SOIL SERIES _____ TAXONOMY _____ SOIL No SP - 79

LOCATION _____ LAB Nos. 28 - 29

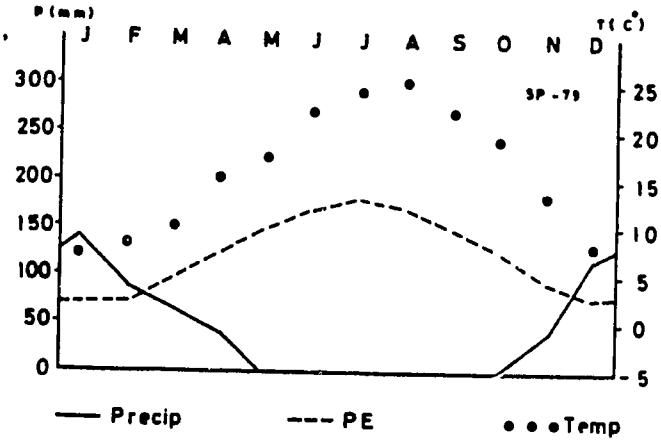
Depth (cm)	Horizon	Size Class and particle diameter (mm) — Total: Sand (2-0.05)	Total: Silt (0.05-0.002)	Total: Clay (<0.002)	Sand: Very coarse (2-1)	Sand: Coarse (1-0.5)	Sand: Medium (0.5-0.25)	Sand: Fine (0.25-0.1)	Sand: Very fine (0.1-0.05)	Silt: 0.05-0.02	Silt: 0.02-0.002				Coarse fragments: >2 % of whole soil	Coarse fragments: 2-19 mm	Coarse fragments: 19-76 mm	Texture class
		% of < 2 mm														% of <76 mm		
0- 6	A11	43	39	18														CL
6- 29	A12	62	27	11														SL

Depth (cm)	Organic Carbon %	Nitrogen %	C / N	Ext. Iron as Fe %	Carbonate as Ca Co 3 <2 mm %	Carbonate <0.002 mm %	Bulk Density 1/3 bar g/cc	Bulk Density oven dry g/cc	COLE	Water Contents 1/3 bar %	Water Contents 15 bar %				pH Satur paste	pH H_2O	pH KCl
0- 6	.8				.5	3.5				18.0	7.5					6.9	5.6
6- 29	.5				.5	1.0				12.9	4.8					7.0	5.6

Depth (cm)	Extractable Bases Ca	Mg	Na	K	Sum (me / 100 g)	Ext Acidity	C. E. C. Sum of Cations	C. E. C. Na OAc		Ext. Al me / 100 g	Ratios to clay C. E. C	Ratios to clay Ext. Fe	Ratios to clay 15 bar water	Ca / Mg	Total Solu. Salts ppm		Base saturation Sum of Cations %	Base saturation Na OAc
0- 6	11.0	4.0	.2	.3	15.5			26.0			1.4		.4					59.6
6- 29	10.0	5.0	.2	.2	15.4			24.0			2.2		.4					64.2

Depth (cm)	Electrical Conductivity mmho / cm	Water Extract From Saturated Paste — Cations Ca	Mg	Na	K	CO 3	HCO 3	Cl	SO 4	Water at Satur %	ESP %	SAR	CSP %	Gypsum %	Ext P_2O_5 ppm	Available Nutrients Ca	Mg	K
		me / liter														mg / 100 g		
0- 6	.3										0	.3	42		41.2	308.0	74.3	28.3
6- 29	.3										0	.4	41		34.3	280.0	92.9	18.9

Classification: Lithic Xerorthents, coarse loamy, mixed, thermic.
Location: Homs province, Syria. Approximately 30 km northwest of Homs, 16 km northwest of Crack des Chevaliers, 12 km north of Homs-Tartous highway; approximate coordinates 34o 49' N latitude and 36o 25' E longtitude.
Physiographic Position: Steep side slopes of low mountains; elevation 945 m.a.s.l.
Topography: Mountainous topography with a characteristic slope of 75 percent or more towards west.
Drainage: Excessively drained, very rapid surface run-off, moderate permeability.
Vegetation: Rangeland and low bush.
Parent Material: Neogene Basalt.
Sampled by: H. Yuksel and Adib Jaber on Dec. 9, 1980
Soil No.: SP - 79



Hori.	Depth (cm)	Description
A11	0 - 6	Dark brown (10 YR 3/3 m) clay loam; moderate, fine, granular structure; hard (dry), friable (moist), slightly sticky and slightly plastic; few, fine, discontinuous, random, inped, closed pores; few, rounded gravel constituting approximately 10 percent of the horizon; many fine roots, inside peds; clear, wavy boundary; pH 6.9
A12	6 - 29	Dark brown (10 YR 4/4 m) sandy loam; moderate, medium, subangular, blocky structure; slightly hard (dry), very friable (moist), slightly sticky, non plastic; many, fine, discontinuous, random, inped, closed pores; frequent rounded gravel constituting approximately 15 percent of the horizon; few, fine roots inside peds; abrupt, broken boundary; pH 7
R	29+	Bedrock.

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SOIL SERIES _____ TAXONOMY : _____ SOIL No SP - 80

LOCATION _____ LAB Nos. 30 - 31 - 32 - 33

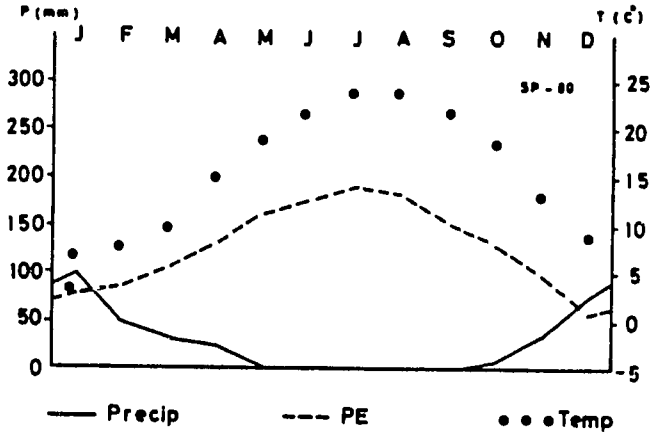
Depth (cm)	Horizon	Size Class and particle diameter (mm) — Total: Sand (2-0.05)	Silt (0.05-0.002)	Clay (<0.002)	Sand: Very coarse (2 - 1)	Coarse (1 - 0.5)	Medium (0.5 - 0.25)	Fine (0.25 - 0.1)	Very fine (0.1 - 0.05)	Silt: 0.05 - 0.02	0.02 - 0.002				Coarse fragments: >2 % of whole soil	2 - 19 %	19 -76 %	Texture class
		% of < 2 mm														% of <76 mm		
0- 17	A11	30	16	54														C
17- 36	B21	40	26	34														CL
36- 60	B22	29	15	56														C
60- 91	B23	32	16	52														C

Depth (cm)	Organic Carbon %	Nitrogen %	C / N	Ext. Iron as Fe %	Carbonate as Ca Co 3 < 2 mm %	< 0.002 mm %	Bulk Density 1/3 bar g / cc	oven dry g / cc		COLE	Water Contents 1/3 bar %	15 bar %				pH Satur. paste	H_2O /	K Cl /
0- 17	.7				10.0	5.0					31.8	14.8					7.7	6.7
17- 36	.9				6.0	3.5					23.7	10.5					8.0	6.7
36- 60	1.0				6.0	6.0					32.6	15.2					7.9	6.5
60- 71	.5				12.0	8.0					30.9	14.3					8.0	6.8

Depth (cm)	Extractable Bases Ca	Mg	Na	K	Sum (me / 100 g)	Ext Acidity	C. E. C. Sum of Cations	Na OAc		Ext. Al me / 100 g	Ratios to clay C. E. C	Ext. Fe	15 bar water	Ca/ Mg	Total Solu. Salts ppm		Base saturation Sum of Cations %	NaOAc %
0- 17	25.0	3.0	.4	1.0	29.4			42.0			.8		.3					70.0
17- 36	29.0	4.0	.5	.7	34.2			46.0			1.4		.3					74.3
36- 60	29.0	4.0	.5	.6	34.1			46.0			.8		.3					74.1
60- 71	27.0	3.0	.5	.5	31.0			40.0			.8		.3					77.5

Depth (cm)	Electrical Conductivity mmho / cm	Water Extract From Saturated Paste — Cations: Ca	Mg	Na	K	CO 3	HCO 3	Cl	SO 4	Water at Satur %	ESP %	SAR	CSP %	Gypsum %	Ext P_2O_5 ppm	Available Nutrients Ca	Mg	K
		me / liter														mg / 100 g		
0- 17	.9										0	.4	59		22.9	700.0	55.7	94.4
17- 36	.4										1	.5	63		22.9	812.0	74.3	66.1
36- 60	.5										1	.6	63		22.9	812.0	74.3	56.6
60- 71	.5										1	.6	67		18.9	756.0	55.7	47.2

Classification: Typic Xerochrepts, fine, mixed, thermic.
Location: Homs province, Syria. Approximately 14 km Southwest of Homs, 2.5 km east of Katina Lake, 20 m east of Homs - Balbak highway; approximate coordinates 34o 38' N Latitude and 36o 39' longtitude.
Physiographic Position: Level to gently undulating terrace, elevation about 760 m.a.s.l.
Topography: Level topography with a characteristic slope of 1 percent.
Drainage: Well drained, very slow surface run-off, moderately slow permeability.
Vegetation: Rainfed agriculture.
Parent Material: Quaternary or more recent deposits derived mainly from Neogene and/or Paleogene Limestone.
Sampled by: H. Yuksel and A. Jaber on Dec. 9, 1980
Soil No.: SP - 80



Hori.	Depth (cm)	Description
A11	0 - 17	Dark reddish brown (2.5 YR 3/4 m) to red (2.5 YR 4/6 d) clay; moderate, medium, subangular blocky structure; hard (dry), firm (moist) sticky and plastic; few and frequent, fine, continuous, random, inped, open pores; few rounded gravel, constituting approximately 5 percent of the horizon; few, insect nests and worm casts; many, fine to medium roots inside peds, clear, smooth boundary; pH 7.7
B21	17 - 36	Dark reddish brown (2.5 YR 3/4 m) to dark red (2.5 YR 3/6 d) loam to clay loam; strong coarse, subangular blocky structure; hard (dry), friable (moist), slightly sticky and slightly plastic; few, fine, continuous, random, inped, open pores; few, rounded gravel, constituting approximately 5 percent of the horizon; common, fine to medium roots inside peds; diffuse, smooth boundary, pH 8
B22	36 - 60	Dark reddish brown (2.5 YR 3/4 m) to dark red (2.5 YR 3/6 d) clay; strong, coarse, subangular blocky structure; very hard (dry), firm (moist), sticky and plastic; few, fine, continuous, random, inped, open pores; few rounded gravel, constituting approximately 5 percent of the horizon; few, fine to medium roots inside peds; abrupt, smooth boundary; pH 7.9
B23 ca	60 - 91	Dark reddish brown (2.5 YR 3/4 m) to dark red (2.5 YR 3/6 d) clay; moderate, coarse, subangular blocky structure; very hard (dry), firm (moist), sticky and plastic; few, fine, continuous, random, inped, closed pores; few rounded gravel, constituting approximately 10 percent of the horizon; few, large, soft carbonate coatings on ped faces; few, medium roots inside peds; abrupt, wavy boundary; pH 8
R	91+	Bedrock.

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SOIL SERIES _____ TAXONOMY _____ SOIL. No. SP - 81

LOCATION _____ LAB Nos. 34 - 35 - 36

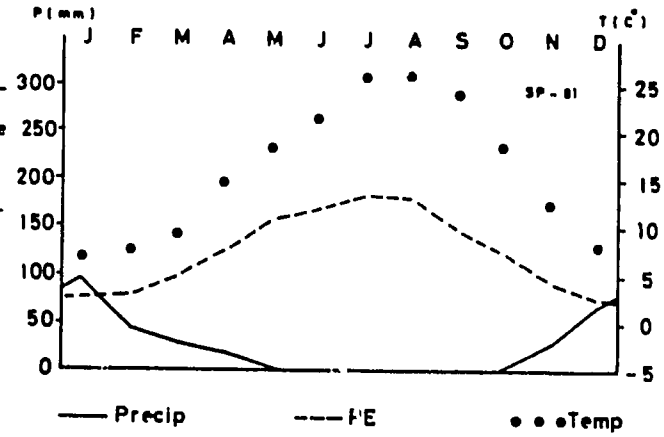
Depth (cm)	Horizon	Size Class and particle diameter (mm)																Texture class
		Total			Sand					Silt					Coarse fragments			
		Sand (2-0.05)	Silt (0.05-0.002)	Clay (<0.002)	Very coarse (2 - 1)	Coarse (1 - 0.5)	Medium (0.5 - 0.25)	Fine (0.25 - 0.1)	Very fine (0.1 - 0.05)	0.05 - 0.02	0.02 - 0.002				>2 % of whole soil	2 - 19 %	19 -76 %	
		% of < 2 mm														% of <76 mm		
0- 14	A1	49	26	25														CL
14- 36	B21	44	31	25														L
36- 64	B22	36	19	45														L

Depth (cm)	Organic Carbon %	Nitrogen %	C / N	Ext. Iron as Fe %	Carbonate as Ca Co 3 < 2 mm %	Carbonate as Ca Co 3 < 0.002 mm %	Bulk Density 1/3 bar g / cc	Bulk Density ovendry g / cc	COLE	Water Contents 1/3 bar %	Water Contents 15 bar %				pH Satur. paste	pH H_2O /	pH K Cl /
0- 14	1.0				3.5	3.5				19.4	8.3					8.2	6.9
14- 36	.8				3.5	3.0				20.2	8.6					8.0	7.0
36- 64	1.3				6.5	4.0				28.0	12.7					7.9	7.0

Depth (cm)	Extractable Bases Ca	Mg	Na	K	Sum	Ext Acidity	C. E. C Sum of Cations	C. E. C Na OAc		Ext. Al me / 100 g	Ratios to clay C. E. C	Ext. Fe	15 bar water	Ca / Mg	Total Solu. Salts ppm		Base saturation Sum of Cations %	Base saturation Na OAc %
	me / 100 g																	
0- 14	21.0	2.0	.4	.7	24.1			34.0			1.4		.3					70.9
14- 36	19.0	2.0	.4	.6	22.0			34.0			1.4		.3					64.7
36- 64	24.0	5.0	.4	.5	29.9			30.0			.7		.3					99.7

Depth (cm)	Electrical Conductivity mmho / cm	Water Extract From Saturated Paste: Cations Ca	Mg	Na	K	CO 3	HCO 3	Cl	SO 4	Water at Satur %	ESP %	SAR	CSP %	Gypsum %	Ext P_2O_5 ppm	Available Nutrients Ca mg / 100 g	Mg	K
		me / liter																
0- 14	.5										1	.5	61		45.8	588.0	37.2	66.1
14- 36	.7										1	.5	55		34.3	532.0	37.2	56.6
36- 64	1.0										1	.5	80		29.8	672.0	92.9	47.2

Classification: Ruptic-Lithic Xerochrepts, coarse loamy, mixed, thermic.
Location: Homs province, Syria. Approximately 20 km south of Homs, 6 km south of Shinshar, 16 km south-east of Qatina Lake, 30 m west of Damascus -Homs highway; approximate coordinates 34o 34' N latitude and 36o 43' E longtitude.
Physiographic Position: Gently undulating plains, elevation about 690 m.a.s.l.
Topography: Gently sloping topography with a characteristic slope of 3 percent towards east.
Drainage: Well drained, slow surface run-off, moderate permeability.
Vegetation: Rainfed agriculture.
Parent Material: Neogene and/or Paleogene Limestone.
Sampled by: H. Yuksel and A. Jaber on Dec. 9, 1980
Soil No.: SP - 81



Hori.	Depth (cm)	Description
A1	0 - 19	Dark reddish brown (2.5 YR 3/4 m) to red (2.5 YR 4/6 d) sandy clay loam; moderate, medium, subangular blocky structure; slightly hard (dry), friable (moist), sticky and slightly plastic; frequent, fine, continuous, random, inped, open pores; few, subrounded gravel, constituting approximately 10 percent of the horizon; common, very fine to fine roots, inside peds; clear, smooth boundary; pH 8.2
B 21	19 - 36	Reddish brown (5 YR 4/4 m) to yellowish red (5 YR 4/6 d) loam; moderate, coarse, subangular blocky structure; hard (dry), friable (moist), slightly sticky and slightly plastic; few, fine, continuous, random, inped, open pores; frequent, subrounded gravel, constituting approximately 25 percent of the horizon; few, very fine roots inside peds; clear, smooth boundary; pH 8
B22	36 - 64	Reddish brown (5 YR 4/4 m) to yellowish red (5 YR 4/6 d) loam; weak, coarse, subangular blocky structure; hard (dry), friable (moist), slightly sticky and slightly plastic; few, very fine, discontinuous, random, inped, closed pores; abundant, subrounded gravel, constituting approximately 45 percent of the horizon; few, very fine roots inside peds; abrupt, broken boundary; pH 7.9
R	64+	Bedrock.

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DEPARTMENT OF SOIL SURVEY

SOIL SERIES _____ TAXONOMY : _____ SOIL No. SP - 82

LOCATION _____ LAB Nos. 37 - 38 - 39 - 40

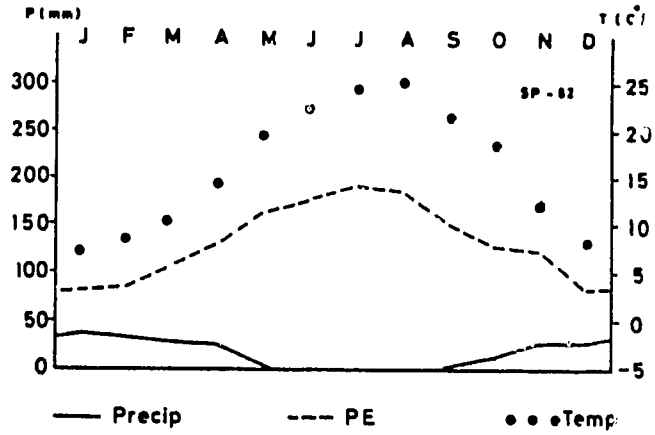
Depth (cm)	Horizon	Size Class and particle diameter (mm) — Total: Sand (2-0.05)	Total: Silt (0.05-0.002)	Total: Clay (<0.002)	Sand: Very coarse (2-1)	Sand: Coarse (1-0.5)	Sand: Medium (0.5-0.25)	Sand: Fine (0.25-0.1)	Sand: Very fine (0.1-0.05)	Silt: 0.05-0.02	Silt: 0.02-0.002	Coarse fragments: >2 % of whole soil	Coarse fragments: 2-19 % of <76 mm	Coarse fragments: 19-76 % of <76 mm	Texture class
		% of < 2 mm													
0- 4	A1	24	31	45											C
4- 28	B21	18	24	58											C
28- 58	B22	16	28	56											C
58-105	B3	12	24	64											C

Depth (cm)	Organic Carbon %	Nitrogen %	C / N	Ext. Iron as Fe %	Carbonate as $CaCO_3$ <2 mm %	Carbonate as $CaCO_3$ <0.002 mm %	Bulk Density 1/3 bar g/cc	Bulk Density ovendry g/cc	COLE	Water Contents 1/3 bar %	Water Contents 15 bar %	pH Satur. paste	pH H_2O	pH KCl
0- 4	1.1				34.5	16.0				29.7	13.6		8.1	7.3
4- 28	.6				38.0	16.0				34.9	16.4		8.3	7.3
28- 58	.4				34.0	15.0				34.5	16.2		8.3	7.2
58-105	.2				34.5	15.0				37.8	17.9		8.4	7.1

Depth (cm)	Extractable Bases Ca	Mg	Na	K	Sum (me / 100 g)	Ext Acidity	C. E. C. Sum of Cations	C. E. C. Na OAc	Ext. Al me / 100 g	Ratios to clay C. E. C	Ratios to clay Ext. Fe	Ratios to clay 15 bar water	Ca/Mg	Total Solu. Salts ppm	Base saturation Sum of Cations %	Base saturation Na OAc %
0- 4		7.0	.4	1.6				28.0		.6		.3				100.0
4- 28		9.0	.4	1.1				28.0		.5		.3				100.0
28- 58		8.0	.6	.4				28.0		.5		.3				100.0
58-105		9.0	.9	.4				34.0		.5		.3				100.0

Depth (cm)	Electrical Conductivity mmho / cm	Water Extract From Saturated Paste: Cations Ca (mg / liter)	Mg	Na	K	CO_3	HCO_3	Cl	SO_4	Water at Satur %	ESP %	SAR	CSP %	Gypsum %	Ext P_2O_5 ppm	Available Nutrients Ca (mg / 100 g)	Mg	K
0- 4	.8										1	.4	100	tr	45.8			>100
4- 28	.4										1	.4	100	tr	38.9			>100
28- 58	.0										2	.7	100	tr	38.9			37.8
58-105	.0										2	.9	100	tr	27.4			37.8

Classification: Xerollic Calciorthids, fine, mixed, thermic.
Location: Homs province, Syria. Approximately 46 km east of Homs, 6 km east of Frouglous, 20 m north of the Homs- Palmyra highway; approximate coordinates 34o 35' N latitude and 37o 10' E longtitude.
Physiographic Position: Gently undulating plains, elevation about 790 m.a.s.l.
Topography: Gently sloping topography with a slope of 3 percent towards north.
Drainage: Well drained, slow surface run-off, slow permeability.
Vegetation: Rangeland.
Parent Material: Quaternary or more recent deposits derived mainly from Neogene and/or Paleogene Limestone.
Sampled by: H. Yuksel and A. Jaber on Dec. 10, 1980
Soil No.: SP - 82



Hori.	Depth (cm)	Description
A1	0 - 4	Yellowish brown (10 YR 5/6 m) to very pale brown (10 YR 7/3 d) clay; weak, very fine, granular structure; hard (dry), firm (moist), sticky and plastic; frequent, fine, continuous, random, inped, open pores; few, very fine to fine roots inside peds; abrupt smooth boundary; pH 8.1
B21	4 - 28	Yellowish brown (10 YR 5/6 m) to light yellowish brown (10 YR 6/4 d) clay; weak, fine, subangular blocky structure; very hard (dry), firm (moist), sticky and plastic; few, very fine to fine roots inside peds; gradual, smooth boundary; pH 8.3
B22	28 - 58	Yellowish brown (10 YR 5/6 m) to brownish yellow (10 YR 6/6 d) clay; weak, fine, subangular blocky structure ; very hard (dry), firm (moist), sticky and plastic; few, fine, discontinuous, random, inped, open pores; diffuse, smooth boundary; pH 8.3
B3	58 - 105	Light yellowish brown (10 YR 6/4 m) to brownish yellow (10 YR 6/6) clay; massive structure; very hard (dry), firm (moist), sticky and plastic; pH 8.4

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DEPARTMENT OF SOIL SURVEY

SOIL SERIES _____ TAXONOMY : _____ SOIL. No SP - 83

LOCATION _____ LAB Nos. 885 - 886 - 887 - 888

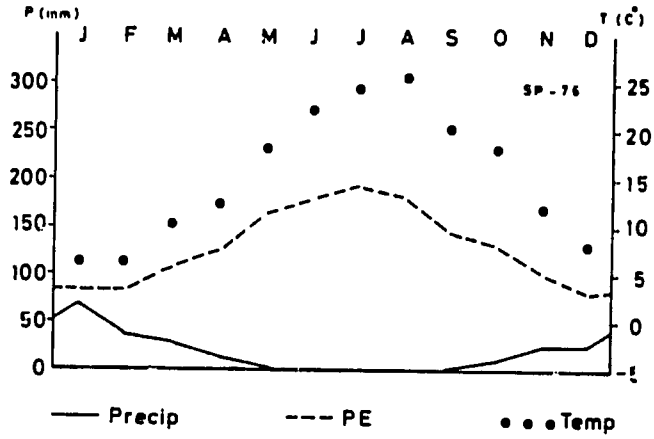
Depth (cm)	Horizon	Size Class and particle diameter (mm) Total: Sand (2-0.05)	Silt (0.05-0.002)	Clay (<0.002)	Sand: Very coarse (2 - 1)	Coarse (1 - 0.5)	Medium (0.5 - 0.25)	Fine (0.25 - 0.1)	Very fine (0.1 - 0.05)	Silt: 0.05 - 0.02	0.02 - 0.002	Coarse fragments: >2 % of whole soil	2 - 19 % of <76 mm	19-76 % of <76 mm	Texture class
		% of < 2 mm													
0- 16	A1	56	233	21											SCL
16- 56	B21	24	28	48											C
56- 84	B22	23	27	50											C
84-	B23	24	28	48											C

Depth (cm)	Organic Carbon %	Nitrogen %	C / N	Ext. Iron as Fe %	Carbonate % Ca Co 3: < 2 mm	< 0.002 mm	Bulk Density 1/3 bar	ovendry g / cc	COLE	Water Contents 1/3 bar %	15 bar %	pH Satur. paste	H_2O	K Cl
0- 16	1.3				20.0	8.6				52.6	25.6		7.7	7.1
16- 56	.2				27.0	9.7				30.7	14.2		8.2	7.1
56- 84	.0				36.5	10.8				31.5	14.6		8.2	7.1
84-	.1				33.0	11.2				30.7	14.2		8.0	7.1

Depth (cm)	Extractable Bases me / 100 g: Ca	Mg	Na	K	Sum	Ext Acidity	C. E. C. Sum of Cations	Na OAc	Ext. Al me / 100 g	Ratios to clay: C. E. C	Ext. Fe	15 bar water	Ca / Mg	Total Solu. Salts ppm	Base saturation % Sum of Cations	Na OAc
0- 16		.9	.2	9.2				45.0		2.1		1.2				100.0
16- 56		5.0	.5	4.3				35.0		.7		.3				100.0
56- 84		1.8	.5	2.4				35.0		.7		.3				100.0
84-		5.0	.5	2.3				40.0		.8		.3				100.0

Depth (cm)	Electrical Conductivity mmho / cm	Water Extract From Saturated Paste: Cations me / liter: Ca	Mg	Na	K	CO 3	HCO 3	Cl	SO 4	Water at Satur %	ESP %	SAR	CSP %	Gypsum %	Ext P_2O_5 ppm	Available Nutrients mg / 100 g: Ca	Mg	K
0- 16	.4										0	.1	100		6.1			>100
16- 56	.5										1	.3	100		2.2			>100
56- 84	.4										1	.4	100		1.5			>100
84-	.6										1	.4	100		2.0			>100

Classification: Calcixerollic Xerochrepts, fine, mixed, thermic.
Location: Raqqa province, Syria. Approximately 16 km south of Tall Abiyad, 2 km west of Raqqa - Tall Abiyad road; approximate coordinates 37o 35' N latitude and 38o 58' E longtitude.
Physiographic Position: Gently undulating plains, elevation about 335 m.a.s.l.
Topography: Gently sloping topography with a characteristic slope of 2 percent towards south.
Drainage: Well drained, slow surface run-off, slow permeability.
Vegetation: Rainfed and irrigated agriculture.
Parent Material: Neogene and/or Paleogene Limestone.
Sampled by: H. Yuksel and I. Daya on April 8, 1981
Soil No.: SP - 83



Hori.	Depth (cm)	Description
A1	0 - 16	Yellowish red (5 YR 4/6 m) to light reddish brown (5 YR 6/4 d) sandy clay loam; massive structure; slightly hard (dry), firm (moist), sticky and plastic; few, fine, discontinuous, inped, simple, closed pores; common, fine roots inside peds; abrupt, smooth boundary; pH 7.7
B 21	16 - 56	Reddish brown (5 YR 4/4 m) clay; weak, fine, subangular blocky structure; firm (moist), sticky and plastic; patchy, thin cutanes, probably of clay minerals, on horizontal and vertical ped faces; few, fine, discontinuous, inped, simple closed pores; frequent, small, soft, carbonate powder on ped faces; common, very fine roots inside peds; diffuse, smooth boundary; pH 8.2
B22	56 - 84	Yellowish red (5 YR 6/4 m) clay: weak, fine, subangular, blocky structure; firm (moist), sticky and plastic; patchy, thin cutanes, probably of clay minerals, on horizontal and vertical ped faces; few, fine, discontinuous, inped, simple closed pores; frequent, small, soft, carbonate accumulations on ped faces; few, very fine roots inside peds; diffuse, smooth boundary; pH 8.2
B23	84+	Yellowish red (5 YR 6/4 m) clay; weak, very fine, subangular blocky structure; firm (moist), sticky and plastic; patchy, thin cutanes, probably of clay minerals, on horizontal and vertical ped faces; few, fine, discontinuous, inped, simple, closed pores; frequent, small, soft carbonate accumulation on ped faces; few, very fine roots inside peds; pH 8.0

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DEPARTMENT OF SOIL SURVEY

SOIL SERIES _____ TAXONOMY _____ SOIL No SP - 84

LOCATION _____ LAB Nos. 889 - 890 - 891 - 892

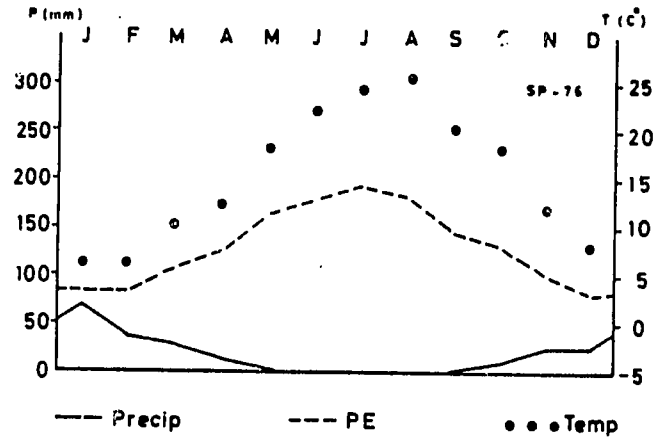
Depth (cm)	Horizon	Size Class and particle diameter (mm) — Total: Sand (2-0.05)	Total: Silt (0.05-0.002)	Total: Clay (<0.002)	Sand: Very coarse (2-1)	Sand: Coarse (1-0.5)	Sand: Medium (0.5-0.25)	Sand: Fine (0.25-0.1)	Sand: Very fine (0.1-0.05)	Silt: 0.05-0.02	Silt: 0.02-0.002				Coarse fragments >2 mm % of whole soil	Coarse fragments 2-19 mm % of <76 mm	Coarse fragments 19-76 mm % of <76 mm	Texture class
		% of < 2 mm																
0- 6	A11	14	33	51														C
6- 25	A12	41	35	24														L
25- 48	B21	42	28	30														CL
48- 70	B22	42	26	32														CL

Depth (cm)	Organic Carbon %	Nitrogen %	C / N	Ext. Iron as Fe %	Carbonates as Ca Co 3 <2 mm %	Carbonates as Ca Co 3 <0.002 mm %	Bulk Density 1/3 bar g/cc	Bulk Density oven dry g/cc		COLE	Water Contents 1/3 bar %	Water Contents 15 bar %				pH Satur. paste	pH H_2O	pH KCl
0- 6	1.0				38.0	18.6					32.9	15.3					7.6	7.1
6- 25	.6				41.0	10.2					20.3	8.7					8.1	7.1
25- 48	.3				48.0	13.8					22.1	9.7					8.0	7.1
48- 70	.5				57.0	11.2					22.8	10.0					8.0	7.0

Depth (cm)	Extractable Bases Ca	Mg	Na	K	Sum	Ext Acidity	C. E. C. Sum of Cations	C. E. C. Na OAc		Ext. Al me / 100 g	Ratios to clay C. E. C	Ext. Fe	15 bar water	Ca / Mg	Total Solu. Salts ppm		Base saturation Sum of Cations %	Base saturation Na OAc %
	me / 100 g																	
0- 6		1.0	.2	5.3				37.0			.7		.3					100.0
6- 25		tr	.2	2.1				42.0			1.8		.4					100.0
25- 48		1.5	.2	1.6				30.0			1.0		.3					100.0
48- 70		2.0	.2	1.3				27.0			.8		.3					100.0

Depth (cm)	Electrical Conductivity mmho / cm	Water Extract From Saturated Paste — Cations Ca	Mg	Na	K	CO 3	HCO 3	Cl	SO 4	Water at Satur %	ESP %	SAR	CSP %	Gypsum %	Ext P_2O_5 ppm	Available Nutrients Ca	Mg	K
		me / liter														mg / 100 g		
0- 6	.4										0	.1	100	tr	3.8			>100
6- 25	.6										0	.2	100	tr	1.0			>100
25- 48	.5										0	.2	100	tr	1.1			>100
48- 70	.6										0	.2	100	tr	tr			>100

Classification: Xerollic Calciorthids, fine loamy, mixed, thermic.
Location: Raqqa Province, Syria. Approximately 6 km southwest of Tall Abiyad, 6 km east of Tall Akhdar, 2 km west of the Raqqa - Tall abiyad road; approximate coordinates 37o 41' N latitude and 38o 57' E longtitude
Physiographic Position: Rolling summits of low hills; elevation about 450 m.a.s.l.
Topography: Strongly sloping topography with a slope of 15 percent towards east.
Drainage: Well drained, rapid surface run-off, moderately slow permeability.
Vegetation: Rangeland.
Parent Material, Neogene and/or Paleogene Limestone.
Sampled by: H. Yuksel and I. Daya on April 8, 1981
Soil No.: SP - 84



Hori.	Depth (cm)	Description
A11	0 - 6	Dark brown to brown (7.5 YR 4/4 m) to light yellowish brown (10 YR 6/4 d) clay; weak, fine, subangular blocky breaking to moderate granular structure; slightly hard (dry), firm (moist), sticky and plastic; frequent, fine discontinuous, vertical, inped, irregular, simple, open pores; abundant, subrounded and rounded gravels, constituting approximately 40% of the horizon; common, fine roots, inside peds; abrupt, smooth boundary; pH 7.6
A12	6 - 25	Brown (7.5 YR 5/4 m) loam; weak, fine, subangular blocky structure, friable (moist), slightly sticky, slightly plastic; frequent, fine to medium, discontinuous, vertical, inped, irregular, simple, open pores; abundant, subrounded and rounded gravel, constituting approximately 50% of the horizon; few, small, soft, irregular, local carbonate pseudomycelium; common, very fine to fine roots inside peds; clear, smooth boundary; pH 8.1
B21	25 - 48	Brown (7.5 YR 4/4 m) clay loam; weak, fine, subangular blocky structure; firm (moist), sticky and plastic; few, discontinuous, vertical, inped, irregular, simple, open pores; abundant, subrounded to rounded gravel, constituting approximately 60% of the horizon; frequent, large, soft, irregular, carbonate pseudomycelium; few, very fine to fine roots, inside peds; gradual smooth boundary; pH 8.0
B22	48 - 70	Dark yellowish brown (10 YR 4/4 m) clay loam; weak, very fine, subangular blockay structure; firm (moist), sticky and plastic; few, discontinuous, vertical, inped; irregular, simple open pores; abundant, subrounded and rounded gravel, constituting approximately 60% of the horizon; frequent, large, soft, irregular, pseudomycelium carbonates; few, very fine roots, inside peds; clear, wavy boundary; pH 8.0
B3	70 - 92	Yellowish brown (10 YR 5/4 m) clay loam; no structure; firm (moist), sticky and plastic; abundant, subrounded and rounded gravel, constituting approximately 60% of the horizon; abundant, large, soft, irregular pseudomycelium carbonate; gradual wavy boundary;

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SOIL SERIES _____ TAXONOMY _____ SOIL. No. SP - 85

LOCATION _____ LAB Nos. 893 - 894 - 895 - 896 - 897 - 898

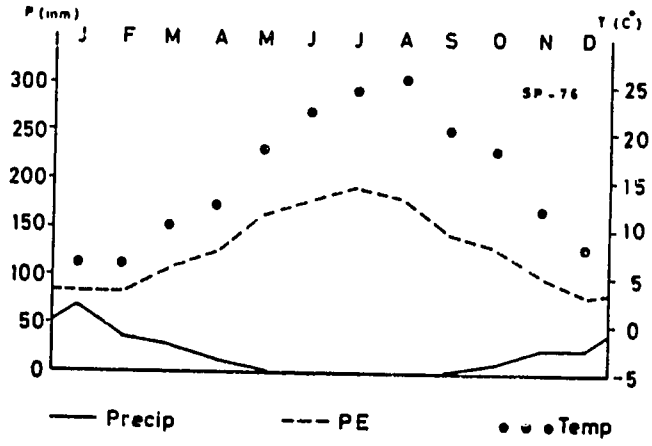
Depth (cm)	Horizon	Size Class and particle diameter (mm): Total Sand (2-0.05)	Total Silt (0.05-0.002)	Total Clay (<0.002)	Sand: Very coarse (2-1)	Sand: Coarse (1-0.5)	Sand: Medium (0.5-0.25)	Sand: Fine (0.25-0.1)	Sand: Very fine (0.1-0.05)	Silt: 0.05-0.02	Silt: 0.02-0.002	Coarse fragments >2 % of whole soil	Coarse fragments 2-19 % of <76 mm	Coarse fragments 19-76 % of <76 mm	Texture class
		% of < 2 mm													
0- 3	A11	30	31	39											CL
3- 13	A12	37	35	28											CL
13- 35	A3	32	48	20											CL
35- 80	B21cs	42	27	31											CL
80-110	B22cs	27	43	30											CL
110+	B23cs	26	34	40											CL

Depth (cm)	Organic Carbon %	Nitrogen %	C / N	Ext. Iron as Fe %	Carbonate as $CaCO_3$ <2 mm %	Carbonate as $CaCO_3$ <0.002 mm %	Bulk Density 1/3 bar g/cc	Bulk Density oven dry g/cc	COLE	Water Contents 1/3 bar %	Water Contents 15 bar %	pH Satur. paste	pH H_2O	pH KCl
0- 3	.3				39.0	12.2				26.8	12.1		7.9	7.2
3- 13	.2				37.0	10.2				22.2	9.7		7.9	
13- 35	.1				33.5	12.2				20.2	8.7		7.8	
35- 80	.1				26.0	8.2				22.4	9.8		7.7	
80-110	.1				9.2	9.2				24.3	10.8		7.8	
110+	.1				8.7	8.7				27.8	12.6		7.7	

Depth (cm)	Extractable Bases (me / 100 g): Ca	Mg	Na	K	Sum	Ext Acidity	C. E. C.: Sum of Cations	C. E. C.: Na OAc	Ext. Al me / 100 g	Ratios to clay: C. E. C	Ext. Fe	15 bar water	Ca/ Mg	Total Soluble Salts ppm	Base saturation: Sum of Cations %	Base saturation: Na OAc %
0- 3		3.0	.4	8.1				35.0		.9		.3				100.0
3- 13		1.4	.3	7.8				30.0		1.1		.3				100.0
13- 35		.8	.6	3.2				30.0		1.5		.4				100.0
35- 80		tr	.7	2.0				27.0		.9		.3				100.0
80-110		tr	1.2	2.7				27.0		.9		.4				100.0
110+		3.9	.7	3.5				32.0		.8		.3				100.0

Depth (cm)	Electrical Conductivity mmho / cm	Water Extract From Saturated Paste (me / liter): Ca	Mg	Na	K	CO_3	HCO_3	Cl	SO_4	Water at Satur %	ESP %	SAR	CSP %	Gypsum %	Ext P_2O_5 ppm	Available Nutrients (mg / 100 g): Ca	Mg	K
0- 3	1.7										1	.2	100	tr	3.0			>100
3- 13	1.3										1	.1	100	tr	1.5			>100
13- 35	2.5										2	.4	100	tr	.5			>100
35- 80	3.5										2	.5	100	13.1	1.9			>100
80-110	4.2										4	.8	100	3.4	2.9			>100
110+	3.4										2	.4	100	1.8	2.9			>100

Classification: Calcic Gypsiorthids, fine loamy, mixed, thermic.
Location: Raqqa province, Syria. Approximately 38 km northwest of Raqqa, 2 km southeast of Tall Shayer approximate coordinates 37o 12' N latitude and 38o 44' E longtitude.
Physiographic Position: Gently undulating plains; elevation about 430 m.a.s.l.
Topography: Gently sloping topography with a slope of 3 percent towards south.
Drainage. Well drained, slow surface run-off, moderate permeability.
Vegetation: Rangeland
Parent Material: Neogene Gypsum.
Sampled by: H. Yuksel and I. Daya on April 9, 1981.
Soil No.: SP - 85



Hori.	Depth (cm)	Description
A11	0 - 3	Strong brown (7.5 YR 5/6 m) to very pale brown (10 YR 7/4 d) clay loam; weak, medium, platy structure; slightly hard (dry), firm (moist), sticky and slightly plastic; common, very fine to fine roots; abrupt, wavy boundary; pH 7.9
A12	3 - 13	Yellowish red (5 YR 4/6 m) clay loam; weak, medium, subangular blocky structure; firm (moist), sticky and plastic; frequent to few, fine to medium, discontinuous, random, inped, simple closed pores; few, very fine roots; abrupt, smooth boundary; pH 7.9
A3	13 - 35	Reddish brown (5 YR 4/4 m) loam; weak, medium, subangular blocky structure; firm (moist), slightly sticky and slightly plastic; frequent, fine to medium, continuous, random, inped, simple open pores; abundant, small gypsum needles; few, very fine roots; gradual smooth bpundary; pH 7.8
B21 cs	35 - 80	Reddish brown (5 YR 4/4 m) clay loam; weak, medium, subangular blocky structure; firm (moist), sticky and plastic, many, fine to medium, continuous, random, inped, tubular, simple, open pores; abundant, small gypsum needles; gradual smooth boundary; pH 7.7
B22 cs	80 - 110	Reddish brown (5 YR 4/4 m) clay loam; weak, medium, subangular blocky structure; firm (moist), sticky and plastic; many to frequent, fine to medium, continuous, random, inped, simple open pores; abundant small gypsum needles; gradual, smooth boundary; pH 7.8
B23 cs	110+	Dark reddish brown (5 YR 3/4 m) clay loam; weak, fine, subangular blocky structure; firm (moist). sticky and plastic; frequent and few, fine to medium, discontinuous, random, inped, simple, open pores; abundant, small gypsum needles; pH 7.7

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SOIL SERIES _____ TAXONOMY _____ SOIL. No. SP - 86

LOCATION _____ LAB Nos. 899 - 900 - 901 - 902 - 903

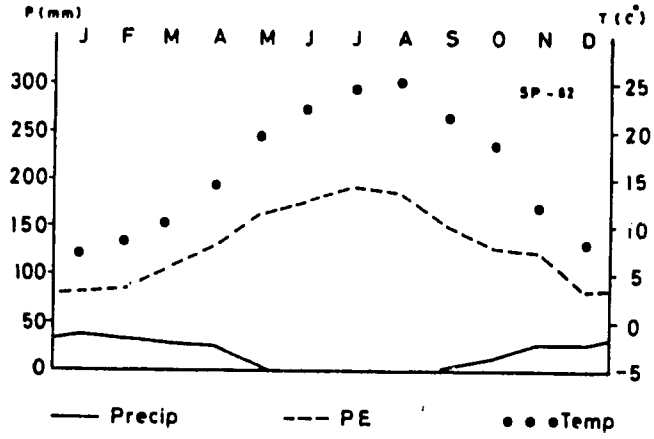
Depth (cm)	Horizon	Size Class and particle diameter (mm) — Total: Sand (2-0.05)	Total: Silt (0.05-0.002)	Total: Clay (<0.002)	Sand: Very coarse (2-1)	Sand: Coarse (1-0.5)	Sand: Medium (0.5-0.25)	Sand: Fine (0.25-0.1)	Sand: Very fine (0.1-0.05)	Silt: 0.05-0.02	Silt: 0.02-0.002				Coarse fragments: >2 % of whole soil	Coarse fragments: 2-19 %	Coarse fragments: 19-76 %	Texture class
		% of < 2 mm														% of <76 mm		
0- 16	A1	22	51	27														SIL
16- 42	C1	12	35	53														C
42- 97	C2	22	48	30														CL
97-126	C3	12	46	42														C
126-163	C4	24	49	27														SIL

Depth (cm)	Organic Carbon %	Nitrogen %	C / N	Ext. Iron as Fe %	Carbonate as Ca Co 3 <2 mm %	Carbonate as Ca Co 3 <0.002 mm %	Bulk Density 1/3 bar g/cc	Bulk Density oven dry g/cc	COLE	Water Contents 1/3 bar %	Water Contents 15 bar %				pH Satur. paste	pH H_2O	pH K Cl
0- 16	1.1				18.5	15.3				24.0	10.7					7.8	7.3
16- 42	.5				19.5	13.3				34.1	15.9					7.4	7.1
42- 97	.2				18.0	9.2				25.0	11.2					7.6	7.1
97-126	.3				19.5	7.7				30.4	14.0					7.6	7.1
126-163	.2				17.0	10.2				23.7	10.5					7.6	7.1

Depth (cm)	Extractable Bases Ca	Mg	Na	K	Sum	Ext Acidity	C. E. C. Sum of Cations	Na OAc		Ext. Al me / 100 g	Ratios to clay C. E. C	Ext. Fe	15 bar water	Ca/ Mg	Total Solu. Salts ppm		Base saturation Sum of Cations %	Na OAc
	me / 100 g																	
0- 16		4.0	.1	7.0				40.0			1.5		.4					100.0
16- 42		7.0	tr	2.8				42.0			.8		.3					100.0
42- 97		4.4	.5	1.5				30.0			1.0		.4					100.0
97-126		9.0	1.0	2.0				35.0			.8		.3					100.0
126-163		7.0	.5	1.2				27.0			1.0		.4					100.0

Depth (cm)	Electrical Conductivity mmho / cm	Water Extract From Saturated Paste — Cations Ca	Mg	Na	K	CO 3	HCO 3	Cl	SO 4	Water at Satur %	ESP %	SAR	CaCO3 %	Gypsum %	Ext P_2O_5 ppm	Available Nutrients Ca	Mg	K
		me / liter														mg / 100 g		
0- 16	4.1										0	.0	100	tr	18.0			>100
16- 42	14.5										tr		tr		00	1.2	4.4	>100
42- 97	12.0										1	.4	100	tr	2.0			>100
97-126	10.0										2	.7	100	2.8	2.0			>100
126-163	14.5										1	.5	100	tr	4.5			>100

Classification: Typic Torrifluvent, fine loamy, mixed, thermic.
Location: Raqqa province, Syria. Approximately 6 km southwest of Raqqa, 20 m north of the Aleppo-Deir Ezzor highway; approximate coordinates 350 56' N latitude and 38o 59' E longtitude.
Physiographic Position: level flood plains; elevation 350 m.a.s.l.
Topography: level topography with a characteristic slope of less than 1 percent.
Drainage: Moderately well drained, very slow surface run-off, slow permeability.
Vegetation: Irrigated agriculture.
Parent Material: Recent alluvium.
Sampled by: H. Yuksel and I. Daya on April 10, 1981
Soil No.: SP - 86



Hori.	Depth(cm)	Description
A1	0 - 16	Brown (10 YR 4/3 m) to pale brown (10 YR 6/3 d) silt loam; massive structure; approximately 1 cm wide cracks extending down to 30 cm; extremely hard (dry), firm (moist), sticky and plastic; many and frequent, very fine to fine, random, inped, simple, open pores; some insect nests, many, very fine to fine roots; clear, smooth boundary; pH 7.8
C1	16 - 42	Dark brown (10 YR 3/3 m) clay; massive structure; firm (moist), very sticky and very plastic; frequent, fine, continuous, random, inped, simple, open pores; few, very fine to fine roots; clear, smooth boundary; pH 7.4
C2	42 - 97	Dark grayish brown (10 YR 4/2 m) clay loam; massive structure; firm (moist), very sticky and very plastic; many, medium, continuous, random, inped, simple, open pores; few, very fine roots; clear, smooth boundary; pH 7.6
C3 sa	97 - 126	Dark grayish brown (10 YR 4/2 m) clay; massive structure; firm (moist), very sticky and very plastic; few, fine, continuous, random, inped, tubular, simple, open pores; few, very fine roots; clear, smooth boundary; pH 7.6
C4 sa	126 - 163	Dark grayish brown (10 YR 4/2 m) silt loam; few, fine, distinct, strong brown (7.5 YR 5/6m) mottles on ped faces; massive structure; firm (moist), sticky and plastic; many fine, continuous, random, inped, simple closed pores; pH 7.6

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SOIL SERIES _____ TAXONOMY : _____ SOIL. No SP - 87

LOCATION _____ LAB Nos. 904 - 905 - 906 - 907 - 908

Depth (cm)	Horizon	Size Class and particle diameter (mm) — Total: Sand (2-0.05)	Total: Silt (0.05-0.002)	Total: Clay (<0.002)	Sand: Very coarse (2 - 1)	Sand: Coarse (1 - 0.5)	Sand: Medium (0.5 - 0.25)	Sand: Fine (0.25 - 0.1)	Sand: Very fine (0.1 - 0.05)	Silt: 0.05 - 0.02	Silt: 0.02 - 0.002				Coarse fragments: >2 % of whole soil	Coarse fragments: 2 - 19 % of <76 mm	Coarse fragments: 19 -76 % of <76 mm	Texture class
		%, of < 2 mm																
0- 11	A11	56	33	11														SL
11- 34	A12	40	32	28														CL
34- 45	A3	nd	nd	nd														
45- 66	B21cs	nd	nd	nd														
66+	B22cs	nd	nd	nd														

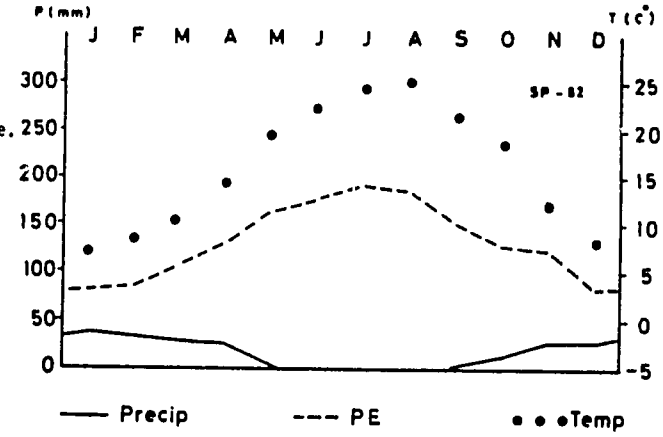
Depth (cm)	Organic Carbon %	Nitrogen %	C / N	Ext. Iron as Fe %	Carbonate as Ca Co 3 < 2 mm	Carbonate as Ca Co 3 < 0.002 mm	Bulk Density 1/3 bar	Bulk Density ovendry		CDLE	Water Contents 1/3 bar	Water Contents 15 bar				pH Satur paste	pH H_2O /	pH K Cl /
					%,		g / cc				%,							
0- 11	.1				9.5	3.1					13.8	5.3					7.8	7.2
11- 34	.1				9.5	2.0					21.7	9.5					7.8	7.2
34- 45	.1				15.0	7.1											7.8	7.3
45- 66	.1				16.5	15.3											7.7	7.4
66+	.1				17.5	11.7											8.0	7.5

Depth (cm)	Extractable Bases Ca	Mg	Na	K	Sum	Ext Acidity	C. E. C. Sum of Cations	Na OAc		Ext. Al me / 100 g	Ratios to clay C. E. C	Ext. Fe	15 bar water	Ca/ Mg	Total Solu. Salts ppm		Base saturation Sum of Cations	Na OAc
	me / 100 g																%,	
0- 11	tr	tr	.2	1.3	tr			17.5			1.6		.5					100.0
11- 34	tr	tr	3.0	2.0	tr			20.0			.7		.3					100.0
34- 45	tr	tr	.7	2.7	tr			20.0										100.0
45- 66	tr	tr	tr	.4	tr			25.0										100.0
66+	tr	tr	tr	2.7	tr			22.5										100.0

Depth (cm)	Electrical Conductivity mmho / cm	Water Extract From Saturated Paste — Cations: Ca	Mg	Na	K	CO 3	HCO 3	Cl	SO 4	Water at Satur %,	ESP %/	SAR	CSP %,	Gypsum %	Ext P_2O_5 ppm	Available Nutrients Ca	Mg	K
		me / liter														mg / 100 g		
0- 11	2.0										1	.2	100	14.0	1.0	tr	tr	>100
11- 34	2.2										15	1.5	100	16.0	1.9	tr	tr	>100
34- 45	3.4										3	.5	100	12.0	1.5	tr	tr	>100
45- 66	8.4																	
66+	16.0																	

Classification: Calcic Gypsiorthids, fine loamy, mixed, thermic.
Location: Raqqa province, Syria. Approximately 11 km northwest of Raqqa, 4 km east of Hamam, 20 m south of the Aleppo - Deir Ezzor road; approximate coordinates 35o 57' N latitude and 38o 54' E longtitude.
Physiographic Position: Steep side slopes of low hills; elevation about 600 m.a.s.l.
Topography: Steep topography with a characteristic slope of 45 percent towards southeast.
Drainage: Well drained, very rapid surface run-off, moderate permeability.
Vegetation: Rangeland.
Parent Material: Neogene Gypsum.
Sampled by: H. Yuksel and I. Daya on April 10, 1981
Soil No.: SP - 87

Notes: Family classification is based on textures determined in the field.



Hori.	Depth (cm)	Description
A11	0 - 11	Yellowish brown (10 YR 5/6 m) to very pale brown (10 YR 8/3 d) sandy loam; weak, fine, subangular blocky structure; soft (dry), very friable (moist), non sticky and non plastic; few, fine to medium, continuous, random, inped, simple, open pores; common, fine roots; clear, smooth boundary; pH 7.8
A12	11 - 34	Yellowish brown (10 YR 5/6 m) loam; massive structure; friable (moist), slightly sticky and non plastic; frequent, very fine, continuous, random, inped, simple open pores; few, very fine to fine roots; clear smooth boundary; pH 7.8
A3	34 - 45	Yellowish brown (10 YR 5/8 m) loam; massive structure; friable (moist), slightly sticky and slightly plastic; few, very fine, continuous, random, inped, simple open pores; few, small gypsum needles; few, very fine roots; clear smooth boundary; pH 7.8
B 21 cs	45 - 66	Yellowish brown (10 YR 5/6 m) clay loam; massive structure; firm (moist), sticky and slightly plastic; abundant, small gypsum needles; few, very fine roots; gradual, smooth boundary; pH 7.7
B22 cs	66+	brownish yellow (10 YR 6/6 m) clay loam; massive structure; very firm (moist), sticky and slightly plastic; abundant, small gypsum needles; pH 8

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SOIL SERIES _____ TAXONOMY : _____ SOIL No SP - 88

LOCATION _____ LAB Nos. 909 - 910 - 911 - 912 - 913

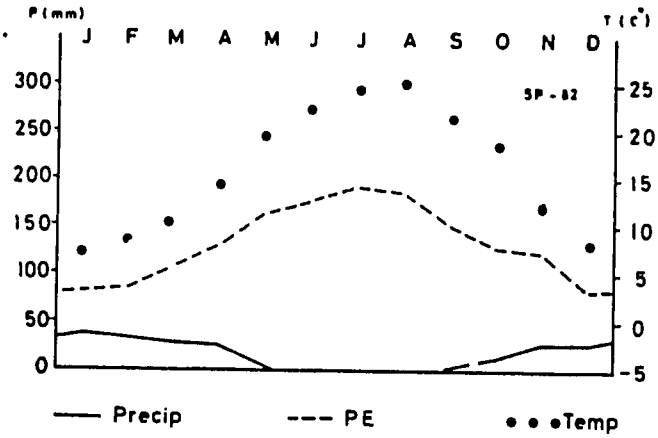
Depth (cm)	Horizon	Size Class and particle diameter (mm): Total Sand (2-0.05)	Total Silt (0.05-0.002)	Total Clay (<0.002)	Sand: Very coarse (2-1)	Sand: Coarse (1-0.5)	Sand: Medium (0.5-0.25)	Sand: Fine (0.25-0.1)	Sand: Very fine (0.1-0.05)	Silt: 0.05-0.02	Silt: 0.02-0.002				Coarse fragments: >2 % of whole soil	Coarse fragments: 2-19 % of <76 mm	Coarse fragments: 19-76 % of <76 mm	Texture class
		% of < 2 mm																
0- 4	A1	30	28	42														C
4- 17	B21	18	32	50														C
17- 48	B22	22	30	48														C
48- 63	B23	17	27	56														C
63-	B24	10	32	58														C

Depth (cm)	Organic Carbon %	Nitrogen %	C / N	Ext. Iron as Fe %	Carbonate as $CaCO_3$ <2 mm %	Carbonate as $CaCO_3$ <0.002 mm %	Bulk Density 1/3 bar g/cc	Bulk Density oven dry g/cc	COLE	Water Contents 1/3 bar %	Water Contents 15 bar %				pH Satur paste	pH H_2O	pH KCl
0- 4	.9				39.0	20.4				27.8	12.7					8.0	7.4
4- 17	.5				38.0	23.5				32.2	15.0					8.3	7.3
17- 48	.3				34.5	tr				31.0	14.3					7.6	7.4
48- 63	.2				34.0	23.5				34.4	16.1					7.6	7.3
63-	.2				39.0	18.6				36.1	17.0					7.4	7.1

Depth (cm)	Extractable Bases Ca (me/100 g)	Mg	Na	K	Sum	Ext Acidity	C.E.C Sum of Cations	C.E.C Na OAc		Ext. Al me/100 g	Ratios to clay C.E.C	Ext. Fe	15 bar water	Ca/Mg	Total Solu. Salts ppm		Base saturation Sum of Cations %	Base saturation Na OAc %
0- 4	15.0	1.3	.3	13.5	30.1			27.5			.7		.3					100.0
4- 17	15.0	.4	1.0	12.7	29.1			37.5			.8		.3					77.5
17- 48	13.0	3.0	1.0	4.2	21.2			18.8			.4		.3					100.0
48- 63	21.0	4.0	tr	1.9	24.9			27.5			.5		.3					97.9
63-	24.0	.9	.5	2.4	27.8			27.5			.5		.3					100.0

Depth (cm)	Electrical Conductivity mmho/cm	Water Extract From Saturated Paste: Cations Ca (me/liter)	Mg	Na	K	CO_3	HCO_3	Cl	SO_4	Water at Satur %	ESP %	SAR	CSP %	Gypsum %	Ext P_2O_5 ppm	Available Nutrients Ca (mg/100 g)	Mg	K
0- 4	1.4										1	.1	54	tr	10.9	420.0	24.2	>100
4- 17	1.3										2	.4	40	tr	2.5	420.0	7.4	>100
17- 48	12.0										5	.6	49	tr	1.9	364.0	55.7	>100
48- 63	13.5										1	.4	87	1.3	3.1	672.0	16.7	>100
63-	10.0																	

Classification: Typic Calciorthids, fine, mixed, thermic.
Location: Raqqa Province, Syria. Approximately 46 km northwest of Al-Rasafeh, 40 km northwest of the town of Al-Khom; approximate coordinates 35o 21' N latitude and 38o 28' E longtitude.
Physiographic Position: level plains, elevation about 510 m.a.s.l.
Topography: Level topography with a characteristic slope of less than 2 percent.
Drainage: Well drained, very slow surface run-off, slow permeability.
Vegetation: Rangeland.
Parent Material: Neogene and/or Paleogene Limestone.
Sampled by: H. Yuksel and I. Daya on April 10, 1981
Soil No.: SP - 88



Hori.	Depth (cm)	Description
A1	0 - 4	Brownish yellow (10 YR 6/6 m) to very pale brown (10 YR 8/4 d) clay; weak, fine, subangular blocky structure; very hard (dry), friable (moist), sticky and slightly plastic; few, fine, continuous, random, inped, simple, open pores; common, very fine to fine roots, abrupt, smooth boundary; pH 8.0
B 21	4 - 17	Yellowish brown (10 YR 5/6 m) clay; weak, fine, subangular blocky structure; very friable (moist), sticky and plastic; many, fine, continuous, random, inped, simple, open pores; few, very fine roots; clear, smooth boundary; pH 8.3
B22	17 - 48	Yellowish brown (10 YR 5/6 m) clay; weak, fine, subangular blocky structure; very friable (moist), sticky and plastic; few and frequent, fine to very fine, continuous, random, inped, tubular, simple, open pores; clear, smooth boundary; pH 7.6
B23	48 - 63	Yellowish brown (10 YR 5/8 m) clay; weak, very fine, subangular, blocky structure; friable (moist), sticky and plastic; few and frequent, fine to very fine, continuous, random, inped, simple, open pores; few, small gypsum needles; clear, smooth boundary; pH 7.6
B24	63+	Yellowish brown (10 YR 8/8 m) clay; massive structure; friable (moist), sticky and plastic; few, very fine, continuous, random, inped, simple, open pores; few, small, gypsum needles; pH 7.4

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SOIL SERIES _____ TAXONOMY _____ SOIL. No SP - 89

LOCATION _____ LAB Nos. 914 - 915

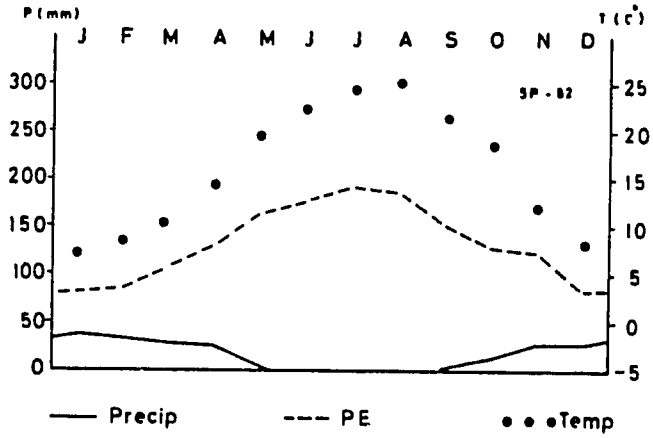
Depth (cm)	Horizon	Size Class and particle diameter (mm): Total Sand (2-0.05)	Total Silt (0.05-0.002)	Total Clay (<0.002)	Sand: Very coarse (2-1)	Sand: Coarse (1-0.5)	Sand: Medium (0.5-0.25)	Sand: Fine (0.25-0.1)	Sand: Very fine (0.1-0.05)	Silt: 0.05-0.02	Silt: 0.02-0.002				Coarse fragments >2 % of whole soil	Coarse fragments 2-19 % of <76 mm	Coarse fragments 19-76 % of <76 mm	Texture class
		%, of < 2 mm																
0- 6	A1	28	36	36														CL
6- 34	B2ca	24	30	46														C

Depth (cm)	Organic Carbon %	Nitrogen %	C / N	Ext. Iron as Fe %	Carbonate as Ca Co 3 <2 mm %	Carbonate as Ca Co 3 <0.002 mm %	Bulk Density 1/3 bar g/cc	Bulk Density ovendry g/cc		COLE	Water Contents 1/3 bar %	Water Contents 15 bar %			pH Satur. paste	pH H_2O	pH K Cl
0- 6	1.6				22.0	13.3					26.1	11.8				7.8	7.2
6- 34	1.0				24.5	16.3					30.0	13.8				7.8	7.1

Depth (cm)	Extractable Bases Ca (me / 100 g)	Mg	Na	K	Sum	Ext Acidity	C. E. C. Sum of Cations	Na OAc		Est. Al me / 100 g	Ratios to clay C. E. C	Est. Fe	15 bar water	Ca / Mg	Total Solu. Salts ppm		Base saturation Sum of Cations %	Na OAc
0- 6	25.0	.5	.3	13.5	39.2			47.5			1.3		.3					82.5
6- 34	34.0	.9	.5	8.8	44.1			47.5			1.0		.3					92.9

Depth (cm)	Electrical Conductivity mmho / cm	Water Extract From Saturated Paste: Cations Ca (mg / liter)	Mg	Na	K	CO 3	HCO 3	Cl	SO 4	Water at Satur %	ESP %	SAR	CSP %	Gypsum %	Ext P_2O_5 ppm	Available Nutrients Ca (mg / 100 g)	Mg	K
0- 6	1.7										0	.1	52	tr	22.0	700.0	8.4	>100
6- 34	4.2										1	.2	71	.9	12.9	952.0	16.7	>100

Classification: Lithic Calciorthids, fine, mixed, thermic.
Location: Raqqa province, Syria. Approximately 64 km west of Rasafeh, 32 km southwest of the Aleppo-Deir Ezzor highway; approximate coordinates 35o 04' N latitude and 38o 05' E longtitude.
Physiographic Position: Steep side slopes of low hills; elevation about 750 m.a.s.l.
Topography: strongly sloping topography with a characteristic slope of 15 percent towards southeast.
Drainage: Well to moderately excessively drained, rapid surface run-off, moderate permeability.
Vegetation: Rangeland.
Parent Material: Neogene and/or Paleogene Limestone.
Sampled by: H. Yuksel and I Daya on April 10, 1981
Soil No.: SP - 89



Hori.	Depth (cm)	Description
A1	0 - 6	Yellowish brown (10 YR 5/6 m) to very pale brown (10 YR 7/4 d) clay loam; weak, fine, subangular, blocky structure; slightly hard (dry); friable(moist), slightly sticky and slightly plastic, frequent, fine, continuous, random, simple, open pores; few, rounded and subrounded gravels, constituting approximately 5 percent of the horizon; few, small, soft, carbonate accumulation in pseudomycelium form; few, fine roots, inside peds; abrupt, smooth boundary; pH 7.8
B2 ca	6 - 34	Strong brown (7.5 YR 5/6 m) clay; moderate, medium, subangular blocky structure; firm (moist), sticky and plastic, frequent, fine, continuous, random, inped, simple, open pores; few, rounded and subrounded gravels, constituting approximately 10 percent of the horizon; frequent, small, soft, carbonate accumulation on ped faces; few, very fine roots, inside peds; clear, broken boundary; pH 7.8
R	34+	Limestone bedrock.

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SOIL SERIES _____ TAXONOMY _____ SOIL. No SP - 90

LOCATION _____ LAB Nos. 916 - 917 - 918

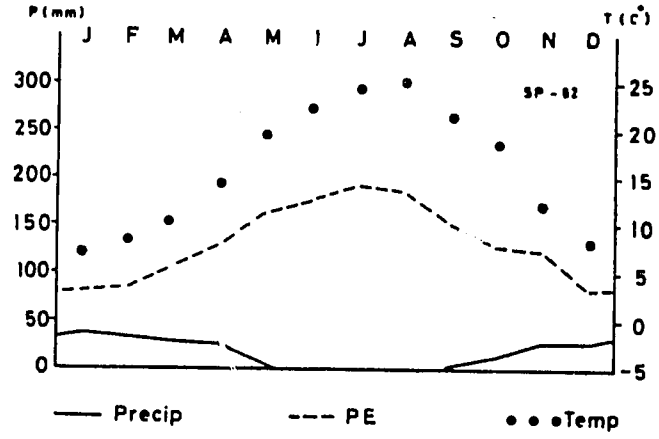
Depth (cm)	Horizon	Size Class and particle diameter (mm) — Total: Sand (2-0.05)	Total: Silt (0.05-0.002)	Total: Clay (<0.002)	Sand: Very coarse (2-1)	Sand: Coarse (1-0.5)	Sand: Medium (0.5-0.25)	Sand: Fine (0.25-0.1)	Sand: Very fine (0.1-0.05)	Silt: 0.05-0.02	Silt: 0.02-0.002	Coarse fragments: >2 % of whole soil	Coarse fragments: 2-19 % of <76 mm	Coarse fragments: 19-76 % of <76 mm	Texture class
		% of < 2 mm													
0- 6	A1	90	4	6											S
6- 50	C1	91	1	8											S
50-100	C2	90	2	8											S

Depth (cm)	Organic Carbon %	Nitrogen %	C / N	Ext. Iron as Fe %	Carbonate as Ca Co 3 <2 mm %	Carbonate as Ca Co 3 <0.002 mm %	Bulk Density 1/3 bar g/cc	Bulk Density ovendry g/cc	COLE	Water Contents 1/3 bar %	Water Contents 15 bar %	Saturation paste	pH H_2O	pH KCl
0- 6	.2				6.0	tr				7.2	1.9		8.2	7.6
6- 50	.1				4.0	2.0				7.7	2.1		8.2	7.9
50-100	.1				4.5	2.0				7.8	2.2		8.2	8.0

Depth (cm)	Extractable Bases Ca	Mg	Na	K	Sum	Ext Acidity	C. E. C. Sum of Cations	Na OAc	Ext. Al me / 100 g	Ratios to clay C. E. C	Ext. Fe	15 bar water	Ca/Mg	Total Solu. Salts ppm	Base saturation Sum of Cations %	Na OAc %
	me / 100 g															
0- 6	15.0	.9	1.0	1.8	18.6			20.0		3.3		.3				93.2
6- 50	7.0	1.0	1.0	1.2	10.2			10.0		1.3		.3				100.0
50-100	5.0	.9	1.0	.5	7.4			12.5		1.6		.3				58.9

Depth (cm)	Electrical Conductivity mmho / cm	Water Extract From Saturated Paste: Cations Ca	Mg	Na	K	CO 3	HCO 3	Cl	SO 4	Water at Satur %	ESP %	SAR	CSP %	Gypsum %	Ext P_2O_5 ppm	Available Nutrients Ca	Mg	K
		me / liter														mg / 100 g		
0- 6	.9										4	.7	75		2.9	420.0	16.7	>100
6- 50	.3										9	.8	70		3.0	196.0	18.6	>100
50-100	.4										7	.9	40		2.2	140.0	16.7	48.1

Classification: Typic Torripsamments; sandy, mixed, thermic.
Location: Raqqa province, Syria. Approximately 44 km southeast of Raqqa, 40 km east of Rasafeh; approximate coordinates 35o 36' N latitude and 39o 14' E longtitude.
Physiography: Gently undulating plateaus; elevation about 9oo m.a.s.l.
Topography: Gently sloping topography with a characteristic slope of 3 percent towards south.
Drainage: Excessively drained, very slow surface run-off, very rapid permeability.
Vegetation: Rangeland.
Parent Material: Recent aeolian sand.
Sampled by: H. Yuksel and I Daya on April 11,1981
Soil No.: SP - 90



Hori.	Depth (cm)	Description
A1	0 - 6	Dark brown (7.5 YR 4/4 m) to light brown (7.5 YR 6/4 d) sand; single grain, loose (dry and moist), non sticky and non plastic; common, very fine to fine roots; abrupt, smooth boundary; pH 8.2
C1	6+	Strong brown (7.5 YR 5/6 m) sand; single grain, loose (dry and moist), non sticky and non plastic; common and few fine to medium roots; pH 8.2

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DEPARTMENT OF SOIL SURVEY

SOIL SERIES _____ TAXONOMY _____ SOIL No SP - 91

LOCATION _____ LAB Nos. 919 - 920 - 921 - 922

Depth (cm)	Horizon	Total Sand (2-0.05)	Total Silt (0.05-0.002)	Total Clay (<0.002)	Sand: Very coarse (2-1)	Sand: Coarse (1-0.5)	Sand: Medium (0.5-0.25)	Sand: Fine (0.25-0.1)	Sand: Very fine (0.1-0.05)	Silt: (0.05-0.02)	Silt: (0.02-0.002)	Coarse fragments >2 % of whole soil	Coarse fragments 2-19 % of <76 mm	Coarse fragments 19-76 % of <76 mm	Texture class
		% of < 2 mm													
0- 8	A1	24	50	26											SiL
8- 42	C1sa	28	54	18											SiL
42- 84	C2sa	30	50	20											SiL
84-120	C3sa	26	48	26											SiL

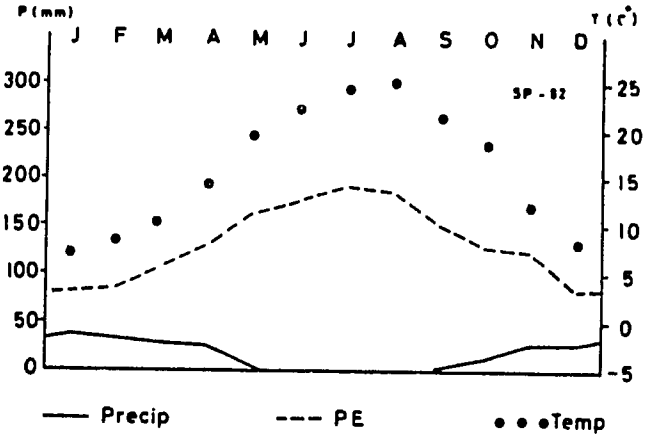
Depth (cm)	Organic Carbon %	Nitrogen %	C / N	Ext. Iron as Fe %	Carbonate as $CaCO_3$ <2 mm %	Carbonate as $CaCO_3$ <0.002 mm %	Bulk Density 1/3 bar g/cc	Bulk Density ovendry g/cc	COLE	Water Content 1/3 bar %	Water Content 15 bar %	Satur paste	pH H_2O	pH KCl
0- 8	.3				14.0	6.1				23.4	10.3		8.2	7.7
8- 42	.2				13.0	9.2				20.1	8.6		8.0	7.7
42- 84	.5				tr	tr				20.5	8.8		8.0	7.8
84-120	.7				12.5	9.2				23.1	10.2		7.8	7.7

Depth (cm)	Extractable Bases Ca (me / 100 g)	Mg	Na	K	Sum	Ext Acidity	C.E.C. Sum of Cations	C.E.C. Na OAc	Ext. Al me / 100 g	Ratios to clay C.E.C	Ratios to clay Ext. Fe	Ratios to clay 15 bar water	Ca / Mg	Total Solu. Salts ppm	Base saturation Sum of Cations %	Base saturation Na OAc %
0- 8		8.0	1.5	3.9				37.5		1.4		.4				100.0
8- 42		3.0	8.5	7.9				25.0		1.4		.5				100.0
42- 84		tr	tr	3.6				35.0		1.8		.4				100.0
84-120		tr	tr	2.6				30.0		1.2		.4				100.0

Depth (cm)	Electrical Conductivity mmho / cm	Water Extract From Saturated Paste: Cations Ca (me / liter)	Mg	Na	K	CO_3	HCO_3	Cl	SO_4	Water at Satur %	ESP %	SAR	CSR %	Gypsum %	Ext P_2O_5 ppm	Available Nutrients Ca (mg / 100 g)	Mg	K
0- 8	14.5										4	.8	100	4.4	8.5			>100
8- 42	40.0										34	2.4	100	.5	3.9			>100
42- 84	52.0																	
84-120	32.0																	

Classification: Typic Salorthids, fine, mixed, thermic.
Location: Raqqa province, Syria. Approximately 32 km southeast of Raqqa, 56 km northeast of Rasafeh; approximate coordinates 35o 49' N latitude.
Physiographic Position: Level flood plains; elevation about 400 m.a.s.l.
Topography: Level topography with a characteristic slope of less than 1 percent.
Drainage: Moderately well drained, very slow surface run-off, slow permeability.
Vegetation: Rangeland and barren.
Parent Material: Recent alluvium
Sampled by: H. Yuksel and I Daya on April 11, 1981
Soil No.: SP - 91

Notes: Family classification was based on texture determinations made in the field.



Hori.	Depth (cm)	Description
A1	0 - 8	Brown (10 YR 5/3 m) to very pale brown (10 YR 7/3 d) silty clay; strong, medium, sub-angular blocky structure; hard (dry), very firm (moist), very sticky and plastic; few, fine to medium, discontinuous, random, inped, simple closed pores; common, very fine to fine roots, inside peds; abrupt, smooth boundary; pH 8.2
C1sa	8 - 42	Brown (10 YR 4/3 m) silty clay loam; massive structure; friable (moist), slightly sticky and slightly plastic; few, medium, continuous, random, inped, simple, open pores; few, fine and coarse roots; diffuse, smooth boundary; pH 8.0
C2sa	42 - 84	Brown (10 YR 4/3 m) silty clay loam; massive structure; friable (moist), slightly sticky and slightly plastic; few, fine, continuous, random, inped, simple open pores; few, very fine and coarse roots; clear, smooth boundary; pH 8.0
C3sa	84 - 120	Brown (10 YR 4/3 m) silty clay loam; massive structure; friable (moist), slightly sticky and slightly plastic; few, very fine and coarse roots; pH 7.8

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SOIL SERIES _____ TAXONOMY . _____ SOIL. No SP - 92

LOCATION _____ LAB Nos. 923 - 924 - 925 - 926

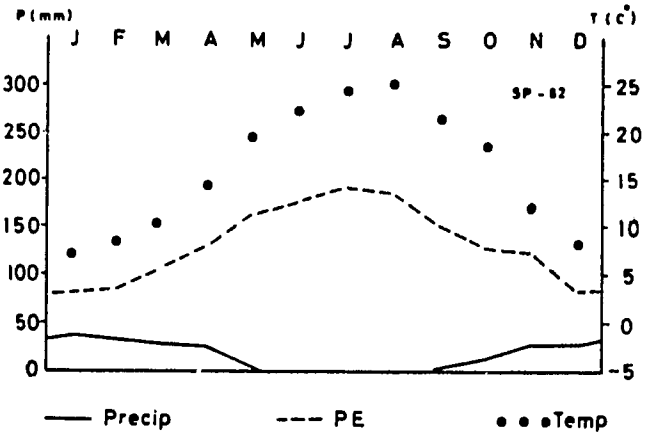
Depth (cm)	Horizon	Size Class and particle diameter (mm)																Texture class
		Total			Sand					Silt					Coarse fragments			
		Sand (2-0.05)	Silt (0.05-0.002)	Clay (<0.002)	Very coarse (2 - 1)	Coarse (1 - 0.5)	Medium (0.5 - 0.25)	Fine (0.25 - 0.1)	Very fine (0.1 - 0.05)	0.05 - 0.02	0.02 - 0.002				>2 % of whole soil	2 - 19 %	19 -76 %	
		← %, of < 2 mm →														← of <76 mm →		
0- 10	A1	52	26	22														SCL
10- 21	B21	52	26	22														SCL
21- 44	B22	58	38	4														SL
44- 65	B23	Flocullated																-

Depth (cm)	Organic Carbon %	Nitrogen %	C / N	Ext. Iron as Fe %	Carbonate as Ca Co 3		Bulk Density			COLE	Water Contents				pH		
					< 2 mm	< 0.002 mm	1/3 bar	ovendry			1/3 bar	15 bar			Satur. paste	H_2O	K Cl
					← %, →		← g / cc →				← %, →						
0- 10	.4				32.5	12.2					18.0	7.5				7.8	7.3
10- 21	.2				35.5	11.2					18.0	7.5				7.4	7.4
21- 44	.1				34.0	11.2					11.1	3.9				7.6	7.3
44- 65	.2				10.0	tr										7.8	7.1

Depth (cm)	Extractable Bases					Ext Acidity	C. E. C.			Ext. Al me / 100 g	Ratios to clay				Total Soluble Sal's ppm	Base saturation	
	Ca	Mg	Na	K	Sum		Sum of Cations	Na OAc			C. E. C	Ext. Fe	15 bar water	Ca/ Mg		Sum of Cations	Na OAc
	← me / 100 g →															← % →	
0- 10	14.0	1.0	.3	7.6	22.9			30.0			1.4		.3				76.3
10- 21	13.0	.3	1.2	1.7	16.2			25.0			1.1		.3				64.8
21- 44	14.0	1.0	5.0	3.5	23.5			12.5			3.1		1.0				100.0
44- 65			.6	.5				20.0									100.0

Depth (cm)	Electrical Conductivity mmho / cm	Water Extract From Saturated Paste								Water at Satur. %	ESP %	SAR	CSP %	Gypsum %	Ext P_2O_5 ppm	Available Nutrients		
		Cations																
		Ca	Mg	Na	K	CO 3	HCO 3	Cl	SO 4							Ca	Mg	K
		← me / liter →														← mg / 100 g →		
0- 10	4.4										0	.1	46	tr	5.0	392.0	18.6	>100
10- 21	1.0										4	.8	52	tr	5.9	364.0	5.6	>100
21- 44	10.0										40	1.9	100	tr	4.1	392.0	18.6	>100
44- 65	2.8										2	.6	100	16.2	3.0			45.3

Classification: Calcic Gypsiorthids, fine loamy, mixed, thermic.
Location: Raqqa province, Syria. Approximately 42 km southwest of Raqqa, 4 km southeast of Al-Rasafeh, 1 km east of the Rasafeh-Al Khom road; approximate coordinates 35o 38' N latitude and 38o 47' E longtitude.
Physiographic Position: Gently undulating summits of low hills.
Topography: Moderately sloping topography with a characteristic slope of 5 percent towards north.
Drainage: Well drained, medium surface run-off, moderately slow permeability.
Vegetation: Rangeland.
Parent Material: Neogene Gypsum.
Sampled by: H. Yuksel and I. Daya on April 12, 1981
Soil No.: SP - 92



Hori.	Depth (cm)	Description
A1	0 - 10	Strong brown (7.5 YR 5/6 m) to very pale brown (10 YR 7/4 d) sandy clay loam; weak, fine, subangular blocky structure, breaking to weak, fine, granular structure, slightly hard (dry), very friable, slightly sticky and slightly plastic; few, very fine, discontinuous, random, inped, simple, closed pores; few, subrounded and rounded gravel; constituting approximately 5 percent of the horizon; few small, soft, carbonate accumulation in pseudomycelium form; many, very fine to fine roots; clear, wavy boundary; pH 7.8
B21	10 - 21	Strong brown (7.5 YR 5/8 m) sandy clay loam; weak, fine, subangular blocky structure; very friable (moist), slightly sticky and slightly plastic; few, very fine, discontinuous, random, inped, simple closed pores; frequent, rounded and subrounded gravel, constituting approximately 15 percent of the horizon; frequent, large, soft, carbonate accumulations on ped faces; few, very fine roots; clear, wavy boundary; pH 7.4
B22	21 - 44	Strong brown (7.5 YR 5/6 m) clay loam; weak, medium, subangular blocky structure; firm (moist), sticky and plastic; frequent, rounded and subrounded gravel, constituting approximately 20 percent of the horizon; frequent, large, soft, carbonate accumulations on ped faces; few, very fine roots; abrupt, wavy boundary; pH 7.6
B23	44 - 65	Strong brown (7.5 YR 5/8 m) clay loam; massive structure; firm (moist), sticky and plastic; frequent, rounded and subrounded gravel constituting approximately 20 percent of the horizon; abundant, small, gypsum needles; gradual, smooth boundary; pH 7.8
R	65+	Saporlitic gypsum rock.

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SOIL SERIES _____ TAXONOMY _____ SOIL. No BP - 93

LOCATION _____ LAB Nos. 927 - 928 - 929

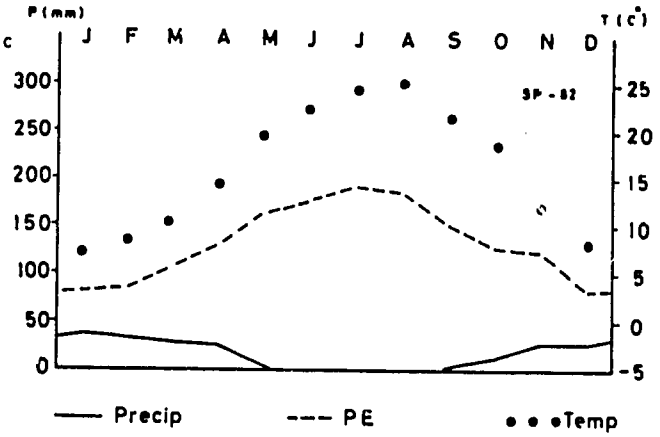
Depth (cm)	Horizon	Size Class and particle diameter (mm)													Coarse fragments			Texture class
		Total			Sand					Silt								
		Sand (2-0.05)	Silt (0.05-0.002)	Clay (<0.002)	Very coarse (2-1)	Coarse (1-0.5)	Medium (0.5-0.25)	Fine (0.25-0.1)	Very fine (0.1-0.05)	0.05-0.02	0.02-0.002				>2 % of whole soil	2-19 %	19-76 %	
		% of < 2 mm													% of <76 mm			
0- 6	A1	22	34	42														C
6- 17	C1	22	34	44														C
17- 31	C2	20	32	48														C

Depth (cm)	Organic Carbon %	Nitrogen %	C / N	Ext. Iron as Fe %	Carbonate as Ca Co 3		Bulk Density			COLE	Water Contents				pH		
					<2 mm	<0.002 mm	1/3 bar	ovendry			1/3 bar	15 bar			Satur paste	H_2O	KCl
					%		g / cc				%						
0- 6	1.3				24.0	11.7					29.0	13.3				8.2	7.3
6- 17	.5				27.0	11.2					29.7	13.6				7.8	7.0
17- 31	.4				26.0	11.7					31.3	14.5				7.6	7.1

Depth (cm)	Extractable Bases					Ext Acidity	C. E. C.			Ext. Al me / 100 g	Ratios to clay				Total Solu. Salts ppm		Base saturation	
	Ca	Mg	Na	K	Sum		Sum of Cations	Na OAc			C. E. C	Ext. Fe	15 bar water	Ca/ Mg			Sum of Cations	Na OAc
	me / 100 g																%	
0- 6	21.0	.5	.2	1.4	23.1			37.5			.9		.3					61.5
6- 17	18.0	.9	.2	1.0	20.1			37.5			.9		.3					53.6
17- 31	20.0	tr	.2	8.6	28.8			37.5			.8		.3					76.8

Depth (cm)	Electrical Conductivity mmho / cm	Water Extract From Saturated Paste								Water at Satur %	ESP %	SAR	CSP %	Gypsum %	Ext P_2O_5 ppm	Available Nutrients		
		Cations																
		Ca	Mg	Na	K	CO 3	HCO 3	Cl	SO 4							Ca	Mg	
		me / liter														mg / 100 g		
0- 6	1.3										0	.1	56		6.9	588.0	9.3	>100
6- 17	2.5										0	.2	48		5.5	504.0	16.7	95.3
17- 31	3.5										0	.1	53		5.0	560.0	tr	>100

Classification: Lithic Torriorthents, fine, mixed, thermic
Location: Raqqa province, Syria. Approximately 68 km northeast of Raqqa, 68 km southeast of Tall Abiyad; approximate coordinates 36o 39' N latitude and 39o 34' E longtitude.
Physiographic Position: Gently undulating plains, elevation about 600 m.a.s.l.
Topography: Gently sloping topography with a characteristic slope of 3 percent towards west.
Drainage: Well drained, slow surface run-off, slow permeability.
Vegetation: Rangeland.
Parent Material: Neogene Gypsum
Sampled by: H. Yuksel and I. Daya on April 13, 1981
Soil No.: SP - 93



Hori.	Depth (cm)	Description
A1	0 - 6	Brown (10 YR 5/3 m) to very pale brown (10 YR 8/3 d) clay; weak, fine, subangular blocky structure, breaking to weak, fine, granular structure; hard (dry), firm (moist), sticky and plastic; many, very fine and medium, continuous, random, inped, simple, open pores; few, very fine to fine roots, inside peds; abrupt, smooth boundary; pH 8.2
C1	6 - 17	Dark yellowish brown (10 YR 4/4 m) clay, moderate, medium, subangular blocky structure; firm (moist), very sticky and plastic; frequent, very fine to fine, continuous, random, inped, simple, open pores; few, very fine roots, inside peds; clear, smooth boundary; pH 7.8
C2	17 - 31	Yellowish brown (10 YR 5/6 m) clay; weak, fine, subangular blocky structure; firm (moist), very sticky and plastic; few, very fine to fine continuous, random, inped, simple, open pores; clear, smooth boundary; pH 7.6
R	31+	Saprolitic Gypsic Rock.

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SOIL SERIES _____ TAXONOMY _____ SOIL. No SP - 94

LOCATION _____ LAB Nos. 930 - 931

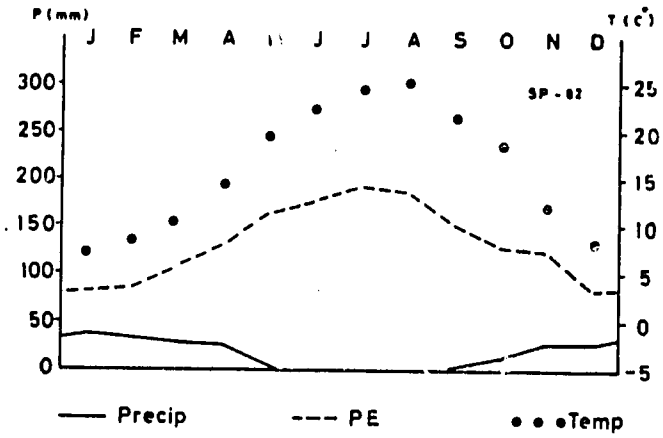
Depth (cm)	Horizon	Size Class and particle diameter (mm): Total Sand (2-0.05)	Total Silt (0.05-0.002)	Total Clay (<0.002)	Sand: Very coarse (2-1)	Sand: Coarse (1-0.5)	Sand: Medium (0.5-0.25)	Sand: Fine (0.25-0.1)	Sand: Very fine (0.1-0.05)	Silt: 0.05-0.02	Silt: 0.02-0.002				Coarse fragments >2 % of whole soil	Coarse fragments 2-19 % of <76 mm	Coarse fragments 19-76 % of <76 mm	Texture class
		% of < 2 mm																
0- 8	A1	52	30	18														L
8- 31	A2	75	14	11														SL

Depth (cm)	Organic Carbon %	Nitrogen %	C / N	Ext Iron as Fe %	Carbonate as Ca Co 3 <2 mm %	Carbonate <0.002 mm %	Bulk Density 1/3 bar g/cc	Bulk Density oven dry g/cc		COLE	Water Contents 1/3 bar %	Water Contents 15 bar %				pH Satur. paste	pH H_2O	pH KCl
0- 8	1.2				14.0						16.7	6.8					8.3	7.2
8- 31	.4				10.0						11.0	3.9					8.4	7.5

Depth (cm)	Extractable Bases Ca	Mg	Na	K	Sum	Ext Acidity	C. E. C. Sum of Cations	Na OAc		Ext. Al me / 100 g	Ratios to clay C. E. C	Ext. Fe	15 bar water	Ca / Mg	Total Solu. Salts ppm		Base saturation Sum of Cations %	Na OAc %
	me / 100 g																	
0- 8	17.0	1.0	.7	1.6	20.3			42.5			2.4		.4					47.7
8- 31	17.0	1.0	.1	1.6	19.7			30.0			2.7		.4					65.7

Depth (cm)	Electrical Conductivity mmho / cm	Water Extract From Saturated Paste: Cations Ca	Mg	Na	K	CO_3	HCO_3	Cl	SO_4	Water at Satur %	ESP %	SAR	CSP %	Gypsum %	Ext P_2O_5 ppm	Available Nutrients Ca	Mg	K
		me / litre														mg / 100 g		
0- 8	.8										1	.5	40		7.0	476.0	18.6	>100
8- 31	.9										0	.1	56		3.6	476.0	18.6	>100

Classification: Typic Vitrandept, medial, mixed, thermic shallow.
Location: Raqqa province, Syria. Approximately 31 km east of Raqqa, 2 km north of Minkhar al Sharqi mountain; approximate coordinates 35o 56' N latitude and 39o 22' E longtitude.
Physiographic Position: Steep side slopes of extinct, low volcanic cones.
Topography: Steep topography with a characteristic slope of 50 percent towards south.
Drainage: Excessively drained, very rapid surface run-off, moderately rapid permeability.
Vegetation: Rangeland.
Parent Material: Pyroclastic material and vitric ash of quaternary era.
Sampled by: H. Yuksel and I. Daya on April 14, 1981
Soil No.: SP - 94



Hori.	Depth (cm)	Description
A1	0 - 8	Brown (10 YR 4/3 m) to pale brown (10 YR 6/3 d) loam; weak, fine, granular structure; soft (dry); very friable (moist), non sticky and non plastic; abundant, vitric ash and pyroclastic material, constituting approximately 60 percent of the horizon; many, very fine to fine roots; clear smooth boundary, pH 8.3
A2	8 - 31	Dark brown (10 YR 3/3 m) sandy loam; weak, fine, subangular blocky structure; very friable moist, non sticky and non plastic; dominant vitric ash and pyroclastic material, constituting approximately 80 percent of the horizon; common, very fine to fine roots; abrupt, smooth boundary; pH 8.4
C	31+	Entirely composed of pyroclastic material.

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SOIL SERIES _____ TAXONOMY _____ SOIL No SP - 95

LOCATION _____ LAB Nos. 1429 - 1430 - 1431 - 1432

Depth (cm)	Horizon	Size Class and particle diameter (mm): Total Sand (2-0.05)	Total Silt (0.05-0.002)	Total Clay (<0.002)	Sand: Very coarse (2-1)	Sand: Coarse (1-0.5)	Sand: Medium (0.5-0.25)	Sand: Fine (0.25-0.1)	Sand: Very fine (0.1-0.05)	Silt: 0.05-0.02	Silt: 0.02-0.002				Coarse fragments: >2 % of whole soil	Coarse fragments: 2-19 %	Coarse fragments: 19-76 %	Texture class
		% of < 2 mm														% of <76 mm		
0- 13	A11	42	36	22														L
13- 32	A12	33	25	42														C
32- 58	B2	44	17	39														CL
58- 85	C	32	29	39														CL

Depth (cm)	Organic Carbon %	Nitrogen %	C / N	Ext. Iron as Fe %	Carbonate as $CaCO_3$ <2 mm %	Carbonate as $CaCO_3$ <0.002 mm %	Bulk Density 1/3 bar g/cc	Bulk Density ovendry g/cc		COLE	Water Contents 1/3 bar %	Water Contents 15 bar %				pH Satur. paste	pH H_2O	pH KCl
0- 7	1.2				1.0	2.0					19.4	8.3					6.8	6.0
13- 32	1.4				1.0	1.0					27.4	12.4					6.9	5.9
32- 58	.2				1.0	3.0					24.8	11.1					5.5	6.9
58- 85	.1				1.0	2.0					26.6	12.0					6.9	5.6

Depth (cm)	Extractable Bases Ca	Mg	Na	K	Sum (me / 100 g)	Ext Acidity	C. E. C. Sum of Cations	Na OAc		Ext. Al me / 100 g	Ratios to clay C. E. C	Ext. Fe	15 bar water	Ca / Mg	Total Solu. Salts ppm		Base saturation Sum of Cations %	Na OAc
0- 13	35.0	3.0	.4	.7	39.1			54.0			2.5		.4					72.4
13- 32	34.0	9.0	.4	.3	43.7			54.0			1.3		.3					80.9
32- 58	38.0	20.0	.7	.4	59.1			70.0			1.8		.3					84.5
58- 85	35.0	23.0	.7	.4	59.1			78.0			2.0		.3					75.7

Depth (cm)	Electrical Conductivity mmho / cm	Water Extract From Saturated Paste: Cations Ca	Mg	Na	K	CO_3	HCO_3	Cl	SO_4	Water at Satur %	ESP %	SAR	CSP %	Gypsum %	Ext P_2O_5 ppm	Available Nutrients Ca (mg / 100 g)	Mg	K
0- 13	.8										0	.5	64		>100	980.0	55.7	65.1
13- 32	.4										0	.5	62		43.0	952.0	167.2	26.4

Classification: Entic Heploxeroll, fine loamy, mixed, thermic.
Location: Idlib province, Syria. Approximately 20 km Southwest of Ariha, 29 km southwest of Idlib, 9 km southeast of Jisr El-Shoughour; approximate coordinates 35o 47' N latitude and 36o 23' E longtitude.
Physiographic Position: Steep side slopes of medium height hills.
Topography: Moderately steep topography with a characteristic slope of 25 percent towards west.
Drainage: Well drained, very rapid surface run-off, moderately slow permeability.
Vegetation: Rangeland
Parent Matwrial: Neogene Basalt.
Sampled by: H. Yuksel and Adib Jaber on June 12, 1981
Soil No.: SP - 95

Hori.	Depth (cm)	Description
A11	0 - 13	Black (10 YR 2/1 m) to dark brown (7.5 YR 3/2 d) clay loam; moderate, medium, subangular, blocky structure, breaking to moderate, medium, granular structure, approximately 1 cm wide cracks extending down to 15 cm; extremely hard (dry), firm (moist), sticky and slightly plastic; many fine, continuous, random, inped, simple, open pores; few subrounded stones constituting approximately 10 percent of the horizon; few insect nests; many fine roots inside and between peds; clear, wavy boundary; pH 6.8
A 12	13 - 32	Very dark grayish brown (10 YR 3/2 m) to dark brown (7.5 YR 3/2 d) clay; moderate, medium, subangular blocky structure; very hard (dry), firm (moist), sticky and plastic; frequent, very fine to fine, continuous, random, inped, simple open pores; few, subrounded stones, constituting approximately 10 percent of the horizon; many, fine roots, inside and between peds; clear, irregular boundary; pH 6.9
B2	32 - 58	Dark reddish brown (5 YR 3/2 m) to reddish brown (5 YR 4/3 d) clay; moderate, medium, subangular blocky structure; very hard (dry), firm (moist), sticky and slightly plastic; patchy, thin cutanes, probably of clay minerals on horizontal and vertical ped faces; few, very fine to fine, continuous, vertical, inped, simple open pores; few subrounded stones constituting approximately 5 percent of the horizon; few, very fine to fine roots, inside and between peds; gradual, broken boundary; pH 6.6
C	58 - 85	Yellowish red (5 YR 4/6 m) (5 YR 5/6 d) clay; weak, medium, subangular blocky structure; very hard (dry), firm (moist), sticky and slightly plastic; few, very fine to fine, continuous, vertical, inped, simple open pores; few, very fine to fine roots, inside and between peds; pH 6.5
R	85+	Saprolitic Basalt.

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SOIL SERIER _____ TAXONOMY _____ SOIL No SP - 96

LOCATION _____ LAB Nos. 1433 - 1434 - 1435

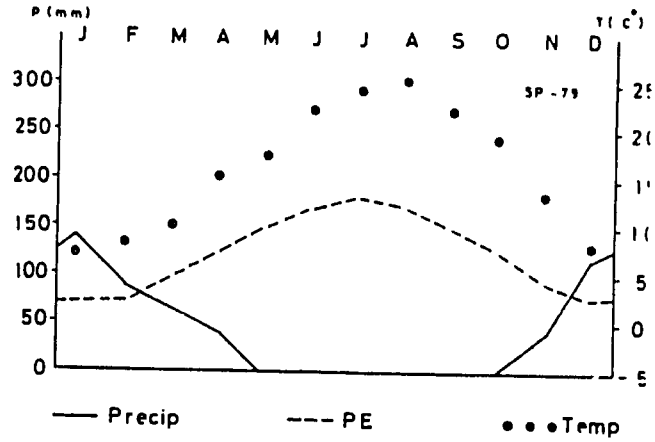
Depth (cm)	Horizon	Size Class and particle diameter (mm) — Total: Sand (2-0.05)	Total: Silt (0.05-0.002)	Total: Clay (<0.002)	Sand: Very coarse (2-1)	Sand: Coarse (1-0.5)	Sand: Medium (0.5-0.25)	Sand: Fine (0.25-0.1)	Sand: Very fine (0.1-0.05)	Silt: 0.05-0.02	Silt: 0.02-0.002				Coarse fragments: >2 % of whole soil	Coarse fragments: 2-19 % of <78 mm	Coarse fragments: 19-76 % of <78 mm	Texture class
		%, of < 2 mm																
0- 26	A1	40	8	52														C
26- 52	C1	38	14	38														CL
52-100	C2	58	18	24														SCL

Depth (cm)	Organic Carbon %	Nitrogen %	C / N	Ext. Iron as Fe %	Carbonate as Ca Co 3: <2 mm %	Carbonate: <0.002 mm %	Bulk Density: 1/3 bar g/cc	Bulk Density: oven-dry g/cc		CDLE	Water Contents: 1/3 bar %	Water Contents: 15 bar %				pH: Satur paste	pH: H_2O	pH: K Cl
0- 26	1.0				41.0	17.0					29.7	13.6					7.7	6.9
26- 52	.1				69.5	27.0					23.7	10.5					7.7	7.2
52-100	.3				77.0	26.0					17.8	7.4					8.0	7.3

Depth (cm)	Extractable Bases: Ca	Mg	Na	K	Sum (me / 100 g)	Ext Acidity	C. E. C.: Sum of Cations	Na OAc		Ext. Al me / 100 g	Ratios to clay: C. E. C	Ext. Fe	15 bar water	Ca/ Mg	Total Solu. Salts ppm		Base saturation: Sum of Cations %	Na OAc
0- 26	28.0	8.0	.9	.2	37.0			42.0			.8		.3					88.2
26- 52	15.0	5.0	1.1	.1	21.2			24.0			.6		.3					88.3
52-100	11.0	5.0	.6	.1	16.7			22.0			.9		.3					75.7

Depth (cm)	Electrical Conductivity mmho / cm	Water Extract From Saturated Paste — Cations: Ca	Mg	Na	K	CO 3	HCO 3	Cl	SO 4 (me / liter)	Water at Satur %	ESP %	SAR	CSP %	Gypsum %	Ext P_2O_5 ppm	Available Nutrients: Ca	Mg	K (mg / 100 g)
0- 26	1.6										2	.9	66		11.0	784.0	148.6	16.0
26- 52	2.1										4	1.0	62		6.0	420.0	92.9	5.7
52-100	2.5										2	.8	50		3.0	308.0	92.9	4.7

Classification: Patchic Haploxeroll, fine loamy, mixed, thermic.
Location: Hama province, Syria. Approximately 14 km south of Jisr El-Shoughour, 40 km southwest of Idlib, in the northern part of the Ghab depression; approximate coordinates 35o 42' N latitude and 36o 20' E longtitude.
Physiographic Position: Level to depressional valley fills; elevation about 350 m.a.s.l.
Topography: Level topography with a characteristic slope of 1 percent or less.
Drainage: Moderately well drained, very slow surface run-off, slow permeability.
Vegetation: Irrigated agriculture.
Parent Material: Quaternary or more recent Lacustrine deposits.
Sampled by: H. Yuksel and Adib Jaber on June 12, 1981
Soil No.: SP - 96



Hori.	Depth (cm)	Description
A1	0 - 26	Black (10 YR 2/1 m), (10 YR 2/1 d) clay; midrate, medium, subangular blocky structure; very hard (dry), firm (moist), sticky and plastic; many, fine, horizontal, inped, simple, open pores; common, fine roots, between peds; abrupt, irregular boundary; pH 7.7
C1	26 - 52	Grayish brown (10 YR 5/2 m) clay loam; massive structure; firm (moist) sticky and plastic; few, fine, vertical, inped, simple, closed pores; abundant, small, soft, carbonate accumulation on ped faces; few, fine roots, between peds; gradual, wavy boundary; pH 7.7
C2	52+	Grayish brown (10 YR 5/2 m) clay loam; massive structure; firm (moist), sticky and plastic; few, fine, vertical, inped, simple, closed pores; few, small, soft, carbonate accumulations on ped faces; few fine roots, inside peds; pH 8.0

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SOIL SERIES _____ TAXONOMY _____ SOIL No SP - 97

LOCATION _____ LAB No _____

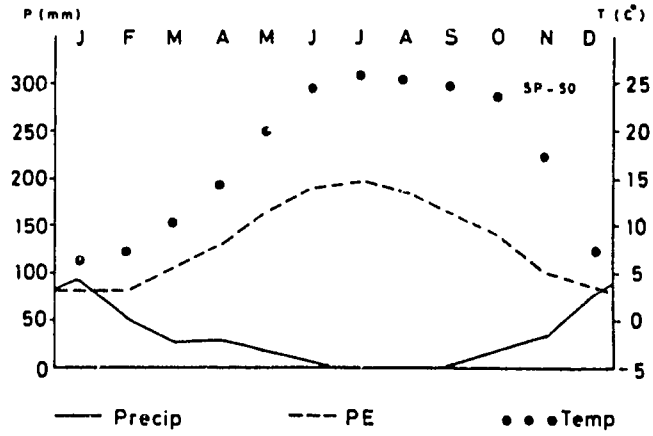
Depth (cm)	Horizon	Size Class and particle diameter (mm): Total Sand (2-0.05)	Total Silt (0.05-0.002)	Total Clay (<0.002)	Sand: Very coarse (2-1)	Sand: Coarse (1-0.5)	Sand: Medium (0.5-0.25)	Sand: Fine (0.25-0.1)	Sand: Very fine (0.1-0.05)	Silt: 0.05-0.02	Silt: 0.02-0.002	Coarse fragments >2 % of whole soil	Coarse fragments 2-19 % of <76 mm	Coarse fragments 19-76 % of <76 mm	Texture class
		%, of < 2 mm													
0- 17	A1	18	18	64											C
17- 42	B21	65	19	16											SL
42- 76	B22	33	21	46											C
76-115	B23	35	28	37											CL
115-176	Cca	34	21	45											C

Depth (cm)	Organic Carbon %	Nitrogen %	C / N	Ext. Iron as Fe %	Carbonate as $CaCO_3$ <2 mm %	Carbonate as $CaCO_3$ <0.002 mm %	Bulk Density 1/3 bar g/cc	Bulk Density ovendry g/cc	COLE	Water Contents 1/3 bar %	Water Contents 15 bar %	pH Satur paste	pH H_2O	pH KCl
0- 17	.7				49.5	10.0				36.9	17.4		7.6	6.9
17- 42	.6				42.0	14.0				14.1	5.5		7.5	6.8
42- 76	.4				68.0	19.0				28.7	13.1		7.6	6.9
76-115	.4				71.5	20.0				25.5	11.4		7.5	7.0
115-176	.2				66.0	18.0				28.3	12.9		7.5	7.9

Depth (cm)	Extractable Bases Ca (me / 100 g)	Mg	Na	K	Sum	Ext Acidity	C.E.C. Sum of Cations	C.E.C. Na OAc	Ext. Al me / 100 g	Ratios to clay C.E.C	Ratios to clay Ext. Fe	Ratios to clay 15 bar water	Ca / Mg	Total Solu. Salts ppm	Base saturation Sum of Cations %	Base saturation Na OAc %
0- 17	25.0	3.0	.2	.8	29.0			38.0		.6		.3				76.2
17- 42	27.0	3.0	.3	.5	30.8			38.0		2.4		.3				80.9
42- 76	19.0	1.0	.2	.2	20.3			26.0		.6		.3				78.1
76-115	17.0	3.0	.2	.2	20.4			22.0		.6		.3				92.5
115-176	13.0	3.0	.2	.4	16.6			22.0		.5		.3				75.6

Depth (cm)	Electrical Conductivity mmho / cm	Water Extract From Saturated Paste: Cations Ca (me / liter)	Mg	Na	K	CO_3	HCO_3	Cl	SO_4	Water at Satur %	ESP %	SAR	CSP %	Gypsum %	Est P_2O_5 ppm	Available Nutrients Ca (mg / 100 g)	Mg	K
0- 17	.6										0	.3	65		9.0	700.0	55.7	71.7
17- 42	.6										0	.4	71		5.0	756.0	55.7	42.5
42- 76	.5										0	.3	73		9.0	532.0	18.6	14.2
76-115	.8										0	.3	77		5.0	476.0	55.7	17.9
115-176	.8										1	.4	59		8.0	364.0	55.7	37.8

Classification: Petrocalcic Xerochreptes, fine loamy over fragmental, mixed, thermic, shallow.
Location: Aleppo Province, Syria. Approximately 16 km East of Aleppo, 13 km North of Al Safira, 20 m North of the Aleppo-Deir Az Zor hignway; appruximate coordinates 36o 13' N latitude and 37o 22' E longtitude.
Physiographic Position: Gently undulating plains; elevation about 370 m.a.s.l.
Topography: Gently sloping topography with a characteristic slope of 2 percent towards Southwest.
Drainage: Well drained, very slow surface run-off, moderately rapid permeability.
Vegetation: Rainfed agriculture, mainly wheat and barley.
Parent Material: Quaternary and more recent continental and terrace deposites, derived mainly from Neogene and/or Paleogene Limestone.
Sampled by: H. Yuksel and Adib Jaber
Soil No.: SP - 97



Hori.	Depth (cm)	Description
A1	0 - 17	Darkbrown (7.5 YR 4/4 m) to brown (7.5 YR 5/4 d) clay; moderate, medium, subangular blocky structure, breaking to moderate medium granular structure; hard (dry), firm (moist) sticky and slightly plastic; frequent, fine, continuous, vertical, inped, simple, open pores; few rounded gravel, constituting approximatly 5 percent of the horizon; common, fine roots insidepeds; clear, wavy boundary; pH 7.5
B21	17 - 42	Dark brown (7.5 YR 4/4 m) to brown (7.5 YR 5/4 d) sandy loam; moderate, medium subangular bloky structure; slightly hard (dry), friable, (moist), slightly sticky and slightly plastic; frequent, fine, continuous, vertical, inped, simple, open, pores; abundant rounded gravel, constituting approximatly 45 percent of the horizon; common fine roots inside peds; abrupt, wavy boundary; pH 7.4
B22	42 - 16	Dark brown (7.5 YR 4/4 m and 7.5 YR 4/4 d) clay, massive structure; extremaly hard (dry), indurated; abundant rounded gravel constituting approximatly 70 percent of the horizon; continuous, massive petrocalcic layer; abundant large, soft carbonate accumulation throughout; gradual wavy boundary; pH 7.4
B23	76 - 125	Dark yellowish brown (10 YR 4/4 m) (10 YR 4/4 d) clay loam; massive structure; extremely hard (dry), indurated; abundant, rounded gravel constituting approximatly 70 percent of the horizon; continuous, massive, petrocalcic layer; abundart large, soft carbonate accumulations througnout; clear wavy boundary; pH 7.3
C ca	125 - 126	Brown (7.5 YR 4/4 m) (7.5 YR 4/4 d) clay; massive structure; hard (dry) firm (moist), sticky and slightly plastic; frequent, rounded gravel constituting approximatly 15 percent of the horizon; dominant, large, soft carbonate accumulations on ped faces; pH 7.3

1:25,000 Soil Data Sheets

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SOIL SERIE: Annabiyeh TAXONOMY: Aquic Xerochrents SOIL. No: D-7

LOCATION: LAB Nos.: 922 - 923 - 924 - 925

Depth (cm)	Horizon	Size Class and particle diameter (mm) — Total: Sand (2-0.05)	Total: Silt (0.05-0.002)	Total: Clay (<0.002)	Sand: Very coarse (2-1)	Sand: Coarse (1-0.5)	Sand: Medium (0.5-0.25)	Sand: Fine (0.25-0.1)	Sand: Very fine (0.1-0.05)	Silt: 0.05-0.02	Silt: 0.02-0.002	Coarse fragments: >2 % of whole soil	Coarse fragments: 2-19 % of <76 mm	Coarse fragments: 19-76 % of <76 mm	Texture class
		% of < 2 mm													
0- 6	A11	36	24	38											CL
6- 11	A12	30	18	52											C
11- 53	B21	26	16	58											C
53-100	B22	26	14	60											C

Depth (cm)	Organic Carbon %	Nitrogen %	C / N	Ext Iron as Fe %	Carbonate as $CaCO_3$ <2 mm %	Carbonate as $CaCO_3$ <0.002 mm %	Bulk Density 1/3 bar g/cc	Bulk Density oven dry g/cc	COLE	Water Contents 1/3 bar %	Water Contents 15 bar %	pH Satur paste	pH H_2O	pH KCl
0- 6	1.3				1.0					25.3	11.3		7.0	6.8
6- 11	.8				1.0					31.2	14.4		7.8	7.0
11- 53	.8				1.5					33.7	15.8		7.0	6.8
53-100	.5				1.5					34.4	16.1		6.4	5.9

Depth (cm)	Extractable Bases Ca (me / 100 g)	Mg	Na	K	Sum	Ext Acidity	C.E.C. Sum of Cations	C.E.C. Na OAc	Ext. Al me / 100 g	Ratios to clay C.E.C	Ext. Fe	15 bar water	Ca/Mg	Total Solu. Salts ppm	Base saturation Sum of Cations	Base saturation NaOAc
0- 6			.1	.1				25.0		.7		.3				
6- 11			.2	.1				31.0		.6		.3				
11- 53			.2	.2				37.5		.6		.3				
53-100			.2	.1				37.5		.6		.3				

Depth (cm)	Electrical Conductivity mmho / cm	Water Extract From Saturated Paste — Cations Ca (me / liter)	Mg	Na	K	CO_3	HCO_3	Cl	SO_4	Water at Satur %	ESP %	SAR	CSP %	Gypsum %	Ext P_2O_5 ppm	Available Nutrients Ca (mg / 100 g)	Mg	K
0- 6	.6										0	.3			6.5			9.4
6- 11	.5										0	.4			5.5			9.4
11- 53	.5										0	.4			4.8			10.9
53-100	.4										0	.4			3.8			9.4

Soil Series: Annabiyeh
Classification: Aquic Xerochrepts, fine, mixed, thermic
Location: Tartous Province, Syria. Approximately 5km southeast of Tartous, 1 km northeast of village Roum El Zahab, 25m east of the road from Roum El Zahab to Agricultural Nursery
Physiographic Position: Small, isolated depressions on gently undulating crests of low eroded hills, elevation about 50 m.a.s.l.
Topography: Level to depressional topography with a characteristic slope of less than 1 percent
Drainage: Imperfectly drained, ponded, slow to very slow permeability
Parent Material: Cretaceous limestone
Sampled by: H. Yuksel, I. Daya, A. Jabri, and S. Darwish on April 4, 1982
Soil No.: 0-7

Horizon	Depth	Description
A11	0-6 cm	Very dark grayish brown(10YR 3/2m) clay loam; moderate, coarse subangular blocky structure, breaking to moderate, medium, granual structure; firm (moist), sticky and plastic; few, fine, discontinuous, vertical, inped; closed pores; many, fine roots mostly inside peds; clear, smooth boundary; pH 7.0
A12	6-11 cm	Dark yellowish brown (10YR 4/4m) clay; moderate, medium subangular blocky structure; firm (moist, very sticky and very plastic; few, fine, discontinuous, vertical, inped, closed pores; common, fine and very fine roots mostly inside peds; clear smooth boundary; pH 7.8
B21	11-55 cm	Dark yellowish brown (10YR 4/4m) clay; weak, medium, subangular blocky structure; many, fine, prominent dark gray (5YR 5/1m) mottles on ped faces; firm (moist), very sticky and very plastic; few, very fine, discontinuous, vertical, inped, closed pores; few very fine roots, mostly between peds; gradual wavy boundary; pH 7.0
B22	55 + cm	Dark yellowish brown (10YR 4/4m) clay; weak, medium, subangular blocky structure; many, fine, prominent, dark gray (5YR 5/1m) mottles on ped faces; firm (moist), very sticky and very plastic; pH 6.4

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SOIL SERIE: Arida TAXONOMY: Typic Xerorsamments SOIL No: 0-27

LOCATION: LAB Nos.: 906 - 907 - 908 - 909 - 910

Depth (cm)	Horizon	Size Class and particle diameter (mm)																Texture class
		Total			Sand					Silt					Coarse fragments			
		Sand (2-0.05)	Silt (0.05-0.002)	Clay (<0.002)	Very coarse (2-1)	Coarse (1-0.5)	Medium (0.5-0.25)	Fine (0.25-0.1)	Very fine (0.1-0.05)	0.05-0.02	0.02-0.002				>2 % of whole soil	2-19 % of <76 mm	19-76 % of <76 mm	
		% of < 2 mm																
0-12	A1	88	2	10					--									LS
12-24	C1	88	2	10														LS
24-40	C2	90	1	9														LS
40-80	C3	90	2	8														LS
80-100	C4	88	2	10														LS

Depth (cm)	Organic Carbon %	Nitrogen %	C / N	Fe Iron as Fe %	Carbonates as $CaCO_3$ <2 mm %	Carbonates as $CaCO_3$ <0.002 mm %	Bulk Density 1/3 bar g/cc	Bulk Density oven dry g/cc	COLE	Water Contents 1/3 bar %	Water Contents 15 bar %	pH Satur paste	pH H_2O	pH KCl
0-12	.1				53.0	.8				8.8	2.7		8.1	8.0
12-24	tr				40.0	1.2				8.8	2.7		8.0	7.9
24-40	tr				35.0	2.8				8.2	2.4		8.0	7.8
40-80	.1				40.0	1.6				7.8	2.2		8.0	7.9
80-100	.1				38.0	.8				8.8	2.7		8.2	7.9

Depth (cm)	Extractable Bases Ca	Mg	Na	K	Sum	Ext Acidity	CEC Sum of Cations	CEC Na OAc	Ext Al me/100 g	Ratios to clay CEC	Ext Fe	15 bar water	Ca/Mg	Total Solu. Salts ppm	Base saturation Sum of Cations	Base saturation Na OAc
	me / 100 g															
0-12	1.9	.9	.1	.1	3.0			12.8		1.3		.3				23.4
12-24	2.3	1.3	.1	.1	3.8			25.0		2.5		.3				15.2
24-40	2.5	2.5	.1	.1	5.2			15.0		1.7		.3				34.7
40-80	2.0	1.8	.2	.1	4.1			27.5		3.4		.3				14.9
80-100	2.8	1.8	.2	.1	4.9			15.0		1.5		.3				32.7

Depth (cm)	Electrical Conductivity mmho / cm	Water Extract From Saturated Paste: Cations Ca	Mg	Na	K	CO_3	HCO_3	Cl	SO_4	Water at Satur %	ESP %	SAR	CSP %	Gypsum %	Ext P_2O_5 ppm	Available Nutrients Ca	Mg	K
		me / liter														mg / 100 g		
0-12	.4										0	.3	14		5.0	53.2	16.7	9.4
12-24	.6										0	.3	9		4.0	64.4	24.2	9.4
24-40	.5										0	.3	16		4.0	70.0	46.5	9.4
40-80	.7										0	.4	7		3.0	56.0	33.4	9.4
80-100	.7										1	.4	18		3.0	78.4	33.4	9.4

Soil Series: Arida
Classification: Typic Xeropsamments, sandy, mixed, thermic
Location: Tartous Province, Syria. Approximately 10km south of Tartous, 6 km north of Al Hintar, 750m west of the highywav from Tartous to Homs
Physiographic Position: Marine aggradation plains and beaches, elevation about 10 m.a.s.l.
Topography: Level topography with a characteristic slope of 2 percent towards west
Drainage: Excessively drained, very slow surface runoff, very rapid permeability
Parent Material: Quaternary and recent marine sands
Sampled by: H. Yuksel, I. Daya, A. Jabri and S. Darwish on April 10, 1982
Soil No.: D-27

Horizon	Depth	Description
A1	0-12 cm	Yellowish brown (10YR 5/6 m) sand; sinnle grain; loose (moist), non-sticky, non-plastic; few, very fine roots; clear, smooth topography;
C	12+ cm	Yellowish brown (10YR 5/8m) sand; single grain; loose (moist), non-sticky, non-olastic; few very fine roots

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SOIL SERIE _____ TAXONOMY . Lithic Xerorthent _ SOIL No SP - 12

LOCATION Bahluliyeh-Lattakia-Syria _____ LAB Nos 1053 - 1110 - 1113

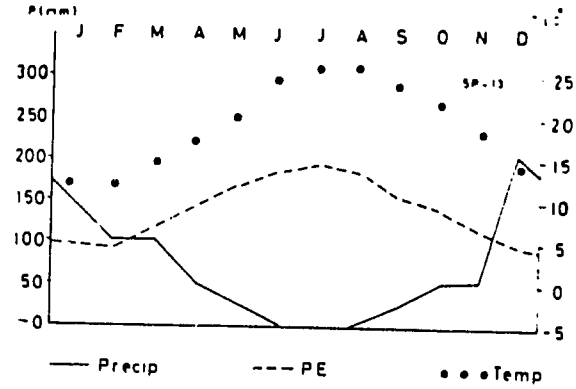
Depth (cm)	Horizon	Size Class and particle diameter (mm) — Total: Sand (2-0.05)	Silt (0.05-0.002)	Clay (<0.002)	Sand: Very coarse (2 - 1)	Coarse (1 - 0.5)	Medium (0.5 - 0.25)	Fine (0.25 - 0.1)	Very fine (0.1 - 0.05)	Silt: 0.05 - 0.02	0.02 - 0.002	Coarse fragments: >2 % of whole soil	2 - 19 %	19 76 %	Texture class
		% of < 2 mm											% of <76 mm		
0- 11	A11	30	37	33											CL
11- 21	A12	30	32	38											CL
21- 36	C	35	32	33											CL

Depth (cm)	Organic Carbon %	Nitrogen %	C / N	Ext Iron as Fe %	Carbonate as Ca Co 3 < 2 mm %	< 0.002 mm %	Bulk Density 1/3 bar g / cc	ovendry g / cc	COLE	Water Contents 1/3 bar %	15 bar %	pH Satur paste	H_2O	K Cl
0- 11	1.7				61.0					24.8	11.1		6.7	
11- 21	1.0				5.5					26.5	12.0		7.2	
21- 36	.3				54.0					24.1	10.7		5.8	

Depth (cm)	Extractable Bases me / 100 g: Ca	Mg	Na	K	Sum	Ext Acidity	CEC: Sum of Cations	Na OAc	Ext. Al me / 100 g	Ratios to clay: C E. C	Ext. Fe	15 bar water	Ca/ Mg	Total Solu. Salts ppm	Base saturation: Sum of Cations %	Na OA E %
0- 11			.4	58.2				53.7		1.6		.3				
11- 21			.4	98.7				40.0		1.1		.3				
21- 36			.4	95.0				32.5		1.0		.3				

Depth (cm)	Electrical Conductivity mmho / cm	Water Extract From Saturated Paste — Cations mg / liter: Ca	Mg	Na	K	CO 3	HCO 3	Cl	SO 4	Water at Satur %	ESP %	SAR	CSP %	Gypsum %	Ext P_2O_5 ppm	Available Nutrients mg / 100 g: Ca	Mg	K
0- 11	.7										0	.0			38.8			100
11- 21	.4										1	.1			34.0			100
21- 36	.7										1	.1			71.[illegible]			100

Soil Series: Bahluliyeh
Classification: Lithic Xerorthent, fine loamy, mixed, thermic
Location: Lattakia province, Syria. Approximately 17 km Northeast of Lattakia, 25m North of the highway from Lattakia to Aleppo; approximate coordinates 35° 36' N latitude tute and 35° 54' E longitude
Physiographic Position: Middle slopes of low hills, elevation about 30 m.a.s.l.
Topography: Very steep topography with a characteristic slope of 45 percent towards East
Drainage: Well drained, rapid surface run-off, moderately rapid permeability
Parent Material: Soft Pliocene marl
Sampled by: H. Yuksel, R. Rizek and S. Kabbas on June 22, 1980
Soil No: SP - 13



Hori.	Depth	Description
A_{11}	0-11cm	Light brownish gray (10 YR 6/2d) to grayish brown (10 YR 5/2m) gravelly clay loam; moderate, fine to medium subangular blocky; hard (dry), firm (moist), sticky and slightly plastic; frequent, fine to medium, continuous, vertical, simple, irregular pores; frequent, subrounded gravel, constituting approximatley 20 percent of the horizon; few, insect nests; many, very fine to medium roots; gradual, smooth boundary; pH 6.7
A_{12}	11-27cm	Light brownish gray (2.5 Y 6/2d) to dark grayish brown (2.5 Y 4/2m) gravelly clay loam; moderate, medium, granular structure; hard (dry), friable (moist), slightly sticky and slightly plastic; frequent, fine, medium, continuous, simple, open pores; frequent, subrounded gravel, constituting approximately 20 percent of the horizon; few insect nests; many, very fine to medium roots; clear, smooth boundary; pH 7.2
C	27-36cm	Light brownish gray (2.5 Y 6/2d) to grayish brown (2.5 Y 5/2m) gravelly clay loam; moderate, medium, granular structure; hard (dry), friable (moist), slightly sticky, slightly plastic; few, fine, continuous, vertical, open pores; frequent, subrounded and angular gravel, constituting approximately 35 percent of the horizon; few, fine and medium roots; gradual, broken boundary to the bedrock; pH 6.8
R	36 + cm	Soft Pliocene Marl

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SOIL SERIE: Bamra TAXONOMY: Typic Xerochrepts SOIL No: Y - 113

LOCATION: LAB Nos.: 863 - 864 - 865 - 866 - 867

Depth (cm)	Horizon	Size Class and particle diameter (mm): Total Sand (2-0.05)	Total Silt (0.05-0.002)	Total Clay (<0.002)	Sand: Very coarse (2-1)	Sand: Coarse (1-0.5)	Sand: Medium (0.5-0.25)	Sand: Fine (0.25-0.1)	Sand: Very fine (0.1-0.06)	Silt: 0.05-0.02	Silt: 0.02-0.002				Coarse fragments: >2 % of whole soil	Coarse fragments: 2-19 % of <76 mm	Coarse fragments: 19-76 % of <76 mm	Texture class
		% of < 2 mm																
0- 15	A11	30	23	47														C
15- 25	A12	24	25	51														C
25- 36	B1	29	24	47														C
36- 60	B21	nd	nd	nd														-
60- 80	B22	nd	nd	nd														-

Depth (cm)	Organic Carbon %	Nitrogen %	C / N	Ext. Iron as Fe %	Carbonate as Ca Co 3 <2 mm %	Carbonate as Ca Co 3 <0.002 mm %	Bulk Density 1/3 bar g/cc	Bulk Density ovendry g/cc		COLE	Water Contents 1/3 bar %	Water Contents 15 bar %			pH Satur paste	pH H_2O	pH KCl
0- 15	1.8				57.5	16.6					29.5	13.5				7.5	7.0
15- 25	1.6				61.0	17.0					31.7	14.7				7.4	7.2
25- 36	1.0				59.0	17.4					29.6	13.6				7.6	7.3
36- 60	1.2				55.0	13.4										7.5	7.2
60- 80	1.2				49.5	15.0										7.5	7.2

Depth (cm)	Extractable Bases Ca (me / 100 g)	Mg	Na	K	Sum	Ext Acidity	C. E. C. Sum of Cations	C. E. C. Na OAc		Ext. Al me / 100 g	Ratios to clay C. E. C	Ratios to clay Ext. Fe	Ratios to clay 15 bar water	Ca / Mg	Total Solu. Salts ppm		Base saturation Sum of Cations	Base saturation Na OAc
0- 15	20.9	4.3	.4	.5	26.0			45.0			1.0		.3					57.7
15- 25	20.9	3.5	.3	.4	25.1			45.0			.9		.3					55.9
25- 36	17.8	4.0	.3	.3	22.3			40.0			.9		.3					55.8
36- 60	18.1	6.2	.3	.2	24.9			45.0										55.4
60- 80	20.4	5.4	.4	.2	26.4			47.5										55.6

Depth (cm)	Electrical Conductivity mmho / cm	Water Extract From Saturated Paste: Cations Ca (me / liter)	Mg	Na	K	CO 3	HCO 3	Cl	SO 4	Water at Satur %	ESP %	SAR	CSP %	Gypsum %	Ext P_2O_5 ppm	Available Nutrients Ca (mg / 100 g)	Mg	K
0- 15	.4										0	.5	46		10.8	384.6	79.3	43.4
15- 25	.3										0	.5	46		10.0	385.2	65.2	36.8
25- 36	.2										0	.5	44		7.0	497.8	77.6	24.5
36- 60	.3										0	.5	40		6.5	507.6	115.9	22.7
60- 80	.3										0	.5	42		5.0	571.8	100.3	18.9

Soil Series: Bamra
Classification: Typic Xerochrept, fine loamy, mixed, thermic
Location: Tartous Province, Syria. Approximately 30km southeast of Tartous, 8km south of Safita, 1km north of Bamra, 20m north of the road from Safita to Yazidiyeh
Physiographic Position: Rolling summits and shoulders of medium-height hills, elevation about 260 m.a.s.l.
Topography: Strongly sloping topography with a characteristic slope of 12 percent towards north
Drainage: Well drained, rapid surface runoff, moderately slow permeability
Parent Material: Neogene Limestone and marl
Sampled by: H. Yuksel, I. Daya, A. Jabri, and S. Darwish on April 26, 1982
Soil No.: Y-113

Horizon	Depth	Description
A11	0-15 cm	Dark grayish brown (10YR 4/2m) clay; moderate, medium subangular blocky structure, breaking moderate, medium granular structure, slightly hard (dry), firm (moist), slightly sticky and plastic; many, fine, continuous, vertical, inped, irregular, open, simple pores; frequent, subrounded gravel, constituting approximately 20 percent of the horizon, few insect nests; many fine to medium roots inside peds; abrupt, smooth boundary; pH 7.5
A12	15-24 cm	Dark grayish brown (10YR 4/2m) clay, moderate, medium, subangualr blocky structure breaking to moderate, medium, granular structure, hard (dry), firm (moist), sticky and plastic; many, fine, continuous, vertical, inped, irregular open simple pores; frequent subrounded gravel, constituting approximately 20 percent of the horizon; few insect nests; many fine to medium roots inside peds; clear, smooth, boundary; pH 7.2
B1	24-36 cm	Dark brown to brown (7.5YR 4/2m) clay; moderate, medium, subangular blocky structure; firm (moist), sticky and plastic; patchy, thin cutanes, probably of clay minerals, mainly on horizontal and vertical ped faces; few, fine, continuous, vertical, inped, irregular, open, simple pores; frequent, subrounded gravel, constituting approximately 20 percent of the horizon; common, fine to medium roots, insideped; clear, smooth boundary; pH 7.2
B21	36-60 cm	Dark brown to brown (7.5YR 4/2m) clay; moderate, medium, subangular blocky structure; firm (moist), sticky and plastic; continuous, thin cutanes, probably of clay minerals, mainly on horizontal and vertical ped faces; few, fine, continuous, vertical, inped, irregular, open, simple pores; frequent, subrounded gravel, constituting approximately 30 percent of the horizon; common, fine to medium roots inside peds; abrupt, smooth, boundary; pH 7.6
B22	60-80 cm	Dark brown to brown (7.5YR 4/2m) clay; weak, medium, subangular blocky structure; firm (moist), sticky and plastic; broken, thin cutanes, probably of clay minerals, mainly on horizontal and vertical ped faces; abundant, subrounded gravel, constituting approximately 50 percent of the horizon; pH 7.5
R	80+ cm	Saprolite of Neogene Limestones and marls.

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SOIL SERIE: Bassa TAXONOMY: Lithic Xerorthents SOIL No: SP - 25

LOCATION: LAB Nos: 1244

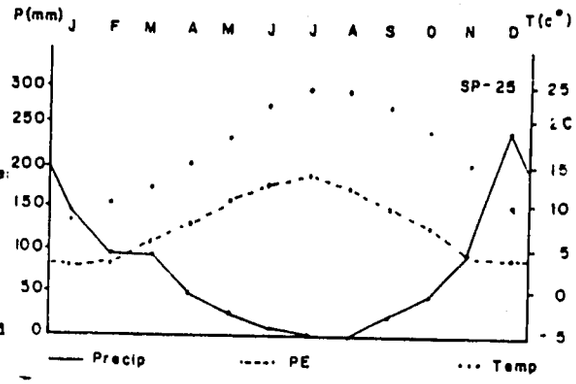
Depth (cm)	Horizon	Size Class and particle diameter (mm) — Total: Sand (2-0.05)	Silt (0.05-0.002)	Clay (<0.002)	Sand: Very coarse (2-1)	Coarse (1-0.5)	Medium (0.5-0.25)	Fine (0.25-0.1)	Very fine (0.1-0.05)	Silt: 0.05-0.02	0.02-0.002				Coarse fragments: >2 % of whole soil	2-19	19-76 % of <76 mm	Texture class
		% of < 2 mm																
0- 16	A1	34	19	47					--									C

Depth (cm)	Organic Carbon %	Nitrogen %	C / N	Ext Iron as Fe %	Carbonate as Ca Co 3 <2 mm %	<0.002 mm	Bulk Density 1/3 bar	ovendry g / cc		COLE	Water Contents 1/3 bar %	15 bar			pH Satur paste	H_2O	KCl
0- 16	1.5			11.8	3.5						28.9	13.2				7.2	

Depth (cm)	Extractable Bases me / 100 g: Ca	Mg	Na	K	Sum	Ext Acidity	C E C: Sum of Cations	Na OAc		Ext. Al me / 100 g	Ratios to clay: C E C	Ext. Fe	15 bar water	Ca/ Mg	Total Solu. Salts ppm	Base saturation: Sum of Cations	Na OAc
0- 16			.6	.2				56.0			1.2	.3	.3				

Depth (cm)	Electrical Conductivity mmho / cm	Water Extract From Saturated Paste — Cations me / liter: Ca	Mg	Na	K	CO 3	HCO 3	Cl	SO 4	Water at Satur %	ESP %	SAR	CSP %	Gypsum %	Ext P_2O_5 ppm	Available Nutrients mg / 100 g: Ca	Mg	K
0- 16	.6										1	.7			2.3			17.9

Soil Series: Bassa
Classification: Lithic Xerothent
Location: Lattakia province, Syria. Approximately 8 km East of Lattakia, 1½ km East of El Basea, 100m West of the highway from Lattakia to Tartous; approximate coordinate: 35° 30' N latitude and 35° 51' E longitude
Physiographic Position: Wide summits and backslopes of low hills; elevation about 15 m.a.s.l.
Tonography: Gently rolling topography with a characteristic slope of 6 percent towards Northwest
Drainage: Well drained, medium surface run-off, moderately rapid permeability
Parent Material: Undifferentiated weakly consolidated deposits of upper Quaternary eras
Sampled by: H. Yuksel, R. Pizek on July 6, 1980
Soil No : SP - 25



Hori.	Depth	Description
A_1	0-16 cm	Yellowish brown (10 YR 5/4d) to dark brown (10 YR 4/3m) sandy loam; weak, fine, subangular blocky structure; soft (dry), very friable (moist), slightly sticky, non plastic; many, fine to medium, continuous, irregular, simple, open pores; frequent, rounded and angular gravel, constituting approximately 20 percent of the horizon; few fine to medium roots, mostly inside peds; clear broken boundary to the bedrock; pH 7.3
R	16+ cm	Undifferentiated weakly consolidated material of Quaternary era.

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SOIL SERIE: Beit Khamnouni TAXONOMY: Typic Xerochrepts SOIL No: Y - 158

LOCATION: LAB Nos.: 898 - 899 - 900 - 901

Depth (cm)	Horizon	Size Class and particle diameter (mm): Total Sand (2-0.05)	Total Silt (0.05-0.002)	Total Clay (<0.002)	Sand: Very coarse (2-1)	Sand: Coarse (1-0.5)	Sand: Medium (0.5-0.25)	Sand: Fine (0.25-0.1)	Sand: Very fine (0.1-0.05)	Silt: 0.05-0.02	Silt: 0.02-0.002	Coarse fragments: >2 % of whole soil	Coarse fragments: 2-19 % of <76 mm	Coarse fragments: 19-76 % of <76 mm	Texture class
		% of < 2 mm													
0- 9	AP	38	22	40											C
9- 27	B21	26	18	56											C
27- 50	B22	20	16	64											C
50+	B23	20	16	64											C

Depth (cm)	Organic Carbon %	Nitrogen %	C / N	Ext. Iron as Fe %	Carbonate as $CaCO_3$ <2 mm %	Carbonate as $CaCO_3$ <0.002 mm %	Bulk Density 1/3 bar g/cc	Bulk Density ovendry g/cc	COLE	Water Contents 1/3 bar %	Water Contents 15 bar %	pH Satur paste	pH H_2O	pH KCl
0- 9	1.3				1.0					26.0	11.7		7.1	5.4
9- 27	1.0				1.0					33.1	15.4		6.6	6.1
27- 50	.6				1.0					36.6	17.3		7.0	6.7
50+	.3				tr					36.6	17.3		6.1	5.5

Depth (cm)	Extractable Bases Ca	Mg	Na	K	Sum (me / 100 g)	Ext Acidity	CEC Sum of Cations	CEC Na OAc	Ext. Al me / 100 g	Ratios to clay C.E.C	Ext. Fe	15 bar water	Ca/Mg	Total Solu. Salts ppm	Base saturation Sum of Cations	Base saturation Na OAc
0- 9			.2	.2				24.0		.6		.3				
9- 27			.2	.2				25.0		.4		.3				
27- 50			.2	.4				27.5		.4		.3				
50+			.2	.2				27.5		.4		.3				

Depth (cm)	Electrical Conductivity mmho / cm	Water Extract From Saturated Paste: Cations Ca	Mg	Na	K	CO_3	HCO_3	Cl	SO_4	Water at Satur %	ESP %	SAR	CSP %	Gypsum %	Ext P_2O_5 ppm	Available Nutrients Ca (mg / 100 g)	Mg	K
		me / liter																
0- 9	.5										0	.2			7.5			17.9
9- 27	.4										0	.3			5.6			17.9
27- 50	.8										0	.2			5.0			40.6
50+	.7										0	.4			5.6			20.8

Soil Series: Beit Khammouni
Classification: Typic Xerochrepts, fine loamy, mixed, thermic
Location: Tartous Province, Syria. Approximately 35km southeast of Tartous, 10km south of Safita, 1km south of Bamra, 30m west of the road from Safita to Bamra.
Physiographic Position: Steep side slopes of high hills, elevation about 190 m.a.s.l.
Topography: Gently sloping topography with a characteristic slope of 9 percent towards west
Drainage: Well drained, medium surface runoff, moderate permeability
Parent Material: Quaternary and recent colluvium derived mainly from Neogene and Cretaceous limestone and marl
Sampled by: H. Yuksel, I. Daya, A.Jabri and S. Darwish on April 28, 1982
Soil No.: Y-158

Horizon	Depth	Description
Ap	0-9 cm	Dark reddish brown (5YR 3/4m) clay loam; weak, fine, subangular blocky structure, breaking to moderate, medium granular structure; hard (dry), firm (moist); sticky and plastic;
B21	9-22 cm	Dark reddish brown (5YR 3/4m) clay; moderate, medium subangular blocky structure; very hard (dry), very firm (moist), very sticky and very plastic;
B22	22-50 cm	Dark reddish brown (5YR 3/4m) clay; moderate, medium, subangular blocky structure; very hard (dry), very firm (moist), very sticky and very plastic;
B23	50+ cm	Dark reddish, brown (5YR 3/4m) clay; moderate, medium, subangular blocky structure; very hard (dry), very firm (moist), very sticky and very plastic;

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SOIL SERIZ: Besmakeh TAXONOMY: Typic Xerochrepts SOIL No: SP - 38

LOCATION: LAZ Nos: 1253 - 1247 - 1223 - 1219 - 1255

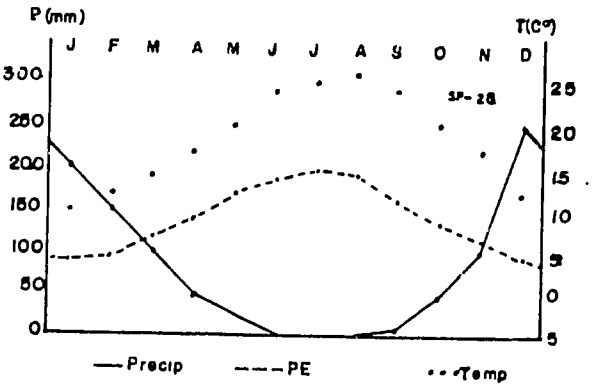
Depth (cm)	Horizon	Size Class and particle diameter (mm) — Total: Sand (2-0.05)	Silt (0.05-0.002)	Clay (<0.002)	Sand: Very coarse (2-1)	Coarse (1-0.5)	Medium (0.5-0.25)	Fine (0.25-0.1)	Very fine (0.1-0.05)	Silt: 0.05-0.02	0.02-0.002	Coarse fragments >2 mm % of whole soil	2-19 mm	19-76 mm	Texture class
		% of < 2 mm											% of <76 mm		
0- 14	AP	26	17	57											C
14- 35	B2	13	12	75											C
35- 46	B3	14	9	77											C
46- 57	C1	15	19	66											C
57- 90	C2	13	14	73											C

Depth (cm)	Organic Carbon %	Nitrogen %	C / N	Ext Iron as Fe %	Carbonate as Ca Co 3 <2 mm %	<0.002 mm %	Bulk Density 1/3 bar g/cc	ovendry g/cc	COLE	Water Contents 1/3 bar %	15 bar %	pH Satur paste	H_2O	KCl
0- 14	1.5				1.0	28.1				33.4	15.6		6.8	
14- 35	.9				1.5	26.1				41.3	19.7		6.4	
35- 46	.6				2.0	tr				41.8	20.0		7.3	
46- 57	.5				1.2	28.5				38.0	18.0		6.4	
57- 90	.5				2.0	tr				40.6	19.3		6.3	

Depth (cm)	Extractable Bases (me / 100 g) Ca	Mg	Na	K	Sum	Ext Acidity	C.E.C. Sum of Cations	Na OAc	Ext Al me / 100 g	Ratios to clay C.E.C	Ext. Fe	15 bar water	Ca / Mg	Total Soluble Salts ppm	Base saturation Sum of Cations %	Na OAE %
0- 14			.3	.3				30.0		.5		.3				
14- 35			.3	.2				32.0		.4		.3				
35- 46			.4	.2				36.0		.7		.3				
46- 57			.9	.2				34.0		.8		.3				
57- 90			.4	.2				26.0		.4		.3				

Depth (cm)	Electrical Conductivity mmho / cm	Water Extract From Saturated Paste — Cations: Ca	Mg	Na	K	CO 3	HCO 3	Cl	SO 4	Water at Satur %	ESP %	SAR	CSP %	Gypsum %	Ext P_2O_5 ppm	Available Nutrients Ca	Mg	K
		me / liter														mg / 100 g		
0- 14	.4										1	.4		1.8	31.2			28.3
14- 35	.4										0	.5		2.4	6.5			18.9
35- 46	.4										0	.6		tr	tr			18.9
46- 57	.4										1	.9		11.4	7.0			18.9
57- 90	.4										1	.6		tr	8.0			18.9

Soil Series: Besmakah
Classification: Typic Xerochrept; clayey skeletal, mixed, thermic
Location: Tartous province, Syria. Approximately 7½ km East of Tartous, 4 km West of Memlake, 25m South of the road from Tartous to Draikish; approximate coordinates 34° 54' N latitude and 35° 57' E longitude
Physiographic Position: Steep middle and upper slopes of medium height mountains, elevation about 200 m.a.s.l.
Topography: Steep topography with a characteristic slope of 15 percent towards Southeast
Drainage: Well drained, medium surface run-off, slow permeability
Parent Material: Cretaceous Limestone
Sampled by: H. Yuksel, R. Rizek and S. Darwiea on July 9, 1980
Soil No: SP - 28



Hori.	Depth	Description
A_p	0–14 cm	Reddish brown (5 YR 4/4d) dark reddish brown (5 YR 3/4m) stony clay; moderate, medium, subangular blocky structure; hard (dry), firm (moist), sticky and plastic; continuous, moderately thick cutanes, probably of clay minerals, mostly on horizontal ped faces; many, fine to medium, discontinuous, vertical, inped, irregular, closed pores; dominant, subrounded and angular gravel and stones, constituting approximately 80 percent of the horizon; plowed; few biological activities; many, very fine to fine roots; clear, smooth boundary; pH 6.8
B_2	14–35 cm	Yellowish red (5 YR 4/6m) stony clay; strong, medium, subangular blocky structure; firm (moist), very sticky and very plastic; discontinuous, thin cutanes, probably of clay minerals, mostly on horizontal ped faces; many fine to medium, discontinuous, vertical, closed pores; frequent, subrounded and angular gravels and stones, constituting approximately 40 percent of the horizon; few biological activities; common, very fine to medium roots; clear smooth boundary; pH6.4
B_3	35–46 cm	Yellowish red (5 YR 5/8m) stony clay; strong, medium, subangular blocky structure; very firm (moist), very sticky and very plastic; continuous, moderately thick cutanes, probably of clay minerals mostly on horizontal ped faces; few, fine, discontinuous, vertical, irregular, closed pores; abundant, subrounded and angular gravels and stones, constituting approximately 50 percent of the horizon; common, very fine to medium roots; clear, smooth boundary; pH 7.3
C_1	46–57 cm	Strong brown (7.5 YR 5/6m) stony clay; moderate, medium, subangular blocky structure; firm (moist), sticky and plastic; continuous thin cutanes, probably of clay minerals, mostly on horizontal ped faces; few, very fine to fine, discontinuous, vertical, irregular closed pores; abundant, subrounded and angular gravels and stones, constituting approximately 50 percent of the horizon; few, very fine to fine roots; gradual, smooth boundary; pH 6.4
C_2	57–90 cm	Strong brown (7.5 YR 5/6m) stony clay; firm (moist), sticky and plastic; continuous thin cutanes, probably of clay minerals, mostly on horizontal ped faces; very fine, discontinuous, vertical, irregular, closed pores; abundant, subrounded and angular gravels and stones, constituting approximately 50 percent of the horizon; few, fine roots; pH 6.3

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SOIL SERIE: Bmalkeh TAXONOMY: Lithic Xerochrepts SOIL No: SP - 27

LOCATION: LAB Nos.: 1242 - 1196 - 1235 - 1237 - 1196

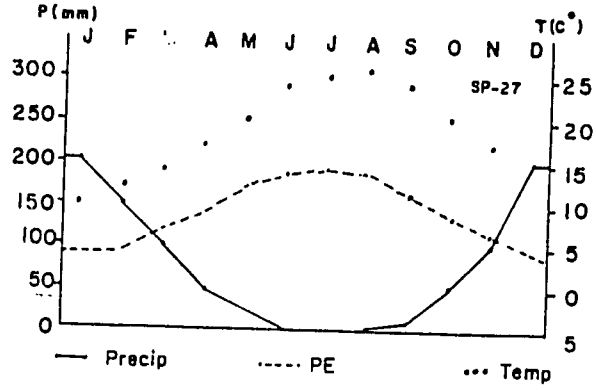
Depth (cm)	Horizon	Size Class and particle diameter (mm)																
		Total			Sand					Silt					Coarse fragments			Texture class
		Sand (2-0.05)	Silt (0.05-0.002)	Clay (<0.002)	Very coarse (2-1)	Coarse (1-0.5)	Medium (0.5-0.25)	Fine (0.25-0.1)	Very fine (0.1-0.05)	0.05-0.02	0.02-0.002				>2 % of whole soil	2-19 %	19-76 %	
		% of < 2 mm														% of <76 mm		
0- 3	A1	36	23	41														C
3- 18	B21	26	25	49														C
18- 25	B22	37	22	41														C
25- 33	B3	23	33	44														C
33- 47	C	15	41	44														C

Depth (cm)	Organic Carbon %	Nitrogen %	C / N	Ext Iron as Fe %	Carbonate as $CaCO_3$ <2 mm %	Carbonate as $CaCO_3$ <0.002 mm %	Bulk Density 1/3 bar g/cc	Bulk Density ovendry g/cc	COLE	Water Contents 1/3 bar %	Water Contents 15 bar %	pH Satur paste	pH H_2O	pH KCl
0- 3	2.7			14.5	3.5					26.6	12.0		7.2	
3- 18	2.9			9.5	2.5					30.7	14.2		6.8	
18- 25	2.1			7.0	30.0					26.5	12.0		6.9	
25- 33	2.1			6.0	48.5					29.5	13.5		6.9	
33- 47	1.9			6.7	61.0					30.7	14.1		7.2	

Depth (cm)	Extractable Bases Ca	Mg	Na	K	Sum	Ext Acidity	C.E.C Sum of Cations	Na OAc	Ext Al me/100 g	Ratios to clay C.E.C	Ext. Fe	15 bar water	Ca/Mg	Total Solu. Salts ppm	Base saturation Sum of Cations %	Na OAc
	me / 100 g															
0- 3			.5	.9				42.0		1.0	.4	.3				
3- 18			.5	.5				70.0		1.4	.2	.3				
18- 25			.3	.4				52.0		1.3	.2	.3				
25- 33			.2	.2				48.0		1.1	.1	.3				
33- 47			.1	.1				54.0		1.2	.2	.3				

Depth (cm)	Electrical Conductivity mmho / cm	Water Extract From Saturated Paste Cations Ca	Mg	Na	K	CO_3	HCO_3	Cl	SO_4	Water at Satur %	ESP %	SAR	CSP %	Gypsum %	Ext P_2O_5 ppm	Available Nutrients Ca	Mg	K
		mg / liter														mg / 100 g		
0- 3	.4										1	.5			98.0			85.0
3- 18	.4										0	.6			9.0			47.2
18- 25	.5										0	.4			2.0			37.8
25- 33	.7										0	.4			7.6			18.9
33- 47	.4										0	.3			7.0			9.4

Soil Series: Bmalkeh
Classification: Lithic Xerochrept; fine, mixed, thermic
Location: Tartous Province, Syria. Approximately 71 km East of Tartous, 16 km West of Draikish, 15m South of the road from Tartous to Draikish; approximate coordinates 34° 56' N latitude and 35° 59' E longitude.
Physiographic Position: Steep shoulders and middle slopes of medium height mountains, elevation about 300 m .a.s.l.
Topography: Steep topography with a characteristic slope of 45 percent towards North
Drainage: Well drained, medium to rapid surface run-off, moderately slow permeability
Parent Material: Cretaceous Limestone
Sampled by: H. Yuksel, R. Rizek and S. Darwish on July 8, 1980
Soil No: SP - 27



Hori.	Depth	Description
A_1	0-3 cm	Reddish Brown (5 YR 4/4d) to dark reddish brown (5 YR 3/3m) gravelly clay; strong, medium, subangular blocky structure; extremely hard (dry), extremely firm (moist), very sticky and very plastic; continuous, moderately thin cutanes of clay minerals on horizontal ped faces; many, very fine to fine, continuous, vertical, inped, irregular open pores; abundant, subrounded and angular gravel and stones, constituting approximately 50 percent of the horizon; many fine to medium roots, mostly between peds; clear, smooth boundary; pH 7.2
B_{21}	3-18 cm	Reddish brown (5 YR 4/4d) to dark reddish brown (5 YR 3/4m) gravelly clay; strong, medium, subangular blocky structure; extremely hard (dry), extremely firm (moist), very sticky and very plastic; continuous thin cutanes, probably of clay minerals mostly on horizontal ped faces; many, very fine to fine, continuous, vertical, irregular, open pores; frequent, subrounded and angular gravel and stones, constituting approximately 35 percent of the horizon; many termites and insect nests; common, fine to medium roots, mostly between peds; clear, smooth boundary; pH 6.8
B_{22}	18-25 cm	Reddish brown (5 YR 4/4m) gravelly clay; strong, medium, subangular blocky structure; extremely firm (moist), sticky and plastic; continuous, moderately thick cutanes, probably of clay minerals, mostly on horizontal ped faces; many, fine, continuous, vertical, irregular, open pores; frequent, subrounded to angular gravel, constituting approximately 30 percent of the horizon; many termites and insect nests; many, fine to medium roots mostly between peds; gradual, smooth boundary; pH 6.9
B_3	25-33 cm	Yellowish red (5 YR 5/6m) gravelly clay; moderate to weak, fine, subangular blocky structure; firm (moist), sticky and slightly plastic; few, fine, continuous, vertical, irregular, open pores; abundant subrounded and angular gravel, constituting approximately 45 percent of the horizon; few termites and insect nests; few, medium roots, clear, smooth boundary; pH 6.9
C	33-47 cm	Yellowish red (5 YR 4/8m) gravelly clay; moderate to weak, fine, subangular blocky structure; firm (moist), sticky and slightly plastic; few, fine, continuous, vertical, irregular, open pores; abundant subrounded and angular gravel, constituting approximately 50 percent of the horizon; few termites and insect nests; few, medium roots; pH 7.2

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SOIL SERIE: El Boustan TAXONOMY: Typic Xerochrepts SOIL No: Y - 208

LOCATION: LAB Nos.: 1323 - 1324 - 1325

Depth (cm)	Horizon	Size Class and particle diameter (mm)																Texture class
		Total			Sand					Silt					Coarse fragments			
		Sand (2-0.05)	Silt (0.05-0.002)	Clay (<0.002)	Very coarse (2-1)	Coarse (1-0.5)	Medium (0.5-0.25)	Fine (0.25-0.1)	Very fine (0.1-0.05)	0.05-0.02	0.02-0.002				>2 % of whole soil	2-19%	19-76 %	
		%, of < 2 mm														of <76 mm		
0- 11	A11	56	30	14														SL
11- 35	B21	32	26	42														CL
35- 72	B22	58	26	16														L

Depth (cm)	Organic Carbon %	Nitrogen %	C / N	Ext Iron as Fe %	Carbonate as Ca Co 3		Bulk Density			COLE	Water Contents				pH		
					<2 mm	<0.002 mm	1/3 bar	ovendry			1/3 bar	15 bar			Satur paste	H_2O	KCl
					%,		g / cc				%,						
0- 11	2.1				45.0	7.3					14.8	5.8				7.8	7.1
11- 35	2.1				45.0	8.2					27.5	12.5				7.6	7.1
35- 72	2.5				38.0	7.3					15.1	6.0				7.6	7.1

Depth (cm)	Extractable Bases					Ext Acidity	C E C			Ext Al me / 100 g	Ratios to clay			Ca/ Mg	Total Solu. Salts ppm		Base saturation	
	Ca	Mg	Na	K	Sum		Sum of Cations	Na OAc			C E C	Ext. Fe	15 bar water				Sum of Cations	Na OA E
	me / 100 g																%,	
0- 11	31.9	11.4	.2	.3	43.8			42.5			3.0		.4					100.0
11- 35	32.8	4.9	.2	.3	38.1			52.0			1.2		.3					73.3
35- 72	37.8	2.9	.3	.3	41.3			45.0			2.8		.4					91.8

Depth (cm)	Electrical Conductivity mmho / cm	Water Extract From Saturated Paste								Water at Satur %,	ESP	SAR	CSP	Gypsum	Ext P_2O_5 ppm	Available Nutrients		
		Cations																
		Ca	Mg	Na	K	CO_3	HCO_3	Cl	SO_4							Ca	Mg	K
		me / liter														mg / 100 g		
0- 11	.3										0	.3	75		8.0	893.2	211.8	30.2
11- 35	.4										0	.3	63		6.0	918.4	90.1	28.3

Soil Series: El Boustan
Classification: Typic Xerocrhepts, fine, mixed, thermic
Location: Tartous Province, Syria. Approximately 25 km southwest of Safita, 3 km north of Beit Sheikh Younis, 20m south of the highway from Tartous to Safita
Physiographic Position: Steep backslopes of high hills, elevation about 240 m.a.s.l.
Topography: Moderately steep topography with a characteristic slope of 25 percent towards north
Drainage: Moderately excessively drained, very rapid surface runoff, moderate permeability
Parent Material: Cretaceous limestone
Sampled by: H. Yuksel, I. Daya, A. Jabri, and S. Darwish on June 9, 1982
Soil No.: Y-208

Horizon	Depth	Description
A1	0-11 cm	Very dark brown (5YR 4/2d) to very dark gray (7.5 YR 3/1m), clay loam to clay; moderate, medium, subangular blocky structure, breaking to moderate, medium, granular structure; hard (dry), firm (moist), sticky and plastic, many, fine, continuous, inped, simple, open, pores; common fine roots inside peds; pH 7.8
B21	11-35 cm	Dark brown (7.5YR 4/2d) to 7.5YR 3/2m) clay loam to clay; moderate, medium, subangular blocky structure; hard (dry), firm (moist), sticky, plastic; patchy, thin cutanes, probably of clay minerals, mainly on horizontal and vertical ped faces; frequent, fine, continuous, vertical, inped, simple, open pores; few, subrounded gravels constituting approximately 15 percent of the horizon; common, fine roots, inside peds; pH 7.6
B22	35-72 cm	Dark brown to brown (7.5YR 4/4d) to very dark brown (7.5YR 3/4m) clay loam to clay; moderate, medium, subangular blocky structure, hard (dry), firm (moist, sticky, plastic; few, fine, continuous, vertical, inped, simple, open pores; frequent, subrounded gravel, constituting approximately 25 percent of the horizon; few, fine roots, inside peds; pH 7.6
R	72+ cm	Cretaceous limestone

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DEPARTMENT OF SOIL SURVEY

SOIL SERIE: Drykish TAXONOMY: Lithic Xerorthents SOIL. No: SP - 29

LOCATION: LAB Nos.: 1249 - 1228

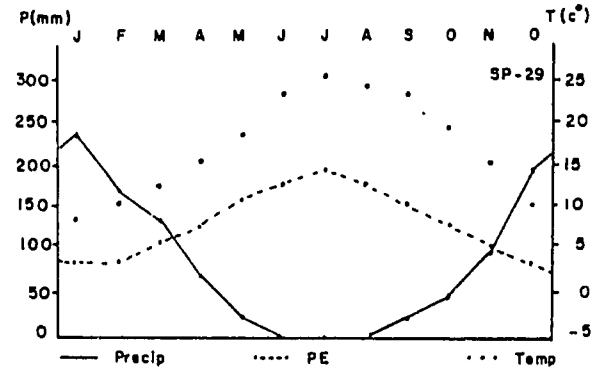
Depth (cm)	Horizon	Size Class and particle diameter (mm): Total Sand (2-0.05)	Total Silt (0.05-0.002)	Total Clay (<0.002)	Sand: Very coarse (2-1)	Sand: Coarse (1-0.5)	Sand: Medium (0.5-0.25)	Sand: Fine (0.25-0.1)	Sand: Very fine (0.1-0.05)	Silt: 0.05-0.02	Silt: 0.02-0.002					Coarse fragments: >2 % of whole soil	Coarse fragments: 2-19 %	Coarse fragments: 19-76 %	Texture class
		% of < 2 mm															of <76 mm		
0-13	A11	26	26	48					-										C
13-28	A12	19	19	65															C

Depth (cm)	Organic Carbon %	Nitrogen %	C / N	Ext Iron as Fe %	Carbonate as Ca Co 3: <2 mm %	Carbonate: <0.002 mm %	Bulk Density: 1/3 bar g/cc	Bulk Density: ovendry g/cc		COLE	Water Contents: 1/3 bar %	Water Contents: 15 bar %			pH: Satur paste	pH: H_2O	pH: KCl
0-13	2.8				1.0	25.6					30.4	14.0				7.2	
13-28	2.0				2.0	tr					37.6	17.8				6.8	

Depth (cm)	Extractable Bases: Ca (me / 100 g)	Mg	Na	K	Sum	Ext Acidity	C.E.C: Sum of Cations	Na OAc		Ext. Al me / 100 g	Ratios to clay: C.E.C	Ext. Fe	15 bar water	Ca/Mg	Total Solu. Salts ppm		Base saturation: Sum of Cations %	Na OAc
0-13			.3	.4				32.0			.7		.3					
13-28			.4	.4				60.0			.9		.3					

Depth (cm)	Electrical Conductivity mmho / cm	Water Extract From Saturated Pasts: Cations Ca (me / liter)	Mg	Na	K	CO_3	HCO_3	Cl	SO_4	Water at Satur %	ESP %	SAR	CSP %	Gypsum %	Ext P_2O_5 ppm	Available Nutrients: Ca (mg / 100 g)	Mg	K
0-13	.5										0	.4		6.3	18.0			37.8
13-28	.4										0	.5		tr	24.2			37.8

Soil Series: Drykish
Classification: Lithic Xerothent; fine, mixed, thermic
Location: Tartous province, Syria. Approximately 30 km East of Tartous, 4 km West of Draikish, 30 m South of the road from Tartous to Draikish; approximates coordinates 34° 45' N latitude and 16° 06' E longitude
Physiographic Position: Middle and upper slopes of medium height mountains, elevation about 200 m a.s.l.
Topography: Steep topography with a characteristic slope of 30 percent towards Southeast
Drainage: Well drained, medium surface run-off, slow permeability
Parent Material: Cretaceous limestone
Sampled by: H. Yuksel, R. Rizek and S. Darwish on July 9, 1980
Soil No: SP - 29



Hori.	Depth	Description
A_{11}	0-13 cm	Dark reddish gray (5 YR 4/2d) dark reddish brown (5 YR 3/2m) clay; moderate, fine, granular structure; hard (dry), firm (moist), sticky and plastic; few, fine, discontinuous, vertical, inped, irregular closed pores; frequent, subrounded and angular gravels and stones, constituting approximately 20 percent of the horizon; few termites and insect nests; many fine to medium roots, mostly inside peds; gradual, smooth boundary; pH 7.2
A_{12}	13-29 cm	Dark reddish brown (5 YR 3/ d to 5 YR 3/3m) clay; moderate, fine, granular structure; hard (dry), firm (moist), sticky and plastic; few, fine, discontinuous, vertical, inped, irregular, closed pores; frequent, subrounded and angular gravels and stones of limestone, constituting approximately 20 percent of the horizon; few termites and insect nests; many, fine to medium roots, mostly inside peds; clear, broken cretaceous limestone; pH 6.7
R	29+cm	Cretaceous Limestone

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SOIL SERIE: En Harten — TAXONOMY: Lithic Xerorthents — SOIL No: SP - 39

LOCATION: — LAB Nos.: 1254

Depth (cm)	Horizon	Size Class and particle diameter (mm)																	
		Total			Sand					Silt					Coarse fragments				
		Sand (2-0.05)	Silt (0.05-0.002)	Clay (<0.002)	Very coarse (2-1)	Coarse (1-0.5)	Medium (0.5-0.25)	Fine (0.25-0.1)	Very fine (0.1-0.05)	0.05-0.02	0.02-0.002				>2 % of whole soil	2-19 %	19-76 %	Texture class
		% of < 2 mm														% of <76 mm			
0-15	A1	44	29	27															C

Depth (cm)	Organic Carbon %	Nitrogen %	C / N	Ext Iron as Fe %	Carbonate as $CaCO_3$		Bulk Density			COLE	Water Contents				pH		
					<2 mm	<0.002 mm	1/3 bar	ovendry			1/3 bar	15 bar			Satur. paste	H_2O	KCl
					%		g / cc				%						
0-15	1.2				2.0						20.8	9.0				6.2	

Depth (cm)	Extractable Bases					Ext Acidity	C.E.C.			Ext. Al me / 100 g	Ratios to clay				Total Solu. Salts ppm		Base saturation	
	Ca	Mg	Na	K	Sum		Sum of Cations	Na OAc			C.E.C	Ext. Fe	15 bar water	Ca/Mg			Sum of Cations	Na OAc
	me / 100 g																%	
0-15			.2	.2				16.0			.6		.3					

Depth (cm)	Electrical Conductivity mmho / cm	Water Extract From Saturated Paste								Water at Satur %	ESP %	SAR	CSP %	Gypsum %	Ext P_2O_5 ppm	Available Nutrients		
		Cations																
		Ca	Mg	Na	K	CO_3	HCO_3	Cl	SO_4							Ca	Mg	K
		me / liter														mg / 100 g		
0-15	.3										1	.4			53.2			18.9

Soil Series: Em Harten

Classification: Lithic Xerorthent

Location: Homs province, Syria. Approximately 12 km West of Homs, 6km North of Qatina lack, 1 km North of the road from Homs to Tartous; approximate coordinates 30° 44' N latitude, 36° 36' E longitude

Physiographic Position: Gently undulating plains, elevation about 527 m.a.s.l.

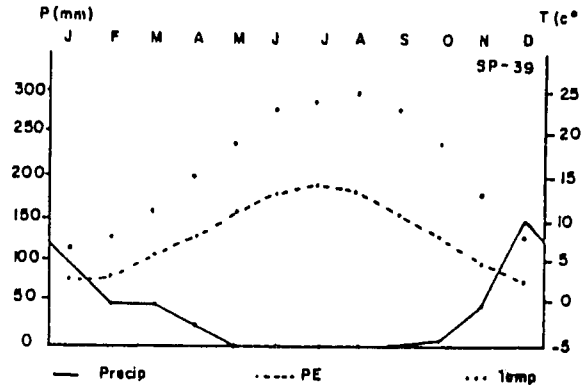
Topography: Gently sloping topography with a characteristic slope of 5 percent towards West

Drainage: Well drained, moderately slow surface runoff, slow permeability

Parent Material: Pliocene basalt

Sampled by : H. Yuksel, R. Rizk on July 17, 1980

Soil No: SP - 39



Hori.	Depth	Description
A_1	0-15 cm	Brown (7.5 YR 4/4d) to dark brown (7.5 YR 3/2m) loam; weak, fine, granular structure; hard (dry), friable (moist), slightly sticky and slightly plastic; few, very fine to fine, continuous, vertical, irregular, open pores; frequent subrounded to angular gravels and stones, constituting approximately 25 percent of the horizon; few termite and insect nests; common, very fine roots, mostly inside peds; clear, broken boundary to the bedrock; pH 6.2
R	15+cm	Neocene Basalt

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SOIL SERIE: Fm Hosh TAXONOMY: Typic Haploxeroll SOIL No: Y - 164

LOCATION: LAB Nos.: 883 - 884 - 885 - 886

Depth (cm)	Horizon	Size Class and particle diameter (mm) — Total: Sand (2-0.05)	Total: Silt (0.05-0.002)	Total: Clay (<0.002)	Sand: Very coarse (2-1)	Sand: Coarse (1-0.5)	Sand: Medium (0.5-0.25)	Sand: Fine (0.25-0.1)	Sand: Very fine (0.1-0.05)	Silt: 0.05-0.02	Silt: 0.02-0.002	Coarse fragments: >2 % of whole soil	Coarse fragments: 2-18 % of <76 mm	Coarse fragments: 19-76 % of <76 mm	Texture class
		%, of < 2 mm													
0- 20	A11	31	18	51											C
20- 32	A12	0	19	51											C
32- 43	A3	35	12	53											C
43- 70	C1	nd	nd	nd											C

Depth (cm)	Organic Carbon %	Nitrogen %	C / N	Ext Iron as Fe %	Carbonate as Ca Co 3 <2 mm	Carbonate as Ca Co 3 <0.002 mm	Bulk Density 1/3 bar	Bulk Density ovendry	COLE	Water Contents 1/3 bar	Water Contents 15 bar	pH Satur paste	pH H_2O	pH KCl
					%,		g / cc			%,				
0- 20	1.3													
20- 32	1.0				8.0	5.3				30.7	14.2		6.8	6.4
32- 43	.9				2.5					30.8	14.2		7.3	6.9
43- 70	.5				.5								7.4	7.1
													7.0	6.6

Depth (cm)	Extractable Bases Ca	Mg	Na	K	Sum	Ext Acidity	CEC Sum of Cations	CEC Na OAc	Ext Al me / 100 g	Ratios C E C	Ratios Ext. Fe	Ratios clay 15 bar water	Ca / Mg	Total Solu. Salts ppm	Base saturation Sum of Cations	Base saturation Na OAc
	me / 100 g														%,	
0- 20			.5	.1				32.5		.6		.3				100.0
20- 32	18.2	7.7	.5	.1	26.5			49.0								54.0
32- 43	18.6	6.7	.5	.2	26.0			45.0		.8		.3				57.7
43- 70			.4	.1				47.5								100.0

Depth (cm)	Electrical Conductivity mmho / cm	Water Extract From Saturated Paste — Cations Ca	Mg	Na	K	CO 3	HCO 3	Cl	SO 4	Water at Satur %,	ESP %	SAR	CSP %,	Gypsum %,	Ext P_2O_5 ppm	Available Nutrients Ca	Mg	K
		me / liter														mg / 100 g		
0- 20	.5										1	.6	100		8.4			12.3
20- 32	.3										0	.7	37		6.5	508.8	143.8	6.6
32- 43	.4										1	.6	41		5.0	520.8	123.7	18.9
43- 70	.4										0	.6	100		3.5			6.6

Soil Series: Em Hosh
Classification: Typic Haploxeroll, fine loamy, mixed, thermic
Location: Tartous Province, Syria. Approximately 40km southeast of Tartous, 12km south of Safita, 4km south of Bamra, 500m west of the road from Safita to Bamra
Physiographic Position: Undulating plains and toeslopes of medium-height hills, elevation about 100 m.a.s.l.
Topography: Gently sloping topography with a characteristic slope of 3 percent towards west
Drainage: Well drained, slow surface runoff, moderately slow permeability
Parent Material: Quaternary and recent colluvium and alluvium derived mainly from Neogene Basalt
Sampled by: H. Yuksel, I. Daya, A. Jabri and S. Darwish on April 28, 1982
Soil No.: Y-164

Horizon	Depth	Description
A11	0-20 cm	Very dark gray (10YR 3/1m) clay; strong medium; subangular blocky structure, breaking to moderate, medium granular structure; hard (dry), firm (moist), sticky and plastic; frequent, fine to medium, continuous vertical, inped, irregular, open pores; few rounded gravels constituting approximately 15 percent of the horizon; many insect nests; many, fine to medium roots; clear, smooth boundary; pH 6.8
A12	20-32 cm	Very dark grayish brown (10YR 3/1m) clay; moderate, medium, subangular blocky structure, breaking to moderate, medium granular structure; firm (moist), sticky and plastic; few, fine, continuous, vertical, inped, irregular, open pores; frequent, rounded gravels constituting approximately 20 percent of the horizon; many fine roots; clear, smooth boundary; pH 7.3
A3	32-43 cm	Dark brown to brown (7.5YR 4/2m) clay; moderate, medium subangular blocky structure; firm (moist), sticky and plastic; patchy, thin cutanes, probably of clay minerals, mainly on horizontal and vertical ped faces; few, fine open pores; frequent rounded gravels, constituting approximately 20 percent of the horizon; common, fine, roots; abrupt, smooth boundary; pH 7.4
C1	43-70 cm	Dark brown to brown (7.5YR 4/4m) clay; firm (moist), sticky and plastic; abundant rounded gravels constituting approximately 60 percent of the horizon, few, fine roots; clear, smooth boundary, pH 7.0
C2	70-110cm	Consists mainly of rounded gravels and stones and very few fine material

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SOIL SERIE: El Hishi TAXONOMY: Vertic Xerochrepts SOIL No: 0 - 31

LOCATION: LAB Nos.: 911 - 912 - 913

Depth (cm)	Horizon	Size Class and particle diameter (mm): Total Sand (2-0.05)	Total Silt (0.05-0.002)	Total Clay (<0.002)	Sand: Very coarse (2-1)	Sand: Coarse (1-0.5)	Sand: Medium (0.5-0.25)	Sand: Fine (0.25-0.1)	Sand: Very fine (0.1-0.05)	Silt: 0.05-0.02	Silt: 0.02-0.002	Coarse fragments: >2 % of whole soil	Coarse fragments: 2-19 % of <76 mm	Coarse fragments: 19-76 % of <76 mm	Texture class
		% of < 2 mm													
0- 6	A1	28	16	58											C
6- 20	B21	26	10	64											C
20- 56	B22	nd	nd	nd											-

Depth (cm)	Organic Carbon %	Nitrogen %	C / N	Ext Iron as Fe %	Carbonate as $CaCO_3$ <2 mm %	Carbonate as $CaCO_3$ <0.002 mm %	Bulk Density 1/3 bar g/cc	Bulk Density ovendry g/cc	COLE	Water Contents 1/3 bar %	Water Contents 15 bar %	pH Satur paste	pH H_2O 1/1	pH KCl 1/1
0- 6	1.4				19.0	4.1				23.8	15.8		7.8	7.0
6- 20	.9				23.0	9.3				35.7	16.8		7.6	7.0
20- 56	.6				31.0	tr							7.6	7.0

Depth (cm)	Extractable Bases Ca (me / 100 g)	Mg	Na	K	Sum	Ext Acidity	CEC Sum of Cations	CEC Na OAc	Ext. Al me / 100 g	Ratios to clay C.E.C	Ext Fe	15 bar water	Ca / Mg	Total Solu. Salts ppm	Base saturation Sum of Cations %	Base saturation Na OAc %
0- 6	24.3	13.1	.5	.2	38.1			72.0		1.2		.3				52.9
6- 20	23.7	10.9	.4	.1	35.1			62.5		1.0		.3				56.2
20- 56	4.1	26.6	.4	.1	31.2			67.5								46.2

Depth (cm)	Electrical Conductivity mmho / cm	Water Extract From Saturated Paste: Cations Ca (me / liter)	Mg	Na	K	CO_3	HCO_3	Cl	SO_4	Water at Satur %	ESP %	SAR	CSP %	Gypsum %	Ext P_2O_5 ppm	Available Nutrients Ca (mg / 100 g)	Mg	K
0- 6	.5										0	.6	33		17.0	680.4	243.4	18.9
6- 20	.4										0	.6	37		4.0	663.6	302.5	9.4
20- 56	.4										0	.6	4		4.0	104.8	394.2	9.4

Soil Series: El Hishi
Classification: Vertic Xerochrept, fine, mixed, thermic
Location: Tartous, Syria. Approximately 10km south of Tarouts, 1 km north of El Hishi, 20m east of the Tartous-Homs Highway
Physiographic Position: Marine aggradation plains and terraces, elevation about 12 m.a.s.l.
Topography: Level topography with a characteristic of 1 percent
Drainage: Well to moderately well drained, very slow surface runoff, slow permeability
Parent Material: Quaternary to recent continental marine deposits
Sampled by: H. Yuksel, I. Daya, A. Jabri, and S. Darwish on April 10, 1982
Soil No.: D-31

Horizon	Depth	Description
A1	0-6 cm	Very dark grayish brown (10YR 3/2m) clay loam; moderate, coarse, subangular blocky structure, breaking to moderate, medium, granual structure; firm (moist), sticky and plastic; frequent, fine, continuous, vertical, inped, open pores; some insect nests and worm casts; many fine roots mostly inside peds; clear, smooth boundary; pH 7.8
B21	6-20 cm	Dark brown (10YR 3/3m) clay; moderate, medium, subangular blocky structure; few, very fine, continuous, vertical, inped, open pores; common fine and very fine roots mostly between peds; gradual, smooth boundary; pH. 7.6
B22	20-56 cm	Very dark gray (10YR 3/1m) clay; moderatd, medium, subangular blocky structure; very firm (moist), very sticky and very plastic; few, very fine, discontinuous, inped, closed pores; few, very fine roots mostly between peds; diffuse , gradual boundary; pH. 7.6
C	56 + cm	Very dark gray (10YR 3/1m) clay, massive,; very firm (moist), very sticky and very plastic

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SOIL SERIE: Jaferiyeh TAXONOMY: Typic Xerochrepts SOIL. No: Y - 207

LOCATION: LAB Nos.: 1318 - 1319 - 1320 - 1321 - 1322

Depth (cm)	Horizon	Size Class and particle diameter (mm): Total Sand (2-0.05)	Total Silt (0.05-0.002)	Total Clay (<0.002)	Sand: Very coarse (2-1)	Sand: Coarse (1-0.5)	Sand: Medium (0.5-0.25)	Sand: Fine (0.25-0.1)	Sand: Very fine (0.1-0.05)	Silt: 0.05-0.02	Silt: 0.02-0.002	Coarse fragments: >2 % of whole soil	Coarse fragments: 2-19 % of <76 mm	Coarse fragments: 19-76 % of <76 mm	Texture class
		% of < 2 mm													
0- 15	A11	32	24	44											C
15- 36	A12	36	24	40											C
36- 68	B2	28	24	48											C
68-105	C1	20	26	54											C
105-135	C2	48	30	22											L

Depth (cm)	Organic Carbon %	Nitrogen %	C / N	Ext Iron as Fe %	Carbonate as Ca Co 3: <2 mm %	Carbonate as Ca Co 3: <0.002 mm %	Bulk Density 1/3 bar g/cc	Bulk Density ovendry g/cc	COLE	Water Contents 1/3 bar %	Water Contents 15 bar %	pH Satur. paste	pH H_2O	pH KCl
0- 15	1.5				15.5	2.0				28.2	12.9		7.6	6.8
15- 36	1.0				15.5	4.0				26.3	11.9		7.8	6.8
36- 68	1.0				9.5	3.0				30.1	13.9		7.8	6.7
68-105	1.6				9.5	5.0				33.3	15.5		7.7	6.7
105-135	1.6				10.0	4.6				18.6	7.8		7.2	6.8

Depth (cm)	Extractable Bases Ca (me / 100 g)	Mg	Na	K	Sum	Ext Acidity	CEC Sum of Cations	CEC Na OAc	Ext. Al me / 100 g	Ratios to clay C. E. C	Ext. Fe	15 bar water	Ca / Mg	Total Solu. Salts ppm	Base saturation Sum of Cations %	Base saturation Na OA E
0- 15	28.0	3.5	.4	1.3	33.1			50.0		1.1		.3				66.2
15- 36	26.8	3.3	.2	1.0	31.3			50.0		1.3		.3				62.6
36- 68	29.0	4.5	.3	1.8	35.5			57.5		1.2		.3				61.7
68-105	32.0	5.2	.3	1.5	39.0			62.5		1.2		.3				62.4
105-135	41.6	6.7	.3	.3	48.9			56.2		2.6		.4				87.0

Depth (cm)	Electrical Conductivity mmho / cm	Water Extract From Saturated Paste: Cations Ca (me / liter)	Mg	Na	K	CO 3	HCO 3	Cl	SO 4	Water at Satur. %	ESP %	SAR	CSP %	Gypsum %	Ext P_2O_5 ppm	Available Nutrients Ca (mg / 100 g)	Mg	K
0- 15	.6										0	.4	56		9.0	784.0	65.0	>100
15- 36	.4										0	.2	53		5.5	750.4	61.3	94.4
36- 68	.4										0	.2	50		6.3	812.0	83.6	>100
68-105	.4										0	.3	51		10.0	896.0	96.6	>100

Soil Series: Jaferiyeh
Classification: Typix Xerochrepts, fine loamy, mixed, thermic
Location: Tartous Province, Syria. Approximately 25km southeast of Tartous, 11km south of Safita, 1km west of Yazidiyeh, 50m south of the pipeline
Physiographic Position: Level floodplains and terraces of the drainageways, elevation about 110 m.a.s.l.
Topography: Level topography with a characteristic slope of 2 percent towards south
Drainage: Well drained, slow surface runoff, slow permeability
Parent Material: Quaternary and recent alluvium derived mainly from Cretaceous and Neogene Limestone and marl
Sampled by: H. Yuksel, I. Daya, A. Jabri, and S. Darwish on June 9, 1982
Soil No.: Y-207

Horizon	Depth	Description
A11	0-15 cm	Very dark gray (10YR 3/1d) to very dark grayish brown (10YR 3/2m) clay loam to clay; strong subangular blocky structure breaking to moderate, medium, granular structure approximately 1cm wide cracks extending down to 50cm; very hard (dry), very firm (moist), sticky and plastic frequent, fine, continuous, vertical, inped, simple, open pores, few rounded gravel constituting approximately 5 percent of the horizon; many fine to medium roots inside peds; gradual smooth boundary; pH. 7.6
A12	15-36 cm	Very dark gray (10YR 3/1d) to very dark grayish brown (10YR 3/2m) clay loam to clay; strong subangular blocky structure; very hard (dry), very firm (moist),sticky, plastic; few, fine, continuous, vertical, inped, simple, open pores; few rounded gravel constituting approximately 10 percent of the horizon; common, fine, roots between peds; gradual smooth boundary; pH 7.8
B2	36-68 cm	Very dark gray (10YR 3/1d) to very dark grayish brown (10YR 3/2m) clay loam to clay; strong subangular blocky structure; very hard (dry), very firm (moist), sticky, plastic, patchy, thin cutanes; probably of clay minerals, mainly on horizontal and vertical ped faces; few, fine, continuous, vertical, inped, simple, open pores; few rounded gravel, constituting approximately 15 percent of the horizon; few, very fine roots between peds, gradual, smooth boundary, pH. 7.8
C1	68-105cm	Dark gray (10YR 4/1d) to dark grayish brown (10YR 4/2m) clay loam to clay; moderate subangular blocky structure; very hard (dry), very firm (moist), sticky and plastic, few rounded gravels constituting approximately 15 percent of the horizon; gradual, smooth boundary; pH 7.7
C2	105-135cm	Dark gray (10YR 4/1d) to dark grayish brown (10YR 4/2m) clay loam to clay; moderate subangular blocky structure; very hard (dry), very firm (moist), sticky and plastic; few rounded gravels constituting approximately 15 percent of the horizon; pH 7.2

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SOIL SERIE: Jindiriyeh TAXONOMY: Lithic Xerorthents SOIL No: Y - 203

LOCATION: LAB Nos: 1306 - 1307

Depth (cm)	Horizon	Size Class and particle diameter (mm)																		Texture class
		Total			Sand					Silt					Coarse fragments					
		Sand (2-0.05)	Silt (0.05-0.002)	Clay (<0.002)	Very coarse (2-1)	Coarse (1-0.5)	Medium (0.5-0.25)	Fine (0.25-0.1)	Very fine (0.1-0.05)	0.05-0.02	0.02-0.002				>2 % of whole soil	2-19%	19-76 %			
		% of < 2 mm													% of <76 mm					
0- 11	A11	38	40	22																L
11- 29	A12	30	40	30																CL

Depth (cm)	Organic Carbon %	Nitrogen %	C / N	Ext Iron as Fe %	Carbonate as Ca Co 3 <2 mm %	Carbonate as Ca Co 3 <0.002 mm %	Bulk Density 1/3 bar g/cc	Bulk Density ovendry g/cc		COLE	Water Contents 1/3 bar %	Water Contents 15 bar %			pH Satur paste	pH H_2O	pH KCl
0- 11	2.4				90.0	20.0					20.0	8.6				7.9	7.3
11- 29	2.1				92.5	24.0					23.8	10.6				7.8	7.3

Depth (cm)	Extractable Bases Ca	Mg	Na	K	Sum	Ext Acidity	CEC Sum of Cations	CEC Na OAc		Ext. Al me / 100 g	Ratios to clay C E C	Ratios to clay Ext Fe	Ratios to clay 15 bar water	Ca / Mg	Total Solu. Salts ppm		Base saturation Sum of Cations %	Base saturation Na OAc
	me / 100 g																	
0- 11	14.7	.5	.1	.1	15.4			22.0			1.0		.4					70.1
11- 29	15.9	1.0	.1	.1	17.0			24.0			.8		.4					70.8

Depth (cm)	Electrical Conductivity mmho / cm	Water Extract From Saturated Paste: Cations Ca	Mg	Na	K	CO 3	HCO 3	Cl	SO 4	Water at Satur %	ESP %	SAR	CSP %	Gypsum %	Ext P_2O_5 ppm	Available Nutrients Ca	Mg	K
		me / liter														mg / 100 g		
0- 11	.6										0	.3	66		9.0	11.6	9.8	8.5
11- 29	.7										0	.2	66		5.0	45.2	17.8	4.7

Soil Series: Jindiriyeh
Classification: Lithic Xerorthent, fine loamy, mixed, thermic
Location: Tartous Province, Syria. Approximately 30km southeast of Tartous, 10km south of Safita, 1.5km south of Bamra, 50m east of the road from Safita to Bamra
Physiographic Position: Steep shoulders and backslopes of high hills, elevation about 200 m.a.s.l.
Topography: Hilly topography with a characteristic slope of 30 percent towards west
Drainage: Moderately excessively drained, very rapid surface runoff, moderate permeability
Parent Material: Neogene marl and limestone
Sampled by: H. Yuksel, I. Daya, A. Jabri, and S. Darwish on June 9, 1982
Soil No.: Y-203

Horizon	Depth	Description
A11	0-11 cm	Dark gray (10YR 4/1) to very dark grayish brown (10YR 3/2m) clay loam; moderate, medium subangular blocky structure, breaking to moderate, medium, granular structure, slightly hard (dry) firm (moist), slightly sticky, slightly plastic, many fine, continuous, vertical, inped, simple, open pores; few subrounded gravels constituting approximately 10 percent of the horizon; few insect nests and worm casts; many fine to medium inside peds; clear smooth boundary; pH 7.9
A12	11-29 cm	Dark gray (10YR 4/1) to very dark grayish brown, (10YR 3/2m) clay loam; moderate, medium subangular blocky structure; slightly hard (dry), firm (moist) slightly sticky, slightly plastic; many, fine, continuous, vertical, inped, simple, open pores; few subrounded gravel, constituting aporoximately 15 percent of the horizon; few insect nests and worm casts; common, fine, roots inside peds; abrupt, smooth boundary; pH 7.7
R	29+ cm	Neogene marl

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SOIL SERIE: Jozeriyeh TAXONOMY: Typic Xerorthents SOIL. No: SP - 24

LOCATION: LAB Nos.: 1227 - 1223

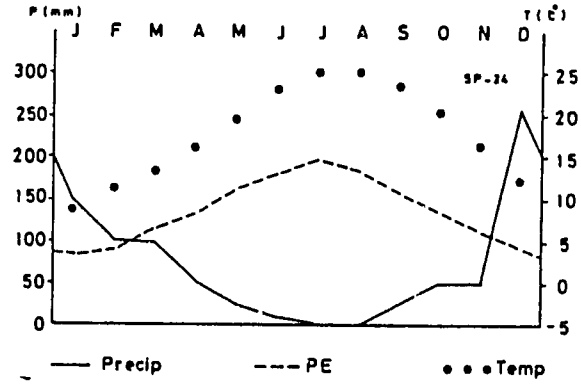
Depth (cm)	Horizon	Size Class and particle diameter (mm) — Total: Sand (2-0.05)	Total: Silt (0.05-0.002)	Total: Clay (<0.002)	Sand: Very coarse (2 - 1)	Sand: Coarse (1 - 0.5)	Sand: Medium (0.5 - 0.25)	Sand: Fine (0.25 - 0.1)	Sand: Very fine (0.1 - 0.05)	Silt: 0.05 - 0.02	Silt: 0.02 - 0.002				Coarse fragments: >2 % of whole soil	Coarse fragments: 2 - 19 % of <76 mm	Coarse fragments: 19-76 % of <76 mm	Texture class
		% of < 2 mm																
0- 13	AP	31	22	47					-									C
13- 28	A1	34	19	47														C

Depth (cm)	Organic Carbon %	Nitrogen %	C / N	Ext Iron as Fe %	Carbonate as Ca Co 3 < 2 mm %	Carbonate as Ca Co 3 <0.002 mm %	Bulk Density 1/3 bar g / cc	Bulk Density ovendry g / cc		COLE	Water Contents 1/3 bar %	Water Contents 15 bar %			pH Satur paste	pH H_2O /	pH K Cl /
0- 13	1.6			7.5	3.0						29.4	13.5				6.5	
13- 28	1.3			5.7	9.0						28.9	13.2				7.2	

Depth (cm)	Extractable Bases Ca	Mg	Na	K	Sum	Ext Acidity	C. E. C Sum of Cations	Na OAc		Ext. Al me / 100 g	Ratios to clay C. E. C	Ext. Fe	15 bar water	Ca/ Mg	Total Solu. Salts ppm		Base saturation Sum of Cations %	Na OA E %
	me / 100 g																	
0- 13			.4	.2				56.0			1.2	.2	.3					
13- 28			.6	.2				56.0			1.2	.1	.3					

Depth (cm)	Electrical Conductivity mmho / cm	Water Extract From Saturated Paste — Cations: Ca	Mg	Na	K	CO 3	HCO 3	Cl	SO 4	Water at Satur %	ESP %	SAR	CSP %	Gypsum %	Ext P_2O_5 ppm	Available Nutrients Ca	Mg	K
		me / liter														mg / 100 g		
0- 13	.4										0	.6			46.0			18.9
13- 28	.3										1	.7			2.3			18.9

Soil Series: Jozeriyeh
Classification: Typic Xerorthent; fragmental, mixed, thermic
Location: Lattakia province, Syria, Approximately 12½ km North of Lattakia, 2 km North of Karsana, 20m East of the highway from Lattakia to Kassab; approximate coordinates 35° 38' N latitude and 35° 50' E longitude
Physiographic Position: Gently undulating wide summits of low hills, elevation about 60 m.a.s.l.
Topography: Gently sloping topography with a characteristic slope of 13 percent towards South
Drainage: Well drained, slow surface run-off, moderately rapid permeability
Vegetation: Non irrigated wheat and corn
Parent Material: Quaternary or more recent colluvium derived mainly from Pliocene limestone and Marl
Sampled by: H. Yuksel, R. Rizek and S. Kabbas on July 5, 1980
Soil No: SP - 24



Hori.	Depth	Description
A_p	0-13 cm	Dark gray (10 YR 4/1d) to very dark grayish brown (10 YR 3/2m) gravelly clay; strong, medium, subangular blocky structure; approximately 1cm wide cracks extending up to 10cm; very hard (dry), very firm (moist), sticky and plastic; patchy thin cutanes of clay, mostly on voids; many, fine to medium, discontinuous, irregular, simple, closed pores; abundant, subrounded to angular gravel, constituting approximately 45 percent of the horizon; few insect nests; common, very fine to medium roots, mainly between peds; gradual, smooth boundary; pH 6.5
A_1	13-28 cm	Dark gray (10 YR 4/1d) to very dark gray (10 YR 3/1m) gravelly clay; very firm (moist), very sticky and very plastic; patchy, thin cutanes of clay, mainly on horizontal and vertical ped faces and in voids; abundant subrounded and angular gravel, constituting approximately 60 percent of the horizon; few, very fine to fine roots, mostly between peds; gradual, smooth boundary; pH 7.2
C_1	28-48 cm	Very dark gray (10 YR 3/1m) very gravelly clay; structureless; abundant, subrounded gravel and stones; constituting approximatly 70 percent of the horizon; diffuse, smooth boundary
C_2	48-60 cm	Dark brown (10 YR 3/3m) clay; structureless; abundant, subrounded and angular gravel and stones, constituting approximately 80 percent of the horizon; diffuse, smooth boundary
C_3	60 + cm	Horizon mostly consists of subrounded and angular gravels and stones which constitute more than 90 percent of the soil volume; fine earth fraction that fills between the coarse fragments is of clay.

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SOIL SERIE: Kadmous — TAXONOMY: Typic Xerochrepts — SOIL No: 82 - 22

LOCATION: — LAB Nos.: 1073 - 1094 - 1072 - 1087 - 1095 - 1129

Depth (cm)	Horizon	Size Class and particle diameter (mm) — Total: Sand (2-0.05)	Silt (0.05-0.002)	Clay (<0.002)	Sand: Very coarse (2-1)	Coarse (1-0.5)	Medium (0.5-0.25)	Fine (0.25-0.1)	Very fine (0.1-0.05)	Silt: 0.05-0.02	0.02-0.002	Coarse fragments >2 % of whole soil	2-19 %	19-76 %	Texture class
		% of < 2 mm											% of <76 mm		
0- 18	A11	35	31	34											CL
18- 35	A12	39	23	38											CL
35- 44	B21	35	19	46											C
44- 56	B22	28	18	54											C
56- 75	C1	29	23	48											C
75-110	C2	34	17	49											C

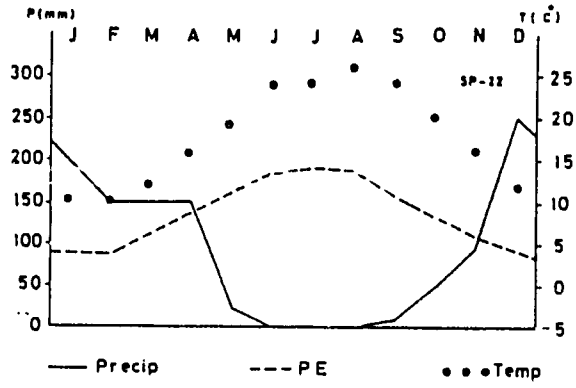
Depth (cm)	Organic Carbon %	Nitrogen %	C / N	Ext Iron as Fe %	Carbonate as $CaCO_3$ <2 mm %	Carbonate <0.002 mm %	Bulk Density 1/3 bar g/cc	Bulk Density ovendry g/cc	COLE	Water Contents 1/3 bar %	Water Contents 15 bar %	pH Satur paste	pH H_2O	pH KCl
0- 18	1.2				53.0					24.5	10.9		6.8	
18- 35	1.7				47.5					25.2	11.3		7.1	
35- 44	1.1				60.5					28.4	13.0		7.2	
44- 56	.8				64.0					32.1	14.9		7.0	
56- 75	.9				47.5					30.0	13.8		7.0	
75-110	.6				61.0					29.6	13.6		7.3	

Depth (cm)	Extractable Bases Ca	Mg	Na	K	Sum (me / 100 g)	Ext Acidity	C.E.C Sum of Cations	C.E.C Na OAc	Ext. Al me / 100 g	Ratios to clay C.E.C	Ext. Fe	15 bar water	Ca / Mg	Total Solu. Salts ppm	Base saturation Sum of Cations %	Base saturation Na OAc %
0- 18			.7	371.2				40.0		1.2		.3				
18- 35			.7	397.5				40.0		1.1		.3				
35- 44			.6	297.5				37.5		.8		.3				
44- 56			.6	261.0				37.5		.7		.3				
56- 75			.7	287.5				33.7		.7		.3				
75-110			.3	165.0				46.2		.9		.3				

Depth (cm)	Electrical Conductivity mmho / cm	Water Extract From Saturated Paste — Cations Ca	Mg	Na	K	CO_3	HCO_3	Cl	SO_4	Water at Satur %	ESP %	SAR	CSP %	Gypsum %	Ext P_2O_5 ppm	Available Nutrients Ca	Mg	K
		me / liter														mg / 100 g		
0- 18	.6										1	.1			24.0			>100
18- 35	.5										1	.0			32.0			>100
35- 44	.5										1	.0			16.0			>100
44- 56	.4										1	.1			31.0			>100
56- 75	.5										2	.1			31.5			>100
75-110	.4										0	.0			32.0			>100

Soil Series: Kadmous
Classification: Typic Xerochrept; clayey skeletal, mixed, thermic
Location: Lattakia province, Syria. Approximately 70 km South of Lattakia, 25 km East of Banias, 10m North of the highway from Banias to Masyaf; approximate location 35° 06' N latitude and 36° 06' E longitude

Physiographic Position: Middle and lower slopes of high mountains, elevation about 900 m.a.s.l.
Topography: Mountainous topography with a characteristic slope of more than 100 percent towards West
Drainage: Well drained, very rapid surface run-off, moderate permeability
Parent Material: Quaternary or more recent Colluvium, derived mainly from Cretaceous limestone
Sampled by : H. Yuksel, R. Rizek and S. Kabbas on July 5, 1980
Soil No : SP - 22



Hori.	Depth	Description
A_{11}	0–18 cm	Brown (10 YR 5/3d) to dark brown (10 YR 4/3m) gravelly clay loam; strong, medium subangular blocky structure, breaking to strong, fine to medium granular structure; very hard (dry), firm (moist), sticky and slightly plastic; many, very fine to fine, frequent, medium, continuous, irregular, simple, open pores; frequent, subrounded and angular gravel, constituting approximately 25 percent of the horizon; some insect nests and worm casts; many, very fine to medium roots, mostly inside peds; gradual, smooth boundary; pH 6.8
A_{12}	18–35 cm	Grayish brown (10 YR 5/2d) to dark brown (10 YR 4/3m) gravelly clay loam; strong, medium, subangular blocky structure, breaking to strong, coarse granular structure; very hard (dry), firm (moist), sticky and plastic; many, very fine to fine, continuous, irregular, simple, open pores; frequent, subrounded and angular gravel and stones, constituting approximately 40 percent of the horizon; few insect nests and worm casts; many, very fine to fine roots, mostly inside peds; clear, smooth boundary; pH 7.1
B_{21}	35–44 cm	Brown (10 YR 5/3m) gravelly clay; moderate, medium, subangular blocky structure; firm (moist), sticky and plastic; frequent, very fine to fine, continuous, irregular, simple, open pores; frequent, subrounded and angular gravel and stones, constituting approximately 40 percent of the horizon; common, very fine to fine roots; clear, smooth boundary; pH 7.2
B_{22}	44–56 cm	Yellowish brown (10 YR 5/4m) gravelly clay; weak, moderate to coarse subangular blocky structure; firm (moist), sticky and plastic; few, fine, continuous, irregular, simple, open pores; abundant subrounded and angular gravel and stones, constituting approximately 50 percent of the horizon; few, very fine roots; clear, smooth boundary; pH 7.0
C_1	56–75 cm	Dark brown (10 YR 4/3m) gravelly clay; weak, coarse subangular blocky structure; very firm (moist), very sticky and very plastic; few, very fine, discontinuous, irregular, simple, closed pores; frequent, subrounded and angular gravel and stones, constituting approximately 30 percent of the horizon; few, very fine roots; clear, smooth boundary; pH 7.0
C_2	75–110 cm	Dark yellowsih brown (10 YR 4/4m) clay; massive; extremely firm (moist), very sticky and very plastic, frequent, subrounded and rounded gravel and stones, constituting approximately 20 percent of the horizon; few, very fine roots; pH 7.3

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SOIL SERIE: Kansebba TAXONOMY: Lithic Xerorthents SOIL No: SR - 15

LOCATION: LAB Nos: 1123

Depth (cm)	Horizon	Size Class and particle diameter (mm)																	
		Total			Sand					Silt					Coarse fragments			
		Sand (2-0.05)	Silt (0.05-0.002)	Clay (<0.002)	Very coarse (2-1)	Coarse (1-0.5)	Medium (0.5-0.25)	Fine (0.25-0.1)	Very fine (0.1-0.05)	0.05-0.02	0.02-0.002				>2 % of whole soil	2-19 %	19-76 %	Texture class
		% of < 2 mm														% of <76 mm		
0- 7	A1	33	33	34														CL

Depth (cm)	Organic Carbon %	Nitrogen %	C / N	Ext Iron as Fe %	Carbonate as Ca Co 3		Bulk Density			COLE	Water Contents				pH		
					< 2 mm %	< 0.002 mm %	1/3 bar	ovendry			1/3 bar %	15 bar %			Satur paste	H_2O	K Cl /
							g / cc										
0- 7	2.4				75.0						24.7	11.0				6.6	

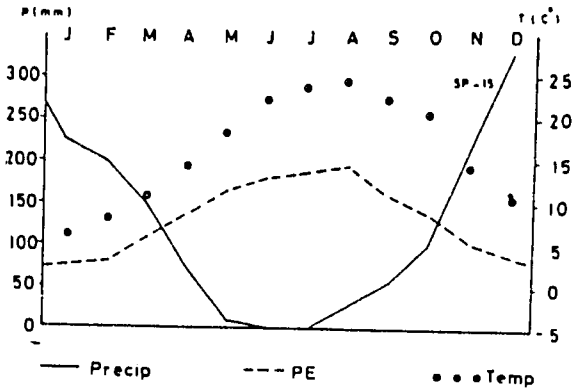
Depth (cm)	Extractable Bases					C E C				Ext Al me / 100 g	Ratios to clay				Total Soluble Salts ppm	Base saturation	
	Ca	Mg	Na	K	Sum	Ext Acidity	Sum of Cations	Na OAc			C E C	Ext. Fe	15 bar water	Ca/ Mg		Sum of Cations	Na OAc
	me / 100 g																
0- 7			.3	83.3				50.0			1.5		.3				

Depth (cm)	Electrical Conductivity mmho / cm	Water Extract From Saturated Paste								Water at Satur %	ESP %	SAR	CSP %	Gypsum %	Ext P_2O_5 ppm	Available Nutrients		
		Cations																
		Ca	Mg	Na	K	CO 3	HCO 3	Cl	SO 4							Ca	Mg	K
		me / liter														mg / 100 g		
0- 7	.7										0	.1			70.5			>100

Soil Series: Kansebba
Classification: Lithic Xerorthent; fine loamy, mixed, thermic
Location: Lattakia province, Syria. Approximately 47 km Northeast of Lattakia, 500 m South of Kansebba, 50m South of the road from Kansebba to Lattakia; approximate coordinates 35° 45' N latitude and 36° 09' E longitude
Physiographic Position: Narrow summits and upper slopes of high mountains, elevation about 740 m.a.s.l.
Topography: Mountainous topography with a characteristic slope of 80 percent towards West
Drainage: Well moderately excessively drained, very rapid surface run-off, rapid permeability
Vegetation: Native forest

Parent Material: Cretaceous limestone

Sampled by : H. Yuksel, R. Rizek and S. Kabbas on June 11, 1980
Soil No : SP - 15



Hori.	Depth	Description
A_1	0-7 cm	Light gray (2.5 Y 7/2d) to dark grayish brown (10 YR 4/2m) clay loam; moderate, medium subangular blocky structure, hard (dry), firm (moist), sticky and slightly plastic; frequent, fine and medium, continuous, vertical, simple, open pores; few, angular gravels, constituting approximately 10 percent of the horizon; few, very fine and fine roots; clear, broken boundary to the bedrock; pH 6.6
R	7 + cm	Cretaceous limestone

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SOIL SERIE: El Keshfi TAXONOMY: Typic Xerochrepts SOIL No: Y - 120

LOCATION: LAB Nos.: 868 - 869 - 870

Depth (cm)	Horizon	Size Class and particle diameter (mm): Total Sand (2-0.05)	Total Silt (0.05-0.002)	Total Clay (<0.002)	Sand: Very coarse (2-1)	Sand: Coarse (1-0.5)	Sand: Medium (0.5-0.25)	Sand: Fine (0.25-0.1)	Sand: Very fine (0.1-0.05)	Silt: 0.05-0.02	Silt: 0.02-0.002	Coarse fragments: >2 % of whole soil	Coarse fragments: 2-19 %	Coarse fragments: 19-76 %	Texture class
		% of < 2 mm											of <76 mm		
0- 25	A11	40	17	43											C
25- 44	A12	36	11	53											C
44- 76	B2	nd	nd	nd											-

Depth (cm)	Organic Carbon %	Nitrogen %	C / N	Ext Iron as Fe %	Carbonate as Ca Co 3 <2 mm %	Carbonate as Ca Co 3 <0.002 mm %	Bulk Density 1/3 bar g/cc	Bulk Density ovendry g/cc	COLE	Water Contents 1/3 bar %	Water Contents 15 bar %	pH Satur paste	pH H_2O	pH KCl
0- 25	2.1				7.5	5.3				26.7	12.1		7.5	7.1
25- 44	1.7				11.0	4.5				30.6	14.1		7.6	7.1
44- 76	1.4				5.0								7.6	7.1

Depth (cm)	Extractable Bases Ca	Mg	Na	K	Sum	Ext Acidity	C E C Sum of Cations	C E C Na OAc	Ext Al me / 100 g	Ratios to clay C E C	Ratios to clay Ext. Fe	Ratios to clay 15 bar water	Ca/ Mg	Total Solu. Salts ppm	Base saturation Sum of Cations %	Base saturation Na OA E %
	me / 100 g															
0- 25	18.8	8.9	.5	.3	28.5			52.5		1.2		.3				54.3
25- 44	22.6	3.8	.5	.3	27.2			52.5		1.0		.3				51.7
44- 76	29.3	2.4	.7	.3	32.6			47.5								68.7

Depth (cm)	Electrical Conductivity mmho / cm	Water Extract From Saturated Paste: Cations Ca	Mg	Na	K	CO 3	HCO 3	Cl	SO 4	Water at Satur %	ESP %	SAR	CSP %	Gypsum %	Ext P_2O_5 ppm	Available Nutrients Ca mg / 100 g	Mg	K
		me / liter																
0- 25	.2										1	.7	35		7.2	526.7	165.0	28.3
25- 44	.2										0	.6	42		6.0	631.4	71.2	25.5
44- 76	.3										1	.8	61		4.5	819.0	45.1	23.6

Soil Series: El Keshfi
Classification: Typic Xerochrepts, fine loamy over fragmental, mixed, thermic
Location: Tartous Province, Syria. Approximately 15km southeast of Tartous, 12km southwest of Safita, 3.5km west of El Zahr, 20m north of the pipeline
Physiographic Position: Undulating plains of drainageways and toeslopes of low hills, elevation about 110 m.a.s.l.
Topography: Gently sloping topography with a characteristic slope of 3 percent towards north
Drainage: Well to moderately excessively drained, slow surface runoff, moderate to moderately rapid permeability
Parent Material: Quaternary and recent colluvium and alluvium, derived mainly from Neogene Limestone and marl
Sampled by: H. Yuksel, I. Daya, A. Jabri and S. Darwish on April 27, 1982
Soil No.: Y-120

Horizon	Depth	Description
A11	0-25 cm	Dark brown to brown(4/2m) clay loam; strong medium, subangular blocky structure; hard (dry), firm (moist), stocky and plastic; frequent, fine, continuous, vertical, inped, irregular, simple, open pores; few, rounded to subrounded gravel, constituting approximately 10 percent of the horizon; many fine to medium roots; clear, smooth boundary; pH 7.5
A12	25-44 cm	Dark brown to brown (7.5YR 4/2m) clay loam; moderate, medium, subangular blocky structure; hard (dry), firm (moist), sticky and plastic; continuous, thin cutanes, probably of clay minerals, mainly on horizontal and vertical ped faces; few, fine, continuous, vertical, inped, irregular, simple, open pores, frequent, rounded to subrounded gravels constituting approximately 20 percent of the horizon; common, fine roots; clear smooth boundary; pH 7.6
B2	44-76 cm	Dark brown to brown (7.5YR 4/3m) silty clay; moderate, medium subangular blocky structure; firm (moist) sticky and plastic; continuous, thin cutanes, probably of clay minerals, mainly on horizontal and vertical ped faces; few, fine, continuous, vertical, inped, irregular, simple, open pores; frequent rounded to subrounded gravels, constituting approximately 30 percent of the horizon; few, fine roots, abrupt, smooth boundary; pH 7.6
Bc	76-90 cm	Abundant rounded to subrounded gravel constituting approximately 70 percent of the horizon; few, fine roots; abrupt, smooth boundary
C	90-125cm	Rounded and subrounded gravel and stones

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DEPARTMENT OF SOIL SURVEY

SOIL SERIE: Kferiyeh TAXONOMY: Typic Xerochrepts SOIL No: Y - 205

LOCATION: LAB Nos.: 1311 - 1312 - 1313 - 1314 - 1315

Depth (cm)	Horizon	Size Class and particle diameter (mm): Total Sand (2-0.05)	Total Silt (0.05-0.002)	Total Clay (<0.002)	Sand: Very coarse (2-1)	Sand: Coarse (1-0.5)	Sand: Medium (0.5-0.25)	Sand: Fine (0.25-0.1)	Sand: Very fine (0.1-0.05)	Silt: 0.05-0.02	Silt: 0.02-0.002	Coarse fragments >2 % of whole soil	Coarse fragments 2-19 % of <76 mm	Coarse fragments 19-76 % of <76 mm	Texture class
		% of < 2 mm													
0- 11	A11	22	42	36											CL
11- 30	A12	22	40	38											CL
30- 58	B21	nd	nd	nd											-
59- 76	B22	26	38	36											CL
76-115	C	32	34	34											CL

Depth (cm)	Organic Carbon %	Nitrogen %	C / N	Ext Iron as Fe %	Carbonate as Ca Co 3 <2 mm %	Carbonate as Ca Co 3 <0.002 mm %	Bulk Density 1/3 bar g/cc	Bulk Density oven dry g/cc	COLE	Water Contents 1/3 bar %	Water Contents 15 bar %	pH Satur paste	pH H 2 O	pH K Cl
0- 11	2.5				82.0	29.7				27.0	12.2		7.8	7.7
11- 30	2.1				81.0	25.7				27.7	12.6		7.9	7.6
30- 58	2.1				81.0	25.7							7.9	7.6
58- 76	2.0				79.0	24.0				26.4	11.9		7.8	7.1
76-115	2.0				75.0	23.0				24.9	11.1		7.8	7.1

Depth (cm)	Extractable Bases Ca (me / 100 g)	Mg	Na	K	Sum	Ext Acidity	CEC Sum of Cations	CEC Na OAc	Ext Al me / 100 g	Ratios to clay C. E. C	Ratios to clay Ext Fe	Ratios to clay 15 bar water	Ca / Mg	Total Solu. Salts ppm	Base saturation Sum of Cations %	Base saturation Na OA E %
0- 11	14.4	3.3	.2	1.0	18.9			35.0		1.0		.3				54.1
11- 30	15.8	1.1	.1	.5	17.5			35.0		.9		.3				50.1
30- 58	15.6	1.7	.5	.5	18.2			35.0								51.9
58- 76	16.8	1.9	.4	.1	19.2			35.0		1.0		.3				54.8
76-115	16.3	1.6	.5	.1	18.5			40.0		1.2		.3				46.3

Depth (cm)	Electrical Conductivity mmho / cm	Water Extract From Saturated Paste: Cations Ca (mg / liter)	Mg	Na	K	CO 3	HCO 3	Cl	SO 4	Water at Satur %	ESP %	SAR	CSP %	Gypsum %	Ext P_2O_5 ppm	Available Nutrients Ca (mg / 100 g)	Mg	K
0- 11	.7										0	.2	41		7.0	404.3	61.5	94.4
11- 30	.3										0	.2	45		3.5	443.0	20.4	47.2
30- 58	.3										1	.5	44		5.5	435.4	30.8	47.2
58- 76	.5										1	.6	47		5.5	469.0	35.7	9.4
76-115	.5										1	.6	40		5.0	456.1	30.5	12.7

Soil Series: Kferiyeh
Classification: Typic Xerochrepts, fine loamy, mixed, thermic
Location: Tartous Province, Syria. Approximately 24 km southeast of Tartous, 12 km southwest of Safita, 2 km west of Yazidiyeh, 30m north of the pipeline
Physiographic Position: Steep backslopes and footslopes of high hills, elevation about 130 m.a.s.l.
Topography: Moderately steep topography with a characteristic slope of 30 percent towards east
Drainage: Well drained, very rapid surface runoff, moderately slow permeability
Parent Material: Quaternary and recent colluvium derived mainly from Neogene marl
Sampled by: H. Yuksel, I. Daya, A. Jabri, and S. Darwish on June 9, 1982
Soil No.: Y-205

Horizon	Depth	Description
A11	0-11 cm	Dark (10YR 4/1) to very dark grayish brown (10YR 3/2m) loam; moderate, medium, subangular blocky structure, breaking to moderate, medium granular structure, slightly hard (dry), friable (moist, slightly sticky, slightly plastic; many, fine, continuous, vertical, inped, simple, open pores; few subrounded gravels constituting approximately 10 percent of the horizon; some insect nests and worm casts; many, fine to medium, roots inside peds; pH 7.8
A12	11-30 cm	Dark gray (10YR 4/1d) to very dark grayish brown (10YR 3/2m) clay loam; moderate, medium, subangular blocky structure; slightly hard (dry), friable (moist), slightly sticky, slightly plastic; many, fine, continuous, vertical, inped, simple, open pores; few subrounded gravels constituting approximately 15 percent of the horizon; many, fine to medium inside peds; pH 7.9
B21	30-58 cm	Very dark gray (10YR 3/1d) to dark brown (10YR 3/3m) clay loam; strong, medium subangular blocky structure; hard (dry), firm (moist), slightly sticky, slightly plastic; patchy thin cutanes, probably of clay minerals, mainly on horizontal and vertical ped faces; frequent, fine, continuous, vertical, inped, simple, open pores; few subrounded gravels constituting approximately 15 percent of the horizon; common fine roots inside peds; pH 7.9
B22	58-76 cm	Very dark gray (10YR 3/1d) to dark brown (10YR 3/3m) clay loam; moderate, medium, subangular blocky structure; hard (dry), firm (moist), slightly sticky, slightly plastic; patchy thin cutanes, probably of clay minerals, mainly on horizontal and vertical ped faces; frequent, fine, continuous, vertical, inped, simple, open pores; frequent subrounded gravels constituting approximately 20 percent of the horizon; few, fine roots inside peds; pH 7.8
C	76-114 cm	Dark gray (10YR 4/1d) to very dark gray (10YR 3/1m) clay loam; weak, medium, subangular blocky structure; slightly hard (dry), friable (moist), slightly sticky, slightly plastic; few, fine, continuous, vertical, inped, simple, open pores; frequent medium subangular blocky stucture; frequent subrounded gravels constituting approximately 25 percent of the horizon few, fine roots inside peds; pH 7.8

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SOIL SERIE: Kferro TAXONOMY: Lithic Xerochrepts SOIL No: SP - 5

LOCATION: LAB Nos.:

Depth (cm)	Horizon	Size Class and particle diameter (mm) Total Sand (2-0.05)	Total Silt (0.05-0.002)	Total Clay (<0.002)	Sand: Very coarse (2-1)	Sand: Coarse (1-0.5)	Sand: Medium (0.5-0.25)	Sand: Fine (0.25-0.1)	Sand: Very fine (0.1-0.05)	Silt 0.05-0.02	Silt 0.02-0.002	Coarse fragments >2 % of whole soil	Coarse fragments 2-19 mm	Coarse fragments 19-76 mm	Texture class
		% of < 2 mm											% of <76 mm		
0- 7	A1	48	31	21											L
7- 24	B2	42	26	32											CL
24- 38	C	5[illegible]	1[illegible]	27											SCL

Depth (cm)	Organic Carbon %	Nitrogen %	C / N	Ext Iron as Fe %	Carbonate as $CaCO_3$ <2 mm %	Carbonate as $CaCO_3$ <0.002 mm %	Bulk Density 1/3 bar g/cc	Bulk Density ovendry g/cc	COLE	Water Contents 1/3 bar %	Water Contents 15 bar %	pH Satur paste	pH H_2O	pH KCl
0- 7	.3				.5	15.2				18.2	7.6		6.3	
7- 24	3.5				tr	18.0				22.8	10.0		6.4	
24- 38	.5				.5	tr				19.4	8.2		6.4	

Depth (cm)	Extractable Bases Ca	Mg	Na	K	Sum (me / 100 g)	Ext Acidity	C.E.C. Sum of Cations	Na OAc	Ext Al me / 100 g	Ratios to clay C.E.C	Ext. Fe	15 bar water	Ca/Mg	Total Solu. Salts ppm	Base saturation Sum of Cations %	Na OAc
0- 7			.8	56.2				57.5		2.7		.4				
7- 24			1.0	37.5				60.0		1.9		.3				
24- 38			11.2	38.2				85.0		3.1		.3				

Depth (cm)	Electrical Conductivity mmho / cm	Water Extract From Saturated Paste: Cations Ca	Mg	Na	K	CO_3	HCO_3	Cl	SO_4 (me / liter)	Water at Satur %	ESP %	SAR	CSP %	Gypsum %	Ext P_2O_5 ppm	Available Nutrients Ca	Mg	K
0- 7	.4										1	.1		18.7	16.5			>100
7- 24	.3										1	.2		20.5	22.0			>100
24- 38	.4										13	2.0		tr	12.2			>100

Soil Series: Kferro

Classification: Lithic Xerochrept; fine loamy, thermic

Location: Tartous province, Syria. Approximately 35 km Southeast of Tartous, 3 km South of Safsafi. 250 m South of the road from Tartous to Homs. Approximate coordinates 340 43' N latitude and 36° 04' E longitude

Physiographic Position: Middle slope of gently rolling hills; elevation about 60 m.a.s.l.

Topography: Moderately sloping topography with a characteristic slope of 8 percent towards North

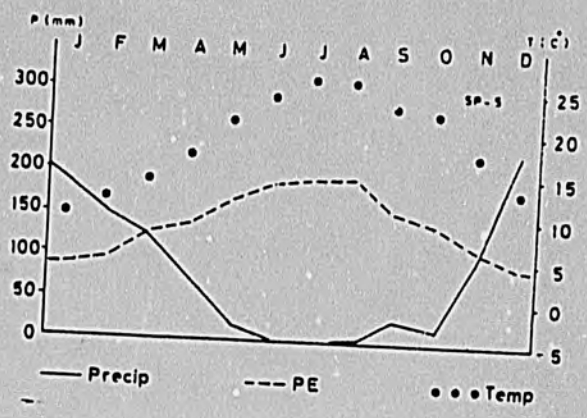
Drainage: Well drained, medium surface run-off, moderate permeability

Vegetation: Wheat

Parent Material: Pliocene Basalt

Sampled by : H. Yuksel, R. Rizek and S. Darwich on June 19, 1980

Soil No: SP - 5



Horiz.	Depth	Description
A_1	0-7cm	Very dark grayish brown (10 YR 3/2m) to dark brown (10 YR 3/3d) gravelly loam; moderate, medium, subangular blocky structure breaking to moderate, fine, granular structure; very hard (dry), firm (moist), slightly sticky and slightly plastic; many, fine and medium, discontinuous, vertical, open pores; abundant rounded and subrounded gravel, constituting approximately 40 percent of the horizon; clear, smooth boundary; pH 6.3
B_2	7-24cm	Very dark grayish brown (10 YR 3/2m) to dark brown (10 YR 3/3d) clay loam; moderate, medium, subangular blocky structure; very hard (dry), firm (moist), slightly sticky and slightly plastic; few, fine, discontinuous, vertical, open pores; few, subrounded gravel, constituting approximately 10 percent of the horizon; clear, smooth boundary; pH 6.4
C	24-38cm	Very dark grayish brown (10 YR 3/2m) sandy clay loam; weak, medium, subangular blocky structure; very firm (moist), very sticky and very plastic; few, fine, discontinuous, open pores; few, rounded and subrounded gravel, constituting approximately 10 percent of the horizon; clear, broken boundary to the bedrock; pH 6.4
R	38 +cm	Pliocene Basalt; partially weathered

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SOIL SERIE: Kilmsho TAXONOMY: Typic Xerochrepts SOIL No: SP - 20

LOCATION: LAB Nos: 1054 - 1077 - 1078 - 1066 - 1065 - 1080

Depth (cm)	Horizon	Size Class and particle diameter (mm): Total Sand (2-0.05)	Total Silt (0.05-0.002)	Total Clay (<0.002)	Sand: Very coarse (2-1)	Sand: Coarse (1-0.5)	Sand: Medium (0.5-0.25)	Sand: Fine (0.25-0.1)	Sand: Very fine (0.1-0.05)	Silt: 0.05-0.02	Silt: 0.02-0.002	Coarse fragments: >2 % of whole soil	Coarse fragments: 2-19 % of <76 mm	Coarse fragments: 19-76 % of <76 mm	Texture class
		% of < 2 mm													
0- 8	AP	22	39	39											CL
8- 14	A1	23	34	43											C
14- 30	B21	23	36	41											C
30- 48	B22	25	34	41											C
48- 55	C1	33	27	40											CL
55-110	C2	35	24	41											C

Depth (cm)	Organic Carbon %	Nitrogen %	C / N	Ext. Iron as Fe %	Carbonate as Ca Co 3 <2 mm %	Carbonate as Ca Co 3 <0.002 mm %	Bulk Density 1/3 bar g/cc	Bulk Density oven dry g/cc	COLE	Water Contents 1/3 bar %	Water Contents 15 bar %	pH Satur paste	pH H_2O	pH KCl
0- 8	.7				22.5					28.0	12.7		7.0	
8- 14	1.0				56.0					29.2	13.4		7.1	
14- 30	.9				54.0					28.5	13.0		7.1	
30- 48	.9				22.5					28.2	12.9		6.9	
48- 55	.4				61.5					26.7	12.1		7.1	
55-110	.2				74.5					26.8	12.1		7.2	

Depth (cm)	Extractable Bases Ca	Mg	Na	K	Sum (me / 100 g)	Ext Acidity	C. E. C. Sum of Cations	C. E. C. Na OAc	Ext. Al me / 100 g	Ratios to clay C. E. C	Ext. Fe	15 bar water	Ca / Mg	Total Solu. Salts ppm	Base saturation Sum of Cations	Base saturation Na OA E
0- 8			.4	74.2				57.5		1.5		.3				
8- 14			.8	14.3				48.7		1.1		.3				
14- 30			.8	24.0				57.5		1.4		.3				
30- 48			.6	06.6				68.7		1.7		.3				
48- 55			.8	95.0				45.0		1.1		.3				
55-110			.7	80.7				32.5		.8		.3				

Depth (cm)	Electrical Conductivity mmho / cm	Water Extract From Saturated Paste: Cations Ca (me / liter)	Mg	Na	K	CO_3	HCO_3	Cl	SO_4	Water at Satur %	ESP %	SAR	CSP %	Gypsum %	Ext P_2O_5 ppm	Available Nutrients Ca (mg / 100 g)	Mg	K
0- 8	.4										0	.0			48.0			>100
8- 14	.4										1	.3			10.0			>100
14- 30	.4										1	.1			1.1			>100
30- 48	.6										0	.1			32.2			>100
48- 55	.3										1	.1			32.0			>100
55-110	.3										2	.1			10.0			>100

Soil Series: Kilmaho

Classification: Typic Xerochrept; fine, mixed, thermic

Location: Lattakia province, Syria. Approximately 20 km Southeast of Lattakia, 14 km Northeast of Jable, 30m South of the road from Lattakia to Kelmakho; approximate coordinates 35° 27' N latitude and 35° 58' E longitude

Physiographic Position: Convex middle slopes of low hills, elevation about 140 m.a.s.l.

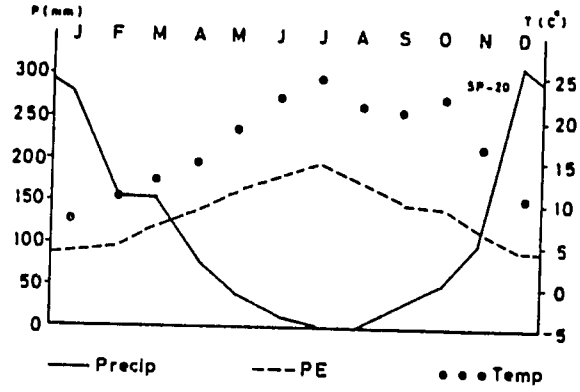
Topography: Gently rolling to rolling topography with a characteristic slope of 8 percent towards East

Drainage: Well drained, medium surface run-off, moderate permeability

Parent Material: Pliocene Limestone and Marls

Sampled by: H. Yuksel, R. Rizek and S. Kabbas on June 25, 1980

Soil No: SP - 20



Hori.	Depth	Description
A_p	0–8 cm	Grayish brown (10 YR 5/2d) to yellowish brown (10 YR 5/6m) clay loam; weak, medium, subangular blocky structure; extremely hard (dry), very firm (moist), sticky and plastic; many, very fine to fine, continuous, vertical, irregular, simple, open pores; few, subrounded gravel, constituting approximately 10 percent of the horizon; few insect nests and worm casts; few, very fine to fine roots mostly inside peds; clear, smooth boundary; pH 7.0
A_1	8–14 cm	Brown (10 YR 4/3d) to dark grayish brown (10 YR 4/2m) clay; weak, medium to coarse subangular blocky structure; hard (dry), firm (moist), sticky and plastic; many, very fine and fine, continuous, irregular, simple, open pores; few, subrounded gravel, constituting approximately 10 percent of the horizon; common, very fine to fine roots mostly inside peds; clear smooth boundary; pH 7.1
B_{21}	14–30 cm	Dark yellowish brown (10 YR 4/4m) clay; moderate, medium, subangular blocky structure; firm, sticky and plastic; many, fine to medium, continuous, irregular, simple, open pores; frequent, subrounded gravel, constituting approximately 15 percent of the horizon; common, very fine to fine roots mostly inside peds; clear, smooth boundary; pH 7.1
B_{22}	30–48 cm	Dark brown (10 YR 4/3m) gravelly clay; moderate, medium, subangular blocky structure; firm, sticky and plastic; continuous, thin cutanes, probably of clay minerals, mostly on horizontal and vertical ped faces; few, very fine to fine, discontinuous, irregular, simple, closed pores; frequent, subrounded gravel constituting approximately 15 percent of the horizon; few, very fine roots mostly inside peds; abrupt, smooth boundary; pH 6.9
C_1	48–55 cm	Yellowish brown (10 YR 5/4m) gravelly clay loam; massive; firm, sticky and plastic; few, very fine, discontinuous, irregular, simple, closed pores; frequent, subrounded and angular gravel, constituting approximately 20 percent of the horizon; very fine roots mostly inside peds; gradual, smooth boundary; pH 7.1
C_2	55–102 cm	Yellowish brown (10 YR 5/4m) gravelly clay; massive; firm, sticky and plastic; frequent, subrounded and angular gravel, constituting approximately 25 percent of the horizon; few, very fine roots; pH 7.2

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SOIL SERIE: Kissara TAXONOMY: Aeric Haplaquepts SOIL No: D-9

LOCATION: LAB Nos.: 926 - 927 - 928

Depth (cm)	Horizon	Size Class and particle diameter (mm)																	Texture class
		Total			Sand					Silt					Coarse fragments				
		Sand (2-0.05)	Silt (0.05-0.002)	Clay (<0.002)	Very coarse (2-1)	Coarse (1-0.5)	Medium (0.5-0.25)	Fine (0.25-0.1)	Very fine (0.1-0.05)	0.05-0.02	0.02-0.002				>2 % of whole soil	2-19 %	19-76 %		
		%, of < 2 mm														% of <76 mm			
0- 9	A1	20	36	44					--										C
9- 28	B21g	nd	nd	nd															-
28- 56	B22g	nd	nd	nd															-
56-100	B23g	nd	nd	nd															-

Depth (cm)	Organic Carbon %	Nitrogen %	C / N	Ext Iron as Fe %	Carbonate as Ca Co 3		Bulk Density			COLE	Water Contents			pH		
					< 2 mm	< 0.002 mm	1/3 bar	ovendry			1/3 bar	15 bar		Satur paste	H_2O	KCl
					%		g / cc				%					
0- 9	.7				90.0	21.1					29.9	13.8			7.8	7.4
9- 28	.3				2.5										7.1	7.0
28- 56	.1				.5										7.0	6.6
56-100																

Depth (cm)	Extractable Bases					Ext Acidity	C E C			Ext Al me / 100 g	Ratios to clay				Total Solu. Salts ppm	Base saturation	
	Ca	Mg	Na	K	Sum		Sum of Cations	Na OAc			C E C	Ext. Fe	15 bar water	Ca/ Mg		Sum of Cations	NaOA El
	me / 100 g															%	
0- 9	8.7	3.1	.1	.1	12.0			27.5			.6		.3				43.6
9- 28	9.4	4.1	.2	.7	14.4			27.5									52.4
28- 56			.2	.4				30.0									
56-100																	

Depth (cm)	Electrical Conductivity mmho / cm	Water Extract From Saturated Paste								Water at Satur %	ESP %	SAR	CSP %	Gypsum %	Ext P_2O_5 ppm	Available Nutrients		
		Cations																
		Ca	Mg	Na	K	CO 3	HCO 3	Cl	SO 4							Ca	Mg	K
		me / liter														mg / 100 g		
0- 9	.3										0	.3	31		6.0	43.6	57.6	9.4
9- 28	.5										0	.3	34		36.0	63.2	76.2	66.1
28- 56	.5										0	.3			23.0			37.8
56-100																		

Soil Series: Kissara
Classification: Aquic Haplaquept, fine, mixed, thermic
Location: Tartous Province, Syria. Approximately 2.5 km east of Tartous, 1.5 km west of the Agricultural Nursery, 50m north of the highway from Tartous to Safita
Physiographic Position: Small isolated depressions on gently to rolling crests of low eroded hills, elevation about 55 m.a.s.l.
Topography: Level to depressional topography with a characteristic slope of less than 1 percent
Drainage: Poorly drained, ponded, very slow permeability
Parent Material: Cretaceous limestone
Sampled by: H. Yuksel, I. Daya, A. Jabri, and S. Darwish on April 8, 1982
Soil No: D-9

Horizon	Depth	Description
A1	0-9 cm	Very dark grayish brown (10YR 3/4m) clay, moderate, medium, subangular blocky structure; very firm (moist), sticky and plastic; frequent, fine, discontinuous, vertical, inped, closed pores; few, very fine roots mostly between peds; clear smooth boundary; pH 7.8
B21g	9-28 cm	Dark yellowish brown (10YR 3/4m) clay; weak, medium subangular blocky structure; common, medium, prominent, dark gray (5YR 5/1m) mottles on ped faces; very firm (moist), sticky and plastic; few, very fine, discontinuous, vertical, inped, closed pores; gradual, wavy boundary; pH 7.1
B22g	28-56 cm	Dark yellowish brown (10YR 3/4m) clay; weak, medium, subangular blocky structure; common, coarse, prominent, dark gray (5Y 5/1m) mottles on ped faces; very firm, very sticky and very plastic; gradual, wavy boundary; pH 6.6
B23g	56+ cm	Dark yellowish brown (10YR 3/4m) clay; weak, fine, subangular blocky structure, many, coarse prominent, dark gray (5R 5/1m) mottles on ped faces; very firm, very sticky and very plastic.

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SOIL SERIE: Reyhaniyeh — TAXONOMY: Typic Xerochrepts — SOIL No: SP - 3

LOCATION: — LAB Nos.: 1082 - 1096 - 1067 - 1097 - 1056 - 1134

Depth (cm)	Horizon	Size Class and particle diameter (mm): Total Sand (2-0.05)	Total Silt (0.05-0.002)	Total Clay (<0.002)	Sand: Very coarse (2-1)	Sand: Coarse (1-0.5)	Sand: Medium (0.5-0.25)	Sand: Fine (0.25-0.1)	Sand: Very fine (0.1-0.05)	Silt: 0.05-0.02	Silt: 0.02-0.002	Coarse fragments >2 % of whole soil	Coarse fragments 2-19 % of <76 mm	Coarse fragments 19-76 % of <76 mm	Texture class
		% of < 2 mm													
0- 12	A11	29	31	40											CL
12- 20	A12	34	32	34											CL
20- 48	B2	nd	nd	nd											-
48- 60	B3	33	31	36											CL
60- 80	C1	36	31	33											CL
80-125	C2	37	30	33											CL

Depth (cm)	Organic Carbon %	Nitrogen %	C / N	Ext. Iron as Fe %	Carbonate as Ca Co 3 < 2 mm %	Carbonate as Ca Co 3 < 0.002 mm %	Bulk Density 1/3 bar g/cc	Bulk Density ovendry g/cc	COLE	Water Contents 1/3 bar %	Water Contents 15 bar %			pH Satur paste	pH H_2O	pH KCl
0- 12	1.8				29.0					27.3	12.4				7.1	
12- 20	.9				55.0					24.6	11.0				7.0	
20- 48	1.4				40.5										7.3	
48- 60	.8				1.0					25.4	11.4				7.0	
60- 80	.5				72.5					24.0	10.6				7.2	
80-125	.3				60.0					23.8	10.6				7.6	

Depth (cm)	Extractable Bases Ca (me / 100 g)	Mg	Na	K	Sum	Ext Acidity	C.E.C Sum of Cations	C.E.C Na OAc		Ext Al me / 100 g	Ratios to clay C.E.C	Ratios to clay Ext. Fe	Ratios to clay 15 bar water	Ca/Mg	Total Solu. Salts ppm		Base saturation Sum of Cations %	Base saturation Na OAc %
0- 12			1.5	68.5				67.5			1.7		.3					
12- 20			1.1	52.5				52.5			1.5		.3					
20- 48			1.3	82.3				57.5										
48- 60			1.2	58.5				47.5			1.3		.3					
60- 80			.2	48.3				52.5			1.6		.3					
80-125			.5	23.5				56.2			1.7		.3					

Depth (cm)	Electrical Conductivity mmho / cm	Water Extract From Saturated Paste: Cations Ca (me / liter)	Mg	Na	K	CO 3	HCO 3	Cl	SO 4	Water at Satur %	ESP %	SAR	CSP %	Gypsum %	Ext P_2O_5 ppm	Available Nutrients Ca (mg / 100 g)	Mg	K
0- 12	.4										2	.2			30.0			>100
12- 20	.5										2	.2			30.0			>100
20- 48	.4										2	.2			24.0			>100
48- 60	.4										2	.2			24.9			>100
60- 80	.2										0	.0			24.0			>100
80-125	.4										0	.1			18.0			>100

Soil Series: Reyhaniyeh

Classification: Typic Xerochrept: fine loamy, mixed, thermic

Location: Tartous province, Syria. Approximately 25 km Southeast of Tartous, 4 km East of Kharabeh, 50 m west of the road from Kharabeh to Tall Kalakh; approximate coordinates 34° 41' N latitude and 35° 59' E longitude

Physiographic Position: On the back slope of low, gently sloping hills; elevation about 37 m.a.s.l.

Topography: Gently sloping with a characteristic slope of a 4 percent towards Northeast

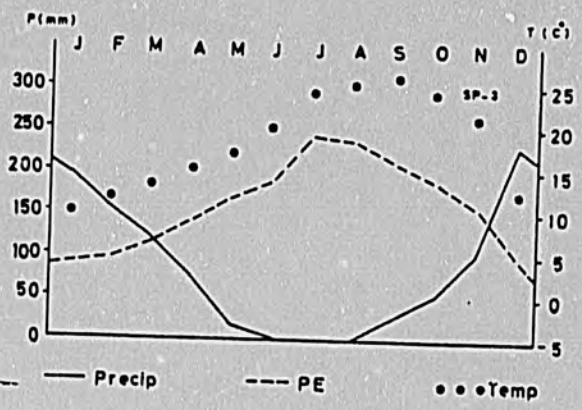
Drainage: Well drained, medium run-off, moderate permeability

Vegetation: Olives

Parent Material: Pliocene Limestone

Sampled by : H. Yüksel, R. Rizek and S. Darwish on June 19, 1980

Soil No: SP - 3



Horiz.	Depth	Description
A_{11}	0-12cm	Very dark grayish brown (10 YR 3/2m) to very dark gray (10 YR 3/2d) clay loam: moderate, medium, subangular blocky structure breaking to strong, medium, granular structure: very hard (dry), firm (moist), sticky and plastic: many, very fine and fine, continuous, vertical, open pores: common, fine and medium roots mostly inside peds: clear, smooth boundary: pH 7.1
A_{12}	12-20cm	Very dark gray (10 YR 3/2m to 10 YR 3/1d) clay loam: weak, medium subangular blocky structure; breaking to moderate, medium, granular structure: very hard (dry), firm (moist), sticky and plastic: many, very fine and fine, continuous, vertical, open pores: common, fine and medium roots mainly inside and between peds: clear, smooth boundary: pH 7.0
B_2	20-48cm	Very dark gray (10 YR 3/1m) clay loam: strong, medium, subangular blocky structure: very firm (moist), very sticky and very plastic: continuous, thin cutanes, probably of clay minerals, mainly on horizontal and vertical ped faces: few, fine, continuous, vertical, open pores: few, fine, roots mainly inside and between peds: clear, smooth boundary: pH 7.1
B_3	48-60cm	Brown (10 YR 5/3m) clay loam: weak, medium, subangular blocky structure: friable (moist), slightly sticky and slightly plastic: few, fine, continuous, vertical, open pores: common, fine and medium roots, mainly between peds: diffuse, smooth boundary: pH 7.0
C_1	60-80cm	Yellowish brown (10 YR 5/4m) clay loam: massive: friable (moist), slightly sticky and slightly plastic: few, coarse, discontinuous, open pores: few, angular limestone fragments and stones, constituting approximately 10 percent of the horizon: diffuse, smooth boundary: pH 7.2
C_2	80-126cm	Light yellowish brown (2.5 Y 6/4m) clay loam: massive: friable (moist), sticky and plastic: few, fine discontinuous, vertical, open pores: many, angular limestone fragments, constituting approximately 25 percent of the horizon: pH 7.6

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SOIL SERIE: Hintar — TAXONOMY: Typic Xeropsamments — SOIL No: 0 - 30

LOCATION: — LAB Nos.: 918 - 919 - 920 - 921

Depth (cm)	Horizon	Size Class and particle diameter (mm)																	Texture class
		Total			Sand					Silt					Coarse fragments				
		Sand (2-0.05)	Silt (0.05-0.002)	Clay (<0.002)	Very coarse (2-1)	Coarse (1-0.5)	Medium (0.5-0.25)	Fine (0.25-0.1)	Very fine (0.1-0.05)	0.05-0.02	0.02-0.002				>2 % of whole soil	2-19%	19-75 %		
		% of < 2 mm														of <76 mm			
0-10	A1	82	6	12															LS
10-60	C1	84	4	12															LS
60-90	C2	90	0	10															S
90-100	C3	89	2	12															LS

Depth (cm)	Organic Carbon %	Nitrogen %	C / N	Ext Iron as Fe %	Carbonate as $CaCO_3$ < 2 mm %	Carbonate as $CaCO_3$ < 0.002 mm %	Bulk Density 1/3 bar g/cc	Bulk Density ovendry g/cc		COLE	Water Contents 1/3 bar %	Water Contents 15 bar %				pH Satur. paste	pH H_2O	pH KCl
0-10	.5				47.5	2.4					10.3	3.5					8.2	7.8
10-60	.4				52.0	2.8					10.0	3.4					8.5	7.8
60-90	.2				49.5	1.2					8.5	2.6					7.8	7.7
90-100	.1				57.0	2.8					9.8	3.2					7.9	7.8

Depth (cm)	Extractable bases Ca	Mg	Na	K	Sum	Ext Acidity	C.E.C. Sum of Cations	C.E.C. Na OAc		Ext. Al me/100 g	Ratios to clay C.E.C	Ext. Fe	15 bar water	Ca/Mg	Total Solu. Salts ppm		Base saturation Sum of Cations %	Base saturation Na OAc
	me / 100 g																	
0-10	4.6	1.3	.1	.1	6.1			15.0			1.3		.3					40.7
10-60	4.8	.6	.1	.1	5.6			19.0			1.6		.3					29.5
60-90	3.4	.6	.1	.1	4.2			24.0			2.4		.3					17.5
90-100	2.9	1.0	.1	.1	4.1			15.0			1.3		.3					27.3

Depth (cm)	Electrical Conductivity mmho / cm	Water Extract From Saturated Paste: Cations Ca	Mg	Na	K	CO_3	HCO_3	Cl	SO_4	Water at Satur %	ESP %	SAR	CSP %	Gypsum %	Ext P_2O_5 ppm	Available Nutrients Ca	Mg	K
		me / liter														mg / 100 g		
0-10	.5										0	.3	30		13.0	128.8	24.2	9.4
10-60	.4										0	.3	25		16.3	134.4	11.1	9.4
60-90	.4										0	.3	14		16.0	95.2	11.1	9.4
90-100	.4										0	.3	19		13.0	81.2	18.6	9.4

Soil Series: Mintar
Classification: Typic Xeropsamments, sandy, mixed, thermic
Location: Tartous Province, Syria. Approximately 15 km south of Tartous, 2 km north of Al Mintar, 20m east of the Tartous-Homs Highway
Physiographic Position: Marine aggradation plains and beaches, elevation about 10 m.a.s.l.
Topography: Level topography with a characteristic slope of 2 percent towards west
Drainage: Excessively drained, very slow surface runoff, very rapid permeability
Parent Material:: Quaternary and recent marine sands
Sampled by: H. Yuksel, I. Dava, A. Jabri and S. Darwish on April 10, 1982
Soil No.: D-27

Horizon-	Depth	Description
A1	0-10 cm	Yellowish brown (10YR 5/6m) sand; single grain, loose (moist), non-sticky, non-plastic; few very fine roots; clear, smooth topography;
C	10+ cm	Yellowish brown (10YR 5/8m) sand; single grain; loose (moist), non-sticky, non-plastic; few very fine roots.

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SOIL SERIE Maisarat TAXONOMY Vertic Xerochrepts SOIL No Y - 206

LOCATION LAB Nos 1316 - 1317

Depth (cm)	Horizon	Size Class and particle diameter (mm)																			
		Total			Sand					Silt						Coarse fragments			
		Sand (2-0.05)	Silt (0.05-0.002)	Clay (<0.002)	Very coarse (2-1)	Coarse (1-0.5)	Medium (0.5-0.25)	Fine (0.25-0.1)	Very fine (0.1-0.05)	0.05-0.02	0.02-0.002					>2 % of whole soil	2-19 %	19-76 %	Texture class
		% of < 2 mm															of <76 mm		
0-21	A1	26	20	54															C
21-46	B2	26	18	56															C

Depth (cm)	Organic Carbon %	Nitrogen %	C / N	Ext Iron as Fe %	Carbonate as $CaCO_3$		Bulk Density			COLE	Water Contents				pH		
					< 2 mm	< 0.002 mm	1/3 bar	ovendry			1/3 bar	15 bar			Satur paste	H_2O	KCl
					%		g / cc				%						
0-21	1.6				1.5						32.4	15.1				6.5	5.7
21-46	1.1				2.0						33.1	15.4				6.6	5.7

Depth (cm)	Extractable Bases					Ext Acidity	C E C			Ext. Al	Ratios to clay			Ca/Mg	Total Solu. Salts		Base saturation	
	Ca	Mg	Na	K	Sum		Sum of Cations	NaOAc			C E C	Ext Fe	15 bar water				Sum of Cations	NaOAc
	me / 100 g									me / 100 g					ppm		%	
0-21	14.7	6.0	3.3	.1	24.1			47.5			.9		.3					50.8
21-46	17.2	6.0	1.2	.2	24.6			45.0			.8		.3					54.7

Depth (cm)	Electrical Conductivity mmho / cm	Water Extract From Saturated Paste								Water at Satur %	ESP %	SAR	CSP %	Gypsum %	Ext P_2O_5 ppm	Available Nutrients		
		Cations																
		Ca	Mg	Na	K	CO_3	HCO_3	Cl	SO_4							Ca	Mg	K
		me / liter														mg / 100 g		
0-21	.9										6	1.8	30		11.0	12.2	11.1	12.7
21-46	.6										2	1.1	38		5.7	81.9	11.1	17.5

Soil Series: Maisarat
Classification: Vertic Xerochrepts
Location: Tartous Province, Syria. Approximately 40 km southeast of Safita, 2.5 km southeast of Yazidiyeh, 2 km east of the road from Safita to Yazidiyeh
Physiographic Position: Undulating piedmont plains and toeslopes of low hills, elevation about 120 m.a.s.l.
Topography: Gently sloping topography with a characteristic slope of 5 percent towards south
Drainage: Well drained, slow surface runoff, slow permeability
Parent Material: Cretaceous limestone, and Quaternary and recent colluvium derived mainly from limestone
Sampled by: H. Yuksel, I. Daya, A. Jabri, and S. Darwish on June 9, 1982
Soil No.: Y-206

Horizon	Depth	Description
A1	0-21 cm	Dark gray (2.5YR 4/1d) to dark red (10YR 3/6m) clay; moderate, medium, subangular blocky structure; approximately 1cm wide cracks extending down to 30 cm; extremely hard (dry); very firm (moist), very sticky, very plastic; few, fine, continuous, inped, irregular, simple, open pores; few subrounded gravels and stones, constituting approximately 15 percent of the horizon; few, very fine roots; between peds; clear, smooth boundary; pH 6.5
B2	21-46 cm	Dark gray (2.5YR 4/1d) to dark red (2.5YR 3/6m) clay; moderate, medium, subangular blocky structure; extremely hard (dry), very firm (moist), very sticky, very plastic, frequent subrounded stones and boulders, constituting approximately 30 percent of the horizon; few, very fine roots, between peds; diffuse, smooth boundary, pH. 6.6
C	46+ cm	Stones and boulders, constituting approximately 90 percent of the horizon;

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SOIL SERIE: Safsafi — TAXONOMY: Lithic Xerorthents — SOIL No: SP - 4

LOCATION: — LAB Nos: 1106 - 1109

Depth (cm)	Horizon	Size Class and particle diameter (mm): Total Sand (2-0.05)	Total Silt (0.05-0.002)	Total Clay (<0.002)	Sand: Very coarse (2-1)	Sand: Coarse (1-0.5)	Sand: Medium (0.5-0.25)	Sand: Fine (0.25-0.1)	Sand: Very fine (0.1-0.05)	Silt: 0.05-0.02	Silt: 0.02-0.002	Coarse fragments: >2 % of whole soil	Coarse fragments: 2-19 % of <76 mm	Coarse fragments: 19-76 % of <76 mm	Texture class
		% of < 2 mm													
0- 6	A1	72	17	11											SL
6- 26	C	50	37	13											L

Depth (cm)	Organic Carbon %	Nitrogen %	C / N	Ext Iron as Fe %	Carbonate as $CaCO_3$ <2 mm %	Carbonate as $CaCO_3$ <0.002 mm %	Bulk Density 1/3 bar g/cc	Bulk Density ovendry g/cc	COLE	Water Contents 1/3 bar %	Water Contents 15 bar %	pH Satur paste	pH H_2O	pH KCl
0- 6	.6				.5	16.3				11.5	4.1		6.5	
6- 26	.7				.5	11.2				15.3	6.1		7.1	

Depth (cm)	Extractable Bases Ca (me / 100 g)	Mg	Na	K	Sum	Ext Acidity	CEC Sum of Cations	CEC Na OAc	Ext Al me / 100 g	Ratios to clay C.E.C	Ext Fe	15 bar water	Ca / Mg	Total Solu. Salts ppm	Base saturation Sum of Cations %	Na OAc
0- 6			1.4	22.5				45.0		4.1		.4				
6- 26			2.4	67.5				62.0		4.8		.5				

Depth (cm)	Electrical Conductivity mmho / cm	Water Extract From Saturated Paste: Cations Ca (me / liter)	Mg	Na	K	CO_3	HCO_3	Cl	SO_4	Water at Satur %	ESP %	SAR	CSP %	Gypsum %	Ext P_2O_5 ppm	Available Nutrients Ca (mg / 100 g)	Mg	K
0- 6	.4										3	.1		21.6	9.4			>100
6- 26	1.8										3	.2		25.7	34.1			>100

Soil Series: Safsafi
Classification: Lithic Xerorthent; coarse loamy, mixed, thermic
Location: Tartous province, Syria. Approximately 15 km southeast of Tartous, 1 km South of Safsafi, 15 m East of the road from Safsafi to Tartous; approximate coordinates 34° 41' N latitude and 35° 10' E longitude
Physiographic Position: Moderately steep summit and shoulder of high hills; elevation about 110 m.a.s.l.
Topography: Hilly topography with a characteristic slope of 30 percent towards North
Drainage: Well drained, rapid surface run off, moderately rapid permeability
Vegetation: Olives
Parent Material: Pliocene Basalt
Sampled by: H. Yukse., R. Rizek and Sami Darwish on June 19, 1980
Soil No: SF - 4

Horiz.	Depth	Description
A_1	0-6cm	Very dark grayish brown (10 YR 3/2m) to dark brown (10 YR 4/3) gravelly sandy loam; weak, medium, granular structure; hard (dry), very friable (moist), non sticky and non plastic; few, medium, continuous, vertical, simple pores; abundant, angular gravels, constituting approximately 50 percent of the horizon; few insect nests; many, fine roots; clear, smooth boundary; pH 6.5
C	6-26cm	Very dark brown (10 YR 3/3m) to dark brown (10 YR 4/3d) gravelly loam; weak, medium, subangular blocky structure; hard (dry), friable (moist), slightly sticky and slightly plastic; few, medium and coarse, continuous, simple pores; abundant angular gravel, constituting approximately 40 percent of the horizon; many, very fine and medium roots; abrupt, broken boundary to the bedrock; pH 7.1
R	26+cm	Pliocene Basalt

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SOIL SERIE: Semka TAXONOMY: Typic Xerochrepts SOIL No: Y - 128

LOCATION: LAB Nos.: 871 - 872 - 873 - 874 - 875 - 876

Depth (cm)	Horizon	Size Class and particle diameter (mm) — Total: Sand (2-0.05)	Total: Silt (0.05-0.002)	Total: Clay (<0.002)	Sand: Very coarse (2-1)	Sand: Coarse (1-0.5)	Sand: Medium (0.5-0.25)	Sand: Fine (0.25-0.1)	Sand: Very fine (0.1-0.05)	Silt: 0.05-0.02	Silt: 0.02-0.002	Coarse fragments: >2 % of whole soil	Coarse fragments: 2-19 mm	Coarse fragments: 19-76 mm	Texture class
		% of < 2 mm											% of <76 mm		
0- 11	A11	44	15	41											C
11- 21	A12	41	17	47											C
21- 34	B21	33	12	55											C
34- 54	B22	32	15	53											C
54- 68	BC	28	13	39											C
68-105	C	44	3	53											CL

Depth (cm)	Organic Carbon %	Nitrogen %	C / N	Ext Iron as Fe %	Carbonate as Ca Co 3 <2 mm %	Carbonate as Ca Co 3 <0.002 mm %	Bulk Density 1/3 bar g/cc	Bulk Density ovendry g/cc	COLE	Water Contents 1/3 bar %	Water Contents 15 bar %	pH Satur paste	pH H_2O 1/	pH KCl 1/
0- 11	2.1									25.5	11.4		6.8	6.3
11- 21	1.0									27.9	12.7		6.8	6.3
21- 34	.7									31.7	14.7		7.1	6.8
34- 54	.4									31.2	14.4		6.8	6.1
54- 68	.4									23.7	10.5		6.6	5.9
68-105	.4									29.5	13.5		6.8	6.0

Depth (cm)	Extractable Bases Ca	Mg	Na	K	Sum (me / 100 g)	Ext Acidity	CEC Sum of Cations	CEC Na OAc	Ext. Al me / 100 g	Ratios to clay C.E.C	Ext. Fe	15 bar water	Ca / Mg	Total Solu. Salts ppm	Base saturation Sum of Cations %	Base saturation Na OAc %
0- 11			.3	.3				42.5		1.0		.3				
11- 21			.4	.2				37.5		.8		.3				
21- 34			.5	.2				37.5		.7		.2				
34- 54			.4	.1				37.5		.7		.3				
54- 68			.4	.2				35.0		.9		.3				
68-105			.4	.2				37.5		.7		.2				

Depth (cm)	Electrical Conductivity mmho / cm	Water Extract From Saturated Paste — Cations Ca	Mg	Na	K	CO 3	HCO 3	Cl	SO 4	Water at Satur %	ESP %	SAR	CSP %	Gypsum %	Ext P_2O_5 ppm	Available Nutrients Ca	Mg	K
		me / liter														mg / 100 g		
0- 11	.3										0	.5			8.2			26.4
11- 21	.2										1	.6			2.5			16.0
21- 34	.3										1	.6			2.0			16.0
34- 54	.2										1	.6			12.0			13.2
54- 68	.2										1	.6			6.0			18.9
68-105	.3										1	.6			10.3			14.2

Soil Series: Semka
Classification: Typic Xerochrept, fine, mixed, thermic
Location: Tartous Province, Syria. Approximately 15km southeast of Tartous, 12km southwest of Saf.ta, 2km west of Tarkoub, 50m north of the road from Tarkoub to Semka
Physiographic Position: Wide summits and shoulders of rolling hills, elevation about 120 m.a.s.l.
Topography: Strongly sloping topography with a characteristic slope of 10 percent toward north
Drainage: Well drained, rapid surface runoff, moderately slow permeability
Parent Material: Cretaceous limestone
Sampled by: H. Yuksel, I. Daya, A. Jabri and S. Darwish on April 26, 1982
Soil No.: Y-128

Horizon	Depth	Description
A11	0-11 cm	Dark brown to brown (7.5YR 4/2 m-7.5YR 4/4d) clay loam; strong medium subangular blocky structure, breaking to strong, medium, granular structure; hard (dry), firm (moist), sticky and slightly plastic; many, fine to medium, continuous, random, inped, irregular, open pores; few rounded to subrounded gravels, constituting approximately 15 percent of the horizon; many insect nests and burrows; many, fine to medium roots inside and between peds; clear, smooth boundary; pH 6.8
A12	11-21 cm	Dark brown to brown (7.5YR 4/2m to 7.5YR 4/4d) clay loam; moderate, medium, subangular blocky structure; hard (dry), firm (moist), sticky and slightly plastic; patchy thin cutanes, probably of clay minerals, mainly on horizontal and vertical ped faces; many, fine to medium continuous, random, inped, irregular, open pores; frequent rounded to subrounded gravels constituting approximately 20 percent of the horizon; many insect nests; many, fine to medium roots inside and between peds; abrupt, smooth boundary; pH 6.8
B21	21-34 cm	Dark brown to brown (7.5YR 4/3m) clay; moderate, medium subangular blocky structure; firm (moist), sticky and plastic continuous, thin cutanes, probably of clay minerals, mainly on horizontal and vertical ped faces; frequent, fine, continuous, random, inped, irregular, open pores; few, rounded to subrounded gravels constituting approximately 10 percent of the horizon; common, fine to medium roots, inside and between peds; clear, smooth boundary; pH 7.1
B22	34-54 cm	Dark brown to brown (7.5YR 4/4m) clay; moderate, medium subangular blocky structure; firm (moist), sticky and plastic; continuous thin cutanes, probably of clay minerals, mainly on horizontal and vertical ped faces; few, fine, continuous, random, inped, irregular, open pores; few, rounded to subrounded gravels constituting approximately 10 percent of the horizon; common, fine to medium, roots between peds; gradual, smooth boundary; pH 6.8
Bc	54-68 cm	Strong brown (7.5YR 5/6m) clay; weak, fine, subangular blocky structure; firm (moist), sticky and plastic; broken, thin cutanes, probably of clay minerals, mainly on horizontal and vertical ped faces; few, fine, continuous, random, inped, irregular, open pores; frequent, rounded to subrounded gravels constituting approximately 20 percent of the horizon; few, small, soft, blackspots of manganese; few, fine, roots, between peds; clear, smooth boundary pH 6.6
C	68-105cm	Brown (7.5YR 5/4m) clay; massive, firm (moist), sticky and plastic; patchy thin cutanes, probably of clay minerals; frequent, rounded to subrounded gravels and stones, constituting approximately 20 percent of the horizon; few, small, soft, black spots of manganese; few, fine, roots inside peds; pH 6.8

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SOIL SERIE: Shalouh TAXONOMY: Lithic Vertic Xerochrepts SOIL. No: SP - 38

LOCATION: LAB Nos.: 1234 - 1201 - 1199

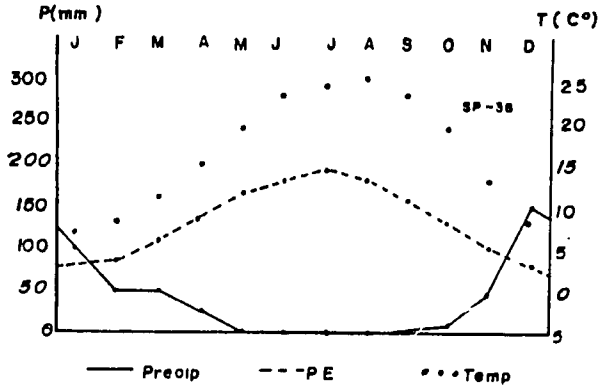
Depth (cm)	Horizon	Size Class and particle diameter (mm)																Texture class
		Total			Sand					Silt					Coarse fragments			
		Sand (2-0.06)	Silt (0.05-0.002)	Clay (<0.002)	Very coarse (2-1)	Coarse (1-0.5)	Medium (0.5-0.25)	Fine (0.25-0.1)	Very fine (0.1-0.05)	0.05-0.02	0.02-0.002				>2 % of whole soil	2-19 %	19-76 %	
		% of < 2 mm														% of <76 mm		
0-12	AP	19	20	61														C
12-25	B21	22	23	55														C
25-45	B22	37	27	36														CL

Depth (cm)	Organic Carbon %	Nitrogen %	C / N	Ext Iron as Fe %	Carbonate as Ca Co 3		Bulk Density			COLE	Water Contents				pH		
					<2 mm	<0.002 mm	1/3 bar	ovendry			1/3 bar	15 bar			Satur paste	H_2O	KCl
					%		g / cc				%						
0-12	.8				2.0	tr					35.7	16.8				6.5	
12-25	.6				.5	21.4					33.3	15.5				7.2	
25-45	.7				1.0	23.5					24.8	11.1				6.6	

Depth (cm)	Extractable Bases					Ext Acidity	C. E. C.			Ext. Al me / 100 g	Ratios to clay			Ca / Mg	Total Solu. Salts ppm		Base saturation	
	Ca	Mg	Na	K	Sum		Sum of Cations	Na OAc			C. E. C	Ext. Fe	15 bar water				Sum of Cations	Na OA E
	me / 100 g																%	
0-12			.8	.1				48.0			.8		.3					
12-25			.4	.1				47.0			.9		.3					
25-45			.3	.1				52.0			1.4		.3					

Depth (cm)	Electrical Conductivity mmho / cm	Water Extract From Saturated Paste								Water at Satur %	ESP %	SAR	CSP %	Gypsum %	Ext P_2O_5 ppm	Available Nutrients		
		Cations																
		Ca	Mg	Na	K	CO_3	HCO_3	Cl	SO_4							Ca	Mg	K
		me / liter														mg / 100 g		
0-12	1.2										1	.9		tr	4.0			9.4
12-25	.4										0	.6		17.8	8.3			9.4
25-45	.5										0	.5		19.2	8.6			9.4

Soil Series: Shalouh
Classification: Lithic Vertic Xerochrept; fine, mixed, thermic
Location: Homs province, Syria. Approximately 7km West of Homs, 2km Northwest of Orantes river, 800m North of the road from Homs to Tartous, approximate coordinates 34° 44' N latitude and 36° 39' E longitude
Physiographic Position: Gently undulating to level plains; elevation about 500m.a.s.l.
Topgraphy: Gently sloping topography with a characteristic slope of 3 percent towards West
Drainage: Well drained, slow surface run-off, slow permeability
Parent Material: Pliocene Basalt
Sampled by : H. Yuksel and R. Rizek on July 17, 1980
Soil No : SP - 38



Hori.	Depth	Description
A_p	0-12 cm	Brown (7.5 YR 4/4d) to dark brown (7.5 YR 3/2m) stony clay; moderate, medium to coarse, subangular blocky structure; very hard (dry), extremely firm (moist), sticky and plastic; few, very fine to fine, continuous, vertical, irregular, open pores; abundant, subrounded and angular stones, constituting approximately 40 percent of the horizon; few insect nests; common, very fine to fine roots, mostly inside peds; clear, smooth boundary; pH 6.5
B_{21}	12-25 cm	Brown (7.5 YR 4/4d) to dark brown (7.5 YR 3/2m) stony clay; moderate, coarse subangular blocky structure; extremely hard (dry), extremely firm (moist), very sticky and very plastic; continuous, moderately thick cutanes, probably of clay minerals,,mainly on horizontal ped faces; abundant, subrounded and angular gravels and stones, constituting approximately 45 percent of the horizon; few insect nests; few, very fine to fine roots, mostly inside peds; diffuse, smooth boundary; pH 7.2
B_{22}	25-45 cm	Brown (7.5 YR 4/4d) to dark brown (7.5 YR 3/2m) stony clay; moderate, coarse subangular blocky structure; extremely hard (dry), firm (moist), sticky and plastic; continuous, moderately thick cutanes, probably of clay minerals on mainly on horizontal ped faces; abundant subrounded and angular stones and boulders, constituting approximately 45 percent of the horizon; few,very fine roots, mostly between peds; clear, broken boundary to the bedrock; pH 6.6
R	45+cm	Pliocene Basalt

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SOIL SERIE: Sinn TAXONOMY: Typic Xerochrepts SOIL No: SP - 21

LOCATION: LAB Nos.: 1051 - 1133 - 1059 - 1047 - 1052

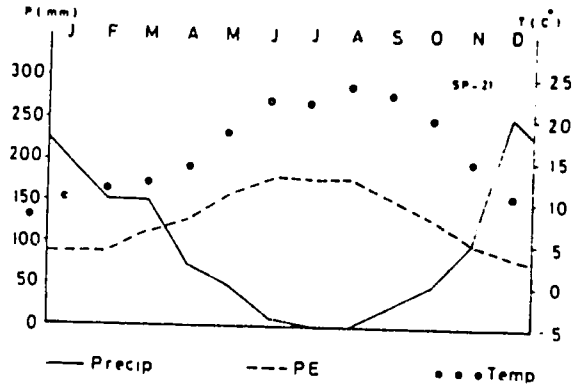
Depth (cm)	Horizon	Size Class and particle diameter (mm) — Total: Sand (2-0.05)	Silt (0.05-0.002)	Clay (<0.002)	Sand: Very coarse (2-1)	Coarse (1-0.5)	Medium (0.5-0.25)	Fine (0.25-0.1)	Very fine (0.1-0.05)	Silt: 0.05-0.02	0.02-0.002	Coarse fragments: >2 % of whole soil	2-19%	19-76 %	Texture class
		% of < 2 mm											of <76 mm		
0- 18	AP	38	25	37											CL
18- 58	B2	31	19	50											C
58- 71	B3	22	23	55											C
71- 84	C1	21	23	56											C
84-120	C2	20	27	53											C

Depth (cm)	Organic Carbon %	Nitrogen %	C / N	Ext Iron as Fe %	Carbonate as Ca Co 3 < 2 mm %	< 0.002 mm %	Bulk Density 1/3 bar g/cc	ovendry g/cc	COLE	Water Contents 1/3 bar %	15 bar %	Satur paste	pH H_2O	KCl
0- 18	1.4				1.5	tr				25.0	11.2		6.6	
18- 58	1.0				.5	6.1				30.4	14.0		7.0	
58- 71	.5				2.0	tr				33.3	15.5		6.9	
71- 84	.9				2.0	tr				33.8	15.8		6.9	
84-120	.7				.5	4.3				32.9	15.3		6.2	

Depth (cm)	Extractable Bases (me / 100 g) Ca	Mg	Na	K	Sum	Ext Acidity	C. E. C Sum of Cations	Na OAc	Ext. Al me / 100 g	Ratios to clay C. E. C	Ext. Fe	15 bar water	Ca/ Mg	Total Solu. Salts ppm	Base saturation Sum of Cations %	Na OA E
0- 18			.7	23.2				72.5		2.0		.3				
18- 58			.6	93.2				7.0		.1		.3				
58- 71			.7	108.2				63.7		1.2		.3				
71- 84			.8	183.7				72.5		1.3		.3				
84-120			1.0	157.5				50.0		.9		.3				

Depth (cm)	Electrical Conductivity mmho / cm	Water Extract From Saturated Paste — Cations (me / liter) Ca	Mg	Na	K	CO 3	HCO 3	Cl	SO 4	Water at Satur %	ESP %	SAR	CSP %	Gypsum %	Ext P_2O_5 ppm	Available Nutrients (mg / 100 g) Ca	Mg	K
0- 18	.4										0	.2		tr	4.0			>100
18- 58	.4										8	.1		27.2	9.5			>100
58- 71	.4										1	.1		tr	20.4			>100
71- 84	.4										1	.1		tr	6.6			>100
84-120	.5										2	.1		28.3	8.0			>100

Soil Series: Sinn
Classification : Typic Xerochrept; fine, mixed, thermic
Location: Lattakia province, Syria. Approximately 37 km South of Lattakia, 10 km North of Banias, 1.5 km North of the Sin Dam, 50m West of the highway from Lattakia to Tartous; approximate coordinates 35° 17' N latitude and 35° 58' E longitude
Physiographic Position: Foot slopes of low mountains, elevation about 25 m.a.s.l.
Topography: Moderately sloping topography with a characteristic slope of 6 percent towards West
Drainage: Well drained, medium surface run-off, slow permeability
Vegetation: Irrigated agriculture
Parent Material: Quarternary or more recent Colluvium derived from Cretaceous limestone
Sampled by: H. Yuksel, R. Rizek and S. Kabbas on June 24, 1980
Soil No: SP - 21



Hori.	Depth	Description
A_p	0-18 cm	Dark reddish brown (5 YR 3/4d [illegible] YR 3/3m) gravelly clay loam; weak, medium, subangular bl[illegible]ructure; hard (dry), friable (moist), slightly sticky, [illegible] plastic; many, very fine, irregular, open pores; fre[illegible] subrounded and angular gravel, constituting approximatel[illegible]cent of the horizon; common, very fine roots; clear, sm[illegible]oundary; pH 6.6
B_2	18-58 cm	Dark reddish gray (5 YR 4/2m) clay; moderate, medium, subangular blocky structure; firm, sticky and plastic; continuous, thin cutanes, probably of clay minerals, mostly on horizontal and vertical ped faces; many, fine and few, medium, constricted, irregular, open pores; frequent, subrounded and angular gravel, constituting approximately 15 percent of the horizon; few, very fine and fine roots; gradual, smooth boundary; pH 7.0
B_3	58-71 cm	Reddish brown (5 YR 4/3m) clay; moderate, medium, subangular blocky structure; firm, sticky and plastic; patchy, thin cutanes, probably of clay minerals, mostly on horizontal and vertical ped faces; few, fine and medium, discontinuous, irregular, closed pores; few subrounded and angular gravel, constituting approximately 10 percent of the horizon; few, very fine and fine roots; gradual, smooth boundary; pH 6.9
C_1	71-84 cm	Dark reddish brown (5 YR 3/4)clay; weak, medium, subangular blocky structure; firm, very sticky and very plastic; few, fine, discontinuous, irregular, closed pores; few, subrounded and angular gravel, constituting approximately 10 percent of the horizon; no visible roots; gradual, smooth boundary; pH 6.9
C_2	84-120 cm	Yellowish red (5 YR 4/6m) clay; weak, medium, subangular blocky strucutre; firm, very sticky and very plastic; few subrounded and angular gravel, constituting approximately 10 percent of the horizon; no visible pores; no visible roots; gradual, smooth boundary; pH 6.2

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SOIL SERIE: Tarkouh TAXONOMY: Typic Xerochrepts SOIL No. Y - 140

LOCATION: LAB Nos. 877 - 878 - 879 - 880

Depth (cm)	Horizon	Size Class and particle diameter (mm)																	Texture class
		Total			Sand					Silt					Coarse fragments				
		Sand (2-0.05)	Silt (0.05-0.002)	Clay (<0.002)	Very coarse (2-1)	Coarse (1-0.5)	Medium (0.5-0.25)	Fine (0.25-0.1)	Very fine (0.1-0.05)	0.05-0.02	0.02-0.002				>2 % of whole soil	2-19 %	19-76 %		
		% of < 2 mm														% of <76 mm			
0-20	A1	50	13	37															SC
20-40	B21	36	17	47															CL
40-65	B22	26	15	59															C
65+	B23	nd	nd	nd															

Depth (cm)	Organic Carbon %	Nitrogen %	C / N	Ext Iron as Fe %	Carbonate as $CaCO_3$ <2 mm %	Carbonate as $CaCO_3$ <0.002 mm %	Bulk Density 1/3 bar g/cc	Bulk Density ovendry g/cc	COLE	Water Contents 1/3 bar %	Water Contents 15 bar %	pH Satur paste	pH H_2O	pH KCl
0-20	.7									23.3	10.3		6.3	5.7
20-40	.7									28.6	13.1		6.6	6.0
40-65	.5									34.1	15.9		6.6	6.0
65+	.4												7.0	6.5

Depth (cm)	Extractable Bases Ca	Mg	Na	K	Sum	Ext Acidity	C.E.C. Sum of Cations	C.E.C. Na OAc	Ext. Al me/100 g	Ratios to clay C.E.C	Ext. Fe	15 bar water	Ca/Mg	Total Solu. Salts ppm	Base saturation Sum of Cations %	Base saturation Na OAc %
	me / 100 g															
0-20			.3	.1				27.5		.7		.3				
20-40			.3	.1				31.0		.7		.3				
40-65			.3	.1				37.5		.6		.3				
65+			.4	.1				35.0								

Depth (cm)	Electrical Conductivity mmho / cm	Water Extract From Saturated Paste: Cations Ca	Mg	Na	K	CO_3	HCO_3	Cl	SO_4	Water at Satur %	ESP %	SAR	CSP %	Gypsum %	Ext P_2O_5 ppm	Available Nutrients Ca	Mg	K
		me / liter														mg / 100 g		
0-20	.2										0	.5			42.0			4.7
20-40	.3										1	.5			1.5			9.4
40-65	.2										0	.5			4.0			11.3
65+	.3										1	.6			3.0			11.3

Soil Series: Tarkoub
Classification: Typic Xerochrept, fine, mixed, thermic
Location: Tartous Province, Syria. Approximately 18km southeast of Tartous, 12km southwest of Safita, 1km east of Tarkoub, 20m north of the road from Tarkoub to Safita
Physiographic Position: Undulating crests of high hills, elevation about 190 m.a.s.l.
Topography: Gently sloping topography with a characteristic slope of 4 percent towards southwest
Drainage: Well drained, slow surface runoff, moderately slow permeability
Parent Material: Neogene basalt
Sampled by: H. Yuksel, I. Daya, A. Jabri and S. Darwish on April 26, 1982
Soil No.: Y-140

Horizon	Depth	Description
A1	0-20 cm	Reddish brown (5YR 4/4m) clay loam; weak, fine, subangular blocky structure, breaking to medium, fine granular structure; firm (moist), few rounded to subrounded gravels; pH 6.3
B21	20-40 cm	Yellowish red (5YR 4/6m) clay; moderate, medium subangular blocky structure; very firm (moist); continuous, thin cutanes, probably of clay minerals mainly on horizontal and vertical ped faces; frequent, fine, continuous, random, inped, irregular, open pores; few, fine roots, inside peds; pH 6.6
B22	40-65 cm	Yellowish red (5YR 4/6m) clay; moderate, medium, subangular blocky structure; very firm (moist); patchy thin cutanes, probably of clay minerals, on horizontal and vertical ped faces; few, fine, continuous, random, inped, irregular, open pores; few, very fine roots, inside peds; pH 6.6
B23	65+ cm	Yellowish red (5YR 4/6m) clay; moderate, medium, subangular blocky structure, very firm (moist); patchy, thin cutanes, probably of clay minerals, mainly on horizontal and vertical ped faces; few, fine, continuous, random, inped, irregular, closed pores; very fine roots, inside peds; pH 7.0

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SOIL SERIE: Tartous — TAXONOMY: Typic Xerochrepts — SOIL No: D-1

LOCATION: — LAB Nos: 902 - 903 - 904 - 905

Depth (cm)	Horizon	Size Class and particle diameter (mm): Total Sand (2-0.05)	Total Silt (0.05-0.002)	Total Clay (<0.002)	Sand: Very coarse (2-1)	Sand: Coarse (1-0.5)	Sand: Medium (0.5-0.25)	Sand: Fine (0.25-0.1)	Sand: Very fine (0.1-0.05)	Silt: 0.05-0.02	Silt: 0.02-0.002	Coarse fragments >2 % of whole soil	Coarse fragments 2-19 %	Coarse fragments 19-76 %	Texture class
		% of < 2 mm											% of <76 mm		
0- 15	Ap	48	10	42											SC
15- 25	B21	30	14	56											C
25- 40	B22	nd	nd	nd											-
40-100	B23	nd	nd	nd											-

Depth (cm)	Organic Carbon %	Nitrogen %	C / N	Ext Iron as Fe %	Carbonate as Ca Co 3 <2 mm %	Carbonate <0.002 mm %	Bulk Density 1/3 bar g/cc	Bulk Density ovendry g/cc	COLE	Water Contents 1/3 bar %	Water Contents 15 bar %	pH Satur paste	pH H_2O	pH KCl
0- 15	1.0				2.5					25.2	11.3		7.4	7.2
15- 25	.5				9.0	2.8				32.5	15.1		7.4	7.1
25- 40	.6				1.5								7.4	7.2
40-100	.4				1.0								7.7	7.1

Depth (cm)	Extractable Bases Ca (me / 100 g)	Mg	Na	K	Sum	Ext Acidity	C. E. C. Sum of Cations	C. E. C. Na OAc	Ext. Al me / 100 g	Ratios to clay C E C	Ext Fe	15 bar water	Ca / Mg	Total Solu. Salts ppm	Base saturation Sum of Cations %	Na OAc
0- 15	11.4	2.1	.2	.8	14.5			31.0		.7		.3				46.9
15- 25	9.9	4.4	.2	.1	14.6			33.0		.6		.3				41.7
25- 40			.3	.4				47.5								
40-100			.3	.4				30.0								

Depth (cm)	Electrical Conductivity mmho / cm	Water Extract From Saturated Paste: Cations Ca (me / liter)	Mg	Na	K	CO 3	HCO 3	Cl	SO 4	Water at Satur %	ESP %	SAR	CSP %	Gypsum %	Ext P_2O_5 ppm	Available Nutrients Ca (mg / 100 g)	Mg	K
0- 15	.5										0	.3	36		13.0	320.0	39.2	75.5
15- 25	.5										0	.4	28		5.6	277.2	81.9	9.4
25- 40	.4										0	.4			7.2			37.8
40-100	.4										1	.4			8.0			37.8

Soil Series: Tartous
Classification: Typic Xerochrepts, fine, mixed, thermic
Location: Tartous Province, Syria. Approximately 1.5 km south of Tartous, 50m west of the highway from Tartous to Homs
Physiographic Position: Level to gently undulating marine aggradation plains, elevation about 10 m.a.s.l.
Topography: Level to gently undulating plains with a characteristic slope of 2 percent towards west
Drainage: Well drained, very slow surface runoff, slow permeability
Parent Material: Continental marine deposits of recent Quaternary era
Sampled by: H. Yuksel, I. Daya, A. Jabri and S. Darwish on April 12, 1982
Soil No.: D-1

Horizon	Depth	Description
Ap	0-15 cm	Reddish brown (5 YR 5/3d) to dark reddish gray sandy clay; moderate, medium, subangular blocky structure breaking to moderate, medium, granular structure; hard (dry), firm (moist), sticky and plastic; many, fine, continuous, random, inped, open pores; many fine and medium roots mostly inside peds; clear, smooth boundary; pH 7.4
B21	15-25 cm	Reddish brown (5 YR 4/4m) clay; moderate, medium, subangular blocky structure; very firm, sticky and plastic; frequent, fine, continuous, random, inped, open pores; common fine roots mostly inside peds; clear, smooth boundary; pH 7.4
B22	25-40 cm	Yellowish red (5YR 4/6m) clay; weak, fine, subangular blocky structure; very firm, sticky and plastic; frequent, fine, continuous, random, inped, open pores; few fine roots mostly between peds; gradual smooth boundary; pH 7.4
B23	40 + cm	Yellowish red (5YR 4/6m) clay; massive; very firm, sticky and plastic; few, very fine, discontinuous, random, inped, closed pores; few, subrounded gravels constituting approximately 15 percent of the horizon; pH 7.7

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SOIL SERIE: Yahmour TAXONOMY: Typic Xerochrepts SOIL No: Y - 204

LOCATION: LAB Nos.: 1308 - 1309 - 1310

Depth (cm)	Horizon	Size Class and particle diameter (mm): Total Sand (2-0.05)	Total Silt (0.05-0.002)	Total Clay (<0.002)	Sand: Very coarse (2-1)	Sand: Coarse (1-0.5)	Sand: Medium (0.5-0.25)	Sand: Fine (0.25-0.1)	Sand: Very fine (0.1-0.05)	Silt: 0.05-0.02	Silt: 0.02-0.002	Coarse fragments: >2 % of whole soil	Coarse fragments: 2-19%	Coarse fragments: 19-76 %	Texture class
		% of < 2 mm											% of <76 mm		
0- 21	AP	nd	nd	nd											-
21- 50	C1	48	12	40											C
50- 80	C2	nd	nd	nd											-

Depth (cm)	Organic Carbon %	Nitrogen %	C / N	Ext Iron as Fe %	Carbonate as $CaCO_3$ <2 mm %	Carbonate as $CaCO_3$ <0.002 mm %	Bulk Density 1/3 bar g/cc	Bulk Density ovendry g/cc	COLE	Water Contents 1/3 bar %	Water Contents 15 bar %	pH Satur paste	pH H_2O	pH KCl
0- 21	3.3				2.5	2.0							7.5	6.9
21- 50	1.4				4.0	2.0				24.6	11.0		7.4	6.9
50- 80	1.6				tr	tr							8.0	7.2

Depth (cm)	Extractable Bases Ca	Mg	Na	K	Sum	Ext Acidity	C.E.C. Sum of Cations	C.E.C. Na OAc	Ext. Al me/100 g	Ratios to clay C.E.C	Ext. Fe	15 bar water	Ca/Mg	Total Solu. Salts ppm	Base saturation Sum of Cations %	Base saturation Na OAc %
	me / 100 g															
0- 21	25.6	1.0	.3	.6	27.4			32.0								85.5
21- 50	26.9	1.3	.3	.4	29.0			34.0		.9		.3				85.2
50- 80	24.5	1.9	.3	1.3	27.9			47.5								58.8

Depth (cm)	Electrical Conductivity mmho / cm	Water Extract From Saturated Paste: Cations Ca	Mg	Na	K	CO_3	HCO_3	Cl	SO_4	Water at Satur %	ESP %	SAR	CSP %	Gypsum %	Ext P_2O_5 ppm	Available Nutrients Ca	Mg	K
		me / liter														mg / 100 g		
0- 21	.5										0	.3	80		12.0	716.8	17.8	51.9
21- 50	.5										0	.4	79		6.5	753.2	24.3	40.6
50- 80	.5										0	.3	51		5.0	685.2	35.5	>100

Soil Series: Yahmour
Classification: Typic Xerochrepts, fragmental, mixed, thermic
Location: Tartous Province, Syria. Approximately 7 km south-east of Tartous, 1 km northwest of Majdaloun Rahr, 50m south of the road from Tartous to Safita
Physiographic Position: Flood plains and terraces of the drainageways, elevation about 50 m.a.s.l.
Topography: Level topography with a characteristic slope of 1 percent
Drainage: Excessively drained, very slow surface runoff, rapid to very rapid permeability
Parent Material: Recent alluvium derived mainly from Neogene limestone and marl
Sampled by: H. Yuksel, I. Daya, A. Jabri, and S. Darwish on June 9, 1982
Soil No.: Y-204

Horizon	Depth	Description
Ap	0-21 cm	Dark gray to brown (7.5YR 4/1d) to very dark grayish brown (7.5Y° 3/2m) loam; moderate, fine subangular blocky structure breaking to moderate, fine granualr structure; slightly hard (dry), friable (moist), slightly sticky, slightly plastic; abundant rounded gravels constituting approximately 80 percent of the horizon; few, fine, roots inside peds; pH 6.9
C2	50-80 cm	Dark gray (10YR 4/1d) to dark yellowish brown (10YR 3/4m) sandy clay loam to silty clay loam; moderate, fine, subangular blocky structure; hard (dry), firm (moist), slightly sticky, slightly plastic; dominant rounded gravels constituting approximately 90 percent of the horizon; few fine roots inside peds; pH 7.2
C3	80 + cm	Rounded and subrounded gravels and few stones.

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SOIL SERIE: Yazidiyeh TAXONOMY: Typi· Xerochrents SOIL No: 7 - 181

LOCATION: LAB Nos.: 887 - 888 - 889 - 890 - 891

Depth (cm)	Horizon	Size Class and particle diameter (mm) — Total: Sand (2-0.05)	Total: Silt (0.05-0.002)	Total: Clay (<0.002)	Sand: Very coarse (2-1)	Sand: Coarse (1-0.5)	Sand: Medium (0.5-0.25)	Sand: Fine (0.25-0.1)	Sand: Very fine (0.1-0.05)	Silt: 0.05-0.02	Silt: 0.02-0.002	Coarse fragments: >2 % of whole soil	Coarse fragments: 2-19 %	Coarse fragments: 19-76 %	Texture class
		% of < 2 mm											% of <76 mm		
0- 9	A11	22	35	45											C
9- 30	A12	33	26	41											C
30- 54	B21	nd	nd	nd											C
54- 75	B22	24	31	45											C
75-110	B23	18	35	47											C

Depth (cm)	Organic Carbon %	Nitrogen %	C / N	Ext Iron as Fe %	Carbonate as Ca Co 3 <2 mm %	Carbonate as Ca Co 3 <0.002 mm %	Bulk Density 1/3 bar (g/cc)	Bulk Density ovendry (g/cc)	COLE	Water Contents 1/3 bar %	Water Contents 15 bar %	pH Satur paste	pH H_2O	pH KCl
0- 9	.4				80.0	22.3				30.3	14.0		7.6	7.4
9- 30	.8				71.0	19.8				27.1	12.3		7.7	7.3
30- 54	1.1				1.0	tr							7.5	7.3
54- 75	.9				80.0	25.9				29.7	13.6		7.7	7.4
75-110	1.0				77.5	31.2				31.2	14.4		7.5	7.0

Depth (cm)	Extractable Bases Ca (me / 100 g)	Mg	Na	K	Sum	Ext Acidity	CEC Sum of Cations	CEC Na OAc	Ext Al me / 100 g	Ratios to clay C.E.C	Ext. Fe	15 bar water	Ca / Mg	Total Solu. Salts ppm	Base saturation Sum of Cations %	Base saturation Na OAc %
0- 9	10.3	2.9	.3	.2	13.7			25.0		.6		.3				54.9
9- 30	10.4	3.3	.3	.2	14.2			27.5		.7		.3				51.7
30- 54			.4	.5				35.0								
54- 75	10.6	2.7	.3	.1	13.6			27.5		.6		.3				49.4
75-110	12.1	2.4	.4	.0	15.0			30.0		.6		.3				49.9

Depth (cm)	Electrical Conductivity mmho / cm	Water Extract From Saturated Paste — Cations Ca (me / liter)	Mg	Na	K	CO_3	HCO_3	Cl	SO_4	Water at Satur %	ESP %	SAR	CSP %	Gypsum %	Ext P_2O_5 ppm	Available Nutrients Ca (mg / 100 g)	Mg	K
0- 9	.5										1	.4	41		4.0	288.7	54.3	20.8
9- 30	.5										1	.4	37		4.0	292.3	61.1	20.8
30- 54	.3										1	.5			8.0			47.2
54- 75	.3										0	.5	38		3.3	296.0	50.2	6.6
75-110	.5										1	.6	40		2.2	238.8	44.4	3.8

Soil Series: Yazidiyeh
Classification: Typic Xerochrepts, fine loamy, mixed, thermic
Location: Tartous Province, Syria. Approximately 25 km southeast of Tartous, 12km south of Safita, near Yazidiyeh, 20m south of the road from Safita to Yazidiyeh
Physiographic Position: Rolling crests and shoulders of high hills, elevation about 130 m.a.s.l.
Topography: Strongly sloping topography with a characterisitc slope of 15 percent towards east
Drainage: Well drained, rapid surface runoff, moderate permeability
Parent Material: Neogene limestone and marl
Sampled by: H. Yuksel, I. Daya, A..Jabri, and S. Darwish on April 26, 1982
Soil No.: Y-181

Horizon	Depth	Desecription
A11	0-9 cm	Light gray (10YR 7/2d) to grayish brown (10YR 5/2m) silty clay loam; strong medium, subangular blocky, breaking to strong, medium granular structure, slightly hard (dry), friable (moist); slightly sticky, slightly plastic; many,medium to coarse, continuous, vertical, inped, irregular, open pores; few, subrounded gravel constituting approximately 5 percent of the horizon; many, fine to medium roots inside peds; clear, smooth boundary; pH 7.6
A12	9-30 cm	Light gray (10YR 7/2d) to grayish brown (10YR 5/2) silty clay loam; strong, medium, subangular blocky structure, breaking to strong, medium granular structure; slightly hard (dry), friable (moist), slightly sticky, slightly plastic; many, medium to coarse, continuous, vertical, inped, irregular, open pores; few subrounded gravels constituting approximately 5 percent of the horizon; many insect nests and worm casts; common, fine, to medium roots, inside peds, clear, smooth boundary; pH 7.7
B21	30-54 cm	Dark yellowish brown (10YR 4/4m) silty clay loam; moderate, fine sunbangular blocky structure; friable (moist), slightly sticky, slightly plastic; patchy thin cutanes, probably of clay minerals, mainly on horizontal and vertical ped faces; many, medium, continuous, vertical, inped, irregular, open pores; few subrounded gravels, constituting approximately 10 percent of the horizon; few insect nests; few, very fine to fine roots inside peds; clear, smooth boundary; pH 7.4
B22	54-75 cm	Dark yellowish brown (10YR 4/4m) clay loam; moderate, fine subangular blocky structure; friable (moist), slightly sticky, slightly plastic; patchy thin cutanes, probably of clay minerals, mainly on horizontal and vertical ped faces; frequent, medium, continuous, vertical, inped, irregular, simple, open pores; few subrounded gravels constituting approximately 10 percent of the horizon; few insect nests; few, very fine roots, inside peds; gradual smooth boundary, pH. 7.7
B23	75-110cm	Dark yellowish brown (10YR 4/4m) clay loam; moderate fine subangular blocky structure; friable (moist), slightly sticky, slightly plastic; patchy thin cutanes, probably of clay minerals, mainly on horizontal and vertical ped faces; few, fine continuous. vertical, inped, irregular, simple, open pores; few subrounded gravels, constituting approximately 10 percent of the horizon; few,very fine rooots; pH 7.5

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SOIL SERIE: Zarqa — TAXONOMY: Typic Xerofluvents — SOIL. No: 3 - 109

LOCATION: — LAB Nos.: 894 - 895 - 896 - 897

Depth (cm)	Horizon	Size Class and particle diameter (mm) — Total: Sand (2-0.05)	Total: Silt (0.05-0.002)	Total: Clay (<0.002)	Sand: Very coarse (2-1)	Sand: Coarse (1-0.5)	Sand: Medium (0.5-0.25)	Sand: Fine (0.25-0.1)	Sand: Very fine (0.1-0.05)	Silt: 0.05-0.02	Silt: 0.02-0.002	Coarse fragments: >2 % of whole soil	Coarse fragments: 2-19 mm	Coarse fragments: 19-76 mm	Texture class
		% of < 2 mm											of <76 mm		
0- 15	A11	38	11	51											C
15- 40	A12	40	15	45					--						C
40- 60	C1	34	16	50											C
60-120	C2	32	22	46											C

Depth (cm)	Organic Carbon %	Nitrogen %	C / N	Ext Iron as Fe %	Carbonate as Ca Co 3 <2 mm %	Carbonate <0.002 mm %	Bulk Density 1/3 bar g/cc	Bulk Density ovendry g/cc	COLE	Water Contents 1/3 bar %	Water Contents 15 bar %	pH Satur paste	pH H_2O	pH KCl
0- 15	1.6				4.0					29.7	13.6		7.5	7.2
15- 40	1.5				1.5					27.4	12.4		7.3	7.1
40- 60	1.2				1.5					29.9	13.8		7.6	7.1
60-120	1.0				2.5					28.9	13.2		7.7	7.0

Depth (cm)	Extractable Bases Ca	Mg	Na	K	Sum	Ext Acidity	C.E.C. Sum of Cations	C.E.C. Na OAc	Ext. Al me / 100 g	Ratios to clay C.E.C	Ratios to clay Ext. Fe	Ratios to clay 15 bar water	Ca / Mg	Total Solu. Salts ppm	Base saturation Sum of Cations	Base saturation Na OAc
	me / 100 g															
0- 15	16.4	2.5	.6	.8	22.3			49.0		1.0		.3				45.4
15- 40			.5	.4				42.5		.9		.3				
40- 60			.3	.8				45.0		.9		.3				
60-120	17.5	3.4	.3	.3	21.5			52.5		1.1		.3				41.0

Depth (cm)	Electrical Conductivity mmho / cm	Water Extract From Saturated Paste — Cations Ca	Mg	Na	K	CO 3	HCO 3	Cl	SO 4	Water at Satur %	ESP %	SAR	CSP %	Gypsum %	Ext P_2O_5 ppm	Available Nutrients Ca	Mg	K
		me / litre														mg / 100 g		
0- 15	.5										1	.6	37		12.0	514.1	46.8	72.7
15- 40	.4										1	.6			6.0			34.0
40- 60	.4										0	.3			5.5			74.6
60-120	.3										0	.4	33		6.5	490.0	63.5	30.2

Soil Series: Zarqa
Classification: Typic Xerofluvent, fine loamy over fragmental, mixed, thermic
Location: Tartous Province, Syria. Approximately 10km southeast of Tartous, 1 km northwest of the town of Majdaloun El Bahr, 50m south of the road from Tartous to Safita
Physiographic Position: Flood plains and terraces of drainageways, elevation about 40 m.a.s.l.
Drainage: Well to moderately excessively drained, slow surface runoff, moderate to moderately rapid permeability
Parent Material: H. Yuksel, I. Daya, A. Jabri, and S. Darwish on April 21, 1982
Soil No.: A-109

Horizon	Depth	Description
A11	0-15 cm	Dark reddish brown (5YR 3/4) clay loam; moderate, medium, subangular blocky structure, breaking to moderate, fine granular structure, hard (dry), firm (moist), sticky and plastic; many, fine and medium, continuous, vertical, inped, open pores; many, insect nests and worm casts: frequent, rounded and subrounded gravel; many very fine to medium roots inside peds; pH 7.5
A12	15-40 cm	Dark reddish brown (5YR 3/4m) clay; moderate, medium, subangular blocky structure; firm (moist), sticky and plastic; frequent, fine, continuous, vertical, inped, open pores; frequent, rounded and subrounded gravels, constitutinn approximately 25 percent of the horizon; frequent fine and medium roots, mostly inside peds; pH 7.3
C1	40-60 cm	Dark reddish brown (5YR 3/4m) gravelly clay, moderate, medium, subangular blocky structure; firm (moist), sticky and plastic; few, fine, cotinuous, vertical, inped, open pores; frequent, rounded gravels constituting approximately 35 percent of the horizon; few, fine and very fine roots; pH.7.6
C2	60-120cm	Dark reddish brown (5YR 3/4m) gravelly clay; structureless; abundant, rounded gravel constituting more than 80 percent of the horizon; few very fine roots; pH. 7.7