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9. ABSTRACT

The Fifth International Winter Wheat Performance Nursery (IWWPN) was grown at 52 locations in 31 countries in 1973. Forty-seven of the sites were in the Northern Hemisphere and five in the Southern. The same set of wheat cultivars were grown as in the fourth IWWPN in 1972. The nursery consisted of 29 winter wheat cultivars and one spring wheat variety, Lerma Rojo 64. Field books were returned from 50 sites. Data are reported on grain yield, test weight, plant maturity, plant height, lodging, shattering, winter survival, 1000-kernal weight, frost damage, plant diseases, grain protein, and lysine content. The nursery grand mean for yield in the Northern Hemisphere in 1973, based on 44 locations, was 37.1 q/ha. For the Southern Hemisphere the nursery grand mean for yield over five locations was 26.2 q/ha. Individual nursery mean yields ranged from 8.8 q/ha at Lincoln, Nebraska, to 84.0 at Martonvasar, Hungary. Sava, a variety from Yugoslavia, was the most productive cultivar on the average over all reporting sites in 1973. Its productiveness represented a 10.6% increase over the standard yield check variety, Bezostaya 1 (USSR). Other cultivars performing better than Bezostaya 1 included Centurk (Nebraska); Rousalka (Bulgaria); Zlatna dolina (Yugoslavia); and Blueboy (North Carolina). The wide range of adaptability for these cultivars is indicated by their performance in the nursery in 1973. Cultivar means for test weight indicated the superiority of Bezostaya 1, Probstdorfer Extrem, Lancota, Centurk, and C.I.15074. Rousalka was the earliest in days to flowering (141.9) and days to ripening (185.8), measured from January 1. There was a close positive association between plant height and percent lodging. Sava, the highest yielding cultivar over 43 locations, was only 83.9 cm tall.

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Results of the Fifth International Winter Wheat Performance Nursery Grown in 1973

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U.S. Department of State

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SUMMARY

The Fifth International Winter Wheat Performance Nursery (IWWPN) was grown at 52 locations in 31 countries in 1973. Forty-seven of the sites were in the Northern Hemisphere and five in the Southern. The same set of wheat cultivars were grown in the Fifth IWWPN as in the fourth in 1972. The nursery consisted of 29 winter wheat cultivars and one spring wheat variety, Lerma Rojo 64. Field books were returned from 50 sites. Data are reported on grain yield, test weight, plant maturity, plant height, lodging, shattering, winter survival, 1000-kernel weight, frost damage, plant diseases, grain protein, and lysine content. Supplemental nursery management information is reported for each nursery site adjacent to the agronomic, grain quality, and disease data tables. Two-year summary tables by trait over locations for 1972–1973 are presented. In addition, regionalization of the data into five geographic areas of the world with appropriate means tables are reported. Means of 14 cultivars that were grown concommitantly in three IWWPN's from 1971 to 1973 also are reported.

The nursery grand mean for yield in the Northern Hemisphere in 1973, based on 44 locations, was 37.1 q/ha. For the Southern Hemisphere the nursery grand mean for yield over five locations was 26.2 q/ha. Individual nursery mean yields ranged from 8.8 q/ha at Lincoln, Nebraska to 84.0 at Martonvasar, Hungary. Sava, a variety from Yugoslavia, was the most productive cultivar on the average over all reporting sites in 1973. Its productiveness represented a 10.6% increase over the standard yield check variety, Bezostaya 1 (USSR). Other cultivars performing better than Bezostaya 1 included Centurk, (Nebraska); Rousalka, (Bulgaria); Zlatna dolina, (Yugoslavia); and Blueboy, (North Carolina) at 3.7, 3.4, 2.9 and 0.2%, respectively. The wide range of adaptability for these cultivars is indicated by their performance in the nursery in 1973.

The combined 1972–1973 data for 29 winter cultivars over 34 sites again showed the yield superiority of the variety Sava. It yielded an average of 46.3 q/ha, which was 6.7% more than Bezostaya 1. Zlatna dolina yielded 43.6 q/ha, which was 0.5% more than Bezostaya 1. On a regional basis, over the same two-year period for five different wheat producing regions of the world, there was some positional shifting in yield performance even among the top performing cultivars. For example, in Northern Europe Maris Nimrod outperformed Sava, whereas in South-Southeastern Europe, Sava was the highest yielding cultivar followed by Zlatna dolina. In the United States the varieties Blueboy (North Carolina) and Probstdorfer Extrem (Austria) were highest yielding. In the Far East two varieties from Yugoslavia, Sava and Zlatna dolina, produced the highest average yields. The varieties Bezostaya 1 and Centurk excelled all others in yield performance in the Near East.

Cultivar means for test weight from 18 sites in 1973 indicated the superiority of Bezostaya 1, Probstdorfer Extrem, Lancota (Nebraska), Centurk and C.I.15074 (Nebraska). Test weight means averaged over 1972–1973 and 13 locations gave similar results. Varieties in descending order of test weight superiority were Probstdorfer Extrem, Bezostaya 1, C.I.15074, Lancota, and Atlas 66.

There was excellent expression of genetic potential for high grain protein content in Atlas 66 and its derived cultivars, Lancota and C.I.15074 in the 1973 IWWPN. Similar results were obtained for these cultivars in the 1972 IWWPN. The relationship between yield level and protein content was inconsistent among nursery sites. However, varieties were identified that, on the average over all locations, had moderately high yield with an elevated level of protein.

Two-year cultivar means for percent winter survival ranged from a high of 95.3% for C.I.15074 to a low of 41.2% for Victor I (Italy). Other cultivars possessing high levels of winter hardiness included Centurk, Probstdorfer Extrem, Vakka (Finland), Lancota, Bezostaya 1, Tam 102 (Texas), Jyva (Finland), Hokuei (Japan), Diplomat (West Germany), and Starke (Sweden).

Maturity differences were large among the 30 varieties analyzed in the 1973 IWWPN, and also among the 29 varieties analyzed over the two-year period, 1972–1973. The variety Rousalka was the earliest in days to flowering and days to ripening with 141.9 and 185.8 days from January 1, respectively. The latest maturing variety in all the tests was Starke from Sweden. It required an average of 161.6 days to flowering and 200.4 to ripening.

One-thousand kernel weight comparisons among varieties in 1973 showed a wide range. Seed weights ranged from 40.6 grams for Rousalka to 26.9 for Tam 102. Some varieties possessed both high seed and high test weights while others ranked high in test weight but low in 1000-kernel weight. Bezostaya 1 was an exception, ranking consistently high in both traits.

Differences in plant height ranged from 118.1 cm for Atlas 66 to 76.5 cm for Carifen 12 (Chile). There was a close positive association between plant height and percent lodging. Sava, the highest yielding cultivar over 43 locations, was only 83.9 cm tall.

Cultivar differences in shattering, lodging, disease responses, and other agronomic traits are discussed.

Results of the Fifth International Winter Wheat Performance Nursery

J. E. Stroike, K. D. Wilhelmi, V. A. Johnson, J. W. Schmidt and P. J. Mattern[1]

This is the fifth report of results from an International Winter Wheat Performance Nursery (IWWPN) organized in 1968 by the Nebraska Agricultural Experiment Station and the Agricultural Research Service, U. S. Department of Agriculture, under a contract with the Agency for International Development, U. S. Department of State. The Nursery was designed to (1) test the adaptation of winter wheat cultivars in a range of latitudes, daylengths, fertility conditions, water management, and disease complexes; (2) identify superior winter cultivars to serve as recipient genotypes for high protein and high lysine genes, and (3) test the degree of expression and stability of the high protein and high lysine traits in an array of environments.

PROCEDURES

Nursery seed for planting was provided to each cooperator in the approximate quantity requested. Seed for planting in the Northern Hemisphere was shipped via air mail in June from Nebraska for the fall planting in October or November. For the Southern Hemisphere, seed was shipped in December for planting in May or June. Each cooperator was encouraged to adjust row length and spacing to achieve a seeding rate most compatible with local practices. Nursery size is restricted to 30 entries grown in 4 replications.

Data field books in duplicate accompanied the seed shipment to each nursery site. Following harvest one completed book was returned to Lincoln, Nebraska for data compilation and analysis. A 10-gram seed sample from each harvested plot also was returned to

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Lincoln for protein and lysine analyses in the University of Nebraska Wheat Quality Laboratory.

CULTIVARS

The 30 cultivars grown in the 1973 IWWPN also were grown in the 1972 nursery. Cultivars are usually grown in the nursery for at least two successive years. Exceptions to this include the Winter Triticale variety (NB69150) and the Yugoslav wheat variety NS732, which were only grown in 1971. NB69150 was entered in the nursery for only one year primarily to acquaint cooperators with this germplasm. NS732 again was included in the Fifth IWWPN in 1973 for its second year of evaluation. Four check cultivars, Bezostaya 1, Blueboy, Atlas 66, and Lerma Rojo, have been in the nursery from its beginning.

Pedigrees and origins of cultivars in the nursery are given in Table 1. All cultivars possess the winter habit of growth except Lerma Rojo 64, a spring type, which was included to provide comparative performance data on spring versus winter cultivars from plantings at locations with mild winters. The cultivar, Lilifen, was submitted from a winter x spring crossing program in Chile and has been determined by Martinic[2] to have no vernalization requirement.

Some cooperators included local winter cultivars in the IWWPN grown at their location. They were included as additional entries at the end of the replications. Their performance has been included herein from all sites reporting such data, but they were not included in any of the statistical analyses.

NURSERY SITES

The Fifth IWWPN was grown at 52 locations in 31 different countries. A total of 47 locations were in the Northern Hemisphere and the other five sites in Argentina, Brazil, and Chile. Individual cooperators receiving the nursery seed for the nursery are listed in Table 2. The location of nursery sites with respect to latitude, longitude and elevation is given in Table 3. A summary over years and locations of cooperator participation in the IWWPN is given in Table 4.

Field data were received at Lincoln, Nebraska from 50 locations. Seed for planting the nursery at Kathmandu, Nepal arrived there too late for normal planting and no data were obtained. The nursery at El-Harrach, Algeria was planted, but the field book was not received at Lincoln.

Ten-gram wheat samples for quality analyses from harvested plots of the IWWPN were received from most locations. Those locations failing to return seed samples include El-Harrach, Algeria; Shalimar,

[2]Personal correspondence with Dr. Z. Martinic.

Table 1. Cultivars grown in the Fifth International Winter Wheat Performance Nursery, 1973.

Name	Origin	Pedigree
Atlas 66	North Carolina, USA	Frondoso/2/Redhart/3/Noll 28
Backa	Yugoslavia	Heine VII/129 genus
Bezostaya 1	USSR	Lutescens 17/Skorospelka 2
Blueboy	North Carolina, USA	Brevor/Norin 10/Anderson/Coker 55-9
Caribo	West Germany	Cappelle Desprez/Carstens VIII
Carifen 12	Chile	Dijon*2/4/Norin 10/Brevor/14/3/27-15/2/ Rex-Rio
Centurk	Nebraska, USA	Kenya 58/2/Newthatch/3/Hope/2*Turkey/4/ Cheyenne/5/Parker
C.I.15074	Nebraska, USA	Warrior/2/Atlas 66/Comanche/3/C.I.13548
Clarion	Netherlands	K 10/2/Carpo/Generoso
Dacia	Romania	Bucuresti 1/Skorospelka 3
Diplomat	West Germany	Merlin/Format
Hokuei	Japan	Turkey Red II/Martins Amber/2/Tohoku 67
Jyva	Finland	Kakko//1/Varma/G5-20/Kehra
Kirac 66	Turkey	Florence/Yayla 305
Lancota (NE701132)	Nebraska, USA	Atlas 66/Comanche//Lancer
Lerma Rojo 64	Mexico	Lerma Rojo/4/Lerma 52/3/Norin 10/Brevor/2/ Yaqui 50
Lilifen	Chile	Nord Desprez/3/Winter Wheat F_1/4/Lee/ Frontana/2/Newthatch (No.2357)
Marimp 3	Italy	Impeto/Mara
Maris Nimrod	England	[[(C.I.12633 x Yeoman) x Capelle^5] x F_1 (Capelle x Hybrid 46)] x Professeur Marchal^2
Moldova	Romania	Bucuresti 1/Skorospelka 3
Probstdorfer Extrem	Austria	Probstdorfer Record/Brucker Harrachweizen
Rousalka	Bulgaria	S. 13/C. 54
Sava	Yugoslavia	Fortunato*2/Redcoat
Starke	Sweden	Banco sib//Eroica/Virtus
Strampelli	Italy	Libero/2/San Pastore/Iacometti 49
Tam 102	Texas, USA	Sinvalocho/Wichita/3/Hope/Cheyenne//2* Wichita/4/Seu Seun/5/Tascosa
Vakka	Finland	G5-20/Vakka
Victor I	Italy	Mara *3/Frontana/Ky58/Nth 11-50-35
Zenith	Switzerland	Heine VII/Canadian 3842-3663
Zlatna dolina (Golden Valley)	Yugoslavia	414-57/Leonardo

Table 2. Nursery sites and cooperators of the Fifth International Winter Wheat Performance Nursery, 1973.

Country	Station	Cooperator Receiving Seed
Afghanistan	Kabul	Dr. H. C. Wiggin
"	Kunduz	" "
Argentina	Balcarce	Ing. Agr. Ernesto F. Godoy
"	Bordenave	" "
Austria	Vienna	Dr. R. Hron
Brazil	Pelotas	Mr. Milton A. B. Rocha
Bulgaria	Tolbukhin	Dr. Boris Simeonov
Chile	Chillan	Dr. Ignacio Ramirez
"	Temuco	" "
Czechoslovakia	Male Ripnany	Ing. Dezider Michalik
"	Sedlec	Ing. Jaroslav Maly
England	Cambridge	Dr. F. G. H. Lupton
Finland	Jokioinen	Prof. Dr. Rolf Manner
France	Orgerus	Mr. Pierre Benoist
Hungary	Martonvasar	Dr. S. Rajki
"	Szeged	Dr. I. Szaniel
India	Shalimar	Dr. M. V. Rao
"	Simla	Dr. M. K. Upadhyay
Iran	Hamadan	Dr. H. Kaveh
"	Karaj	" "
Iraq	Sulaimaniya	Dr. Mohammad Abdul Aziz
Italy	Florence	Prof. Marino Gasparini
"	Milano	Dr. M. Carla Scalfati
"	Rieti	Dr. G. Zitelli
Japan	Morioka	Dr. T. Gotoh
Jordan	Amman	Dr. S. P. Kohli
Korea	Suwon	Dr. Hyun Ok Choi
Lebanon	Tel-Amara	Dr. Gerbrand Kingma
Mexico	Toluca	Dr. N. E. Borlaug
Netherlands	Wageningen	Dr. Ir. A. C. Zeven
Pakistan	Islamabad	Dr. G. W. MacLean
Poland	Warsaw	Prof. Stanislaw Starzycki
Romania	Fundulea	Prof. T. E. Muresan
Sweden	Svalof	Dr. Gosta Olsson
Switzerland	Zurich	Dr. G. Popow
Turkey	Ankara	Dr. A. Demirlicakmak
"	Erzurum	Dr. Edward J. Rice
"	Eskisehir	Dr. Turhan Atay
ited States	Colorado	Dr. J. R. Welsh
"	Nebraska	Dr. V. A. Johnson
"	New York	Dr. N. F. Jensen
"	North Carolina	Dr. C. F. Murphy
"	Oklahoma	Dr. E. L. Smith
"	Oregon	Dr. W. E. Kronstad
"	Washington	Dr. R. E. Allan
USSR	Krasnodar	Dr. P. P. Lukyanenko
West Germany	Monsheim	Dr. A. Lein
"	Weihenstephan	Prof. Dr. G. Fischbeck
Yugoslavia	Novi Sad	Prof. Slavko Borojevic
"	Zagreb	Dr. Josip Potocanec

Table 3. Latitude, longitude and elevation of nursery sites of the Fifth International Winter Wheat Performance Nursery, 1973

Country	Station	Latitude	Longitude	Elevation m
Afghanistan	Kabul	N34° 33'	E69° 12'	1803
"	Kunduz	N36° 40'	E68° 55'	450
Argentina	Balcarce	S37° 45'	W58° 14'	135
"	Bordenave	S37° 50'	W63° 01'	212
Austria	Vienna	N48° 12'	E16° 45'	147
Brazil	Pelotas	S31° 42'	W53° 40'	200
Bulgaria	Tolbukhin	N43° 40'	E28° 10'	236
Chile	Chillan	S36° 34'	W72° 06'	144
"	Temuco	S38° 40'	W72° 25'	332
Czechoslovakia	Male Ripnany	N50° 29'	E17° 59'	172
"	Sedlec	N50° 14'	E14° 30'	300
England	Cambridge	N52° 10'	E00° 08'	20
Finland	Jokioinen	N60° 49'	E23° 29'	92
France	Orgerus	N48° 40'	E02° 20'	90
Hungary	Martonvasar	N47° 21'	E18° 49'	150
"	Szeged	N46° 10'	E20° 00'	80
India	Shalimar	N32° 15'	E72° 37'	536
"	Simla	N32° 00'	E77° 18'	1900
Iran	Hamadan	N35° 12'	E48° 43'	1644
"	Karaj	N35° 48'	E50° 58'	1300
Iraq	Sulaimaniya	N35° 05'	E46° 05'	700
Italy	Florence	N43° 47'	E11° 34'	850
"	Milano	N45° 30'	E09° 30'	68
"	Rieti	N42° 24'	E12° 52'	402
Japan	Morioka	N39° 45'	E141° 08'	167
Jordan	Amman	N31° 52'	E35° 15'	1453
Korea	Suwon	N37° 16'	E126° 59'	37
Lebanon	Tel-Amara	N33° 51'	E35° 59'	905
Mexico	Toluca	N19° 16'	W99° 51'	2640
Netherlands	Wageningen	N51° 28'	E05° 39'	7
Pakistan	Islamabad	N30° 14'	E67° 00'	1675
Poland	Warsaw	N52° 12'	E20° 39'	90
Romania	Fundulea	N44° 03'	E24° 10'	66
Sweden	Svalof	N55° 35'	E13° 06'	50
Switzerland	Zurich	N47° 39'	E08° 32'	445
Turkey	Ankara	N39° 40'	E32° 40'	850
"	Erzurum	N39° 58'	E41° 20'	1950
"	Eskisehir	N36° 45'	E30° 95'	789
United States	Colorado	N40° 35'	W105° 10'	1475
"	Nebraska	N41° 10'	W96° 25'	360
"	New York	N42° 05'	W76° 05'	366
"	North Carolina	N35° 42'	W80° 37'	825
"	Oklahoma	N36° 06'	W97° 04'	270
"	Oregon	N44° 32'	W123° 15'	70
"	Washington	N46° 42'	W117° 08'	777
USSR	Krasnodar	N45° 00'	E38° 55'	38
West Germany	Monsheim	N49° 35'	E08° 20'	160
"	Weihenstephan	N48° 24'	E11° 44'	467
Yugoslavia	Novi Sad	N45° 05'	E19° 08'	84
"	Zagreb	N49° 49'	E15° 59'	177

Table 4. Summary over years and locations of cooperators who have grown and reported data from International Winter Wheat Performance Nurseries.

Country	Station	Nursery number and year				
		1 1969	2 1970	3 1971	4 1972	5 1973
Afghanistan	Kabul	X	X	X	X	X
"	Kunduz				X	X
"	Mazar-i-sharif		X	X		
Algeria	El-Harrach	X	X	X	X	
Argentina	Balcarce			X	X	X
"	Bordenave	X	XX[a]	X	X	X
"	Peragamino	X				
Austria	Vienna		X	X	X	X
Brazil	Pelotas		X	X	X	X
Bulgaria	Tolbukhin		X	X	X	X
Chile	Chillan					X
"	Temuco	X	X	X	X	X
Czechoslovakia	Male Ripnany				X	X
"	Sedlec				X	X
England	Cambridge		X	X	X	X
Finland	Jokioinen		X	X	X	X
France	Orgerus					X
"	Versailles	X				
Hungary	Martonvasar		X	X	X	X
"	Szeged				X	X
India	Shalimar		X	X	X	X
"	Simla			X	X	X
"	Damodar		X			
Iran	Hamadan				X	X
"	Karaj	X	X	X	X	X
"	Kermanshah	X				
"	Mashad		X	X		
Iraq	Sulaimaniya	X	X	X	X	X
Italy	Florence					X
"	Milano	X	X	X	X	X
"	Rieti	X	X	X	X	X
Japan	Morioka			X	X	X
"	Sapporo	X	X			
Jordan	Amman	X				X
Korea	Suwon		X	X	X	X
Lebanon	Tel-Amara					X
Mexico	Toluca				XX[a]	X
Netherlands	Wageningen	X	X	X	X	X
Pakistan	Islamabad					X
Poland	Warsaw					X
Romania	Fundulea	X	X	X	X	X
Sweden	Svalof	X	X	X	X	X
Switzerland	Zurich		X	X	X	X
Turkey	Ankara	X	X	X	X	X
"	Erzurum					X
"	Eskisehir	X	X	X	X	X
United States	California	X	X	X		
" "	Colorado		X	X	X	X
" "	Nebraska	X	X	X	X	X
" "	New York		X	X	X	X
" "	North Carolina	X	X	X	X	X
" "	Oklahoma	X	X	X	X	X
" "	Oregon				X	X
" "	Washington		X	X	X	X
USSR	Krasnodar				X	X
West Germany	Monsheim		X	X	X	X
" "	Weihenstephan		X	X	X	X
Yugoslavia	Novi Sad	X	X	X	X	X
"	Zagreb		X	X	X	X
	Total	23	38	38	44	50

a) Two nurseries were completed in one growing season.

India; Pelotas, Brazil and Kathmandu, Nepal. Seed from these sites either was lost enroute to Nebraska, or the cooperators decided the seed was of such poor quality due to abnormal growing conditions that quality analyses would not be worthwhile.

NURSERY MANAGEMENT

Details of nursery management at each IWWPN location are summarized and reported on the page preceding the table of nursery data. The information includes dates of seeding and harvest, precipitation, irrigation, fertilization, disease development, pest problems, and a general description of production conditions.

Precipitation data for the growing cycle were reported from 44 locations. Rainfall ranged from a low of 22 mm at Toluca, Mexico to a high of 1090 in North Carolina, U.S.A. Twenty-seven locations were in the 0–500 mm range and 17 had rainfall between 510–1090. Average rainfall over 44 locations was 488 mm. Supplemental irrigation was applied at 11 locations or 22% of the nursery sites.

Fertilizer was applied to most of the nurseries. Nitrogen was applied at 47 locations or 94% of the total number of sites. Phosphorus and potassium were applied at 44 and 25 locations, or 88 and 50% of the sites, respectively.

Diseases reported included *Puccinia graminis tritici, Puccinia recondita, Puccinia striiformis, Erysiphe* sp., and *Septoria Sp.* Other hazards or problems identified by cooperators included weeds, bird damage, and insect damage (armyworms, aphids, etc.), which generally were kept under control.

DATA SUMMARIZATION AND STATISTICAL TREATMENT

Data were reported by cooperators as follows:

Yield of grain: Weight of clean grain produced by the central rows of each plot. Unit of measurement = grams, which were converted to quintals per hectare.

Test weight: Volume-weight of clean grain. Unit of measurement = kilograms per hectoliter.

Maturity: Date of flowering = date of anther extrusion from ⅓ of the spikes in a plot. Date of ripening = date of physiological maturity. Unit of measurement = days from January 1.

Plant height: Average height of plants excluding awns. Unit of measurement = centimeters.

Lodging: Estimated portion of a plot with lodged or down straw at maturity. Unit of measurement = percent.

Shattering: Estimated portion of grain lost from spikes in the standing border rows of a plot two weeks after harvest of the yield rows. Unit of measurement = percent.

Winter survival: Estimated portion of live plants in each plot in the spring. Unit of measurement = percent.

Frost damage: Estimated amount of flower sterility in a plot resulting from spring frosts. Unit of measurement = percent.

1000-Kernel weight: Weight of one-thousand kernels selected at random from clean grain. Unit of measurement = grams.

Diseases: Severity of the infection and response of cultivars according to the modified Cobb scale for stripe rust (*Puccinia Striiformis*) west., leaf rust (*Puccinia recondita*) Rob. ex Desm., and stem rust (*Puccinia graminis tritici*), Eriks. and Henn. For most other diseases, only severity of infection was reported.

Analyses of variance were completed on traits for which data were reported from two or more replications at a nursery site. Means, coefficients of variation, and least significant differences (L.S.D.) for independent mean comparisons were reported for analyzable traits as a part of the individual nursery site data. Correlation coefficients between all traits are reported on the nursery information sheets adjacent to the individual location nursery data results.

A combined analysis for each trait over all Northern Hemisphere locations in the Fifth IWWPN having a full complement of data was performed on yield, test weight, days to flowering and ripening, plant height, lodging, shattering, winter survival, frost damage, 1000-kernel weight, and protein. The number of locations varied depending on the trait involved, but ranged from a low of four locations for frost damage to a high of 43 for yield. Statistics reported include means, coefficients of variation and least significant differences for cultivar mean comparisons.

A combined analysis also was made over locations and the two years, 1972–1973, for many of the traits indicated above. However, this analysis excluded the spring variety, Lerma Rojo 64, since it winter-killed at many locations in one or both years.

In this report an attempt has been made to regionalize the data from the Northern Hemisphere into various geographical areas that may in themselves represent more uniform rainfall patterns, soil types and/or ecological regions. For purposes of this report we have divided the Northern Hemisphere into five different regions as follows:

1. **Northern Europe**—includes nine countries and sites as follows: Vienna, Austria; Male Ripnany and Sedlec, Czechoslovakia; Cambridge, England; Wageningen, Netherlands; Svalof, Sweden; Zurich, Switzerland; Monsheim and Weihenstephan, West Germany.

2. **South-Southeastern Europe**—includes nine countries and sites as follows: Tolbukhin, Bulgaria; Martonvasar and Szeged, Hungary; Milano and Rieti, Italy; Fundulea, Romania; Krasnodar, U.S.S.R.; Novi Sad and Zagreb, Yugoslavia.

3. **United States**—includes the seven sites Fort Collins, Colorado; Lincoln, Nebraska; Ithaca, New York; Stillwater, Oklahoma; Corvallis, Oregon; and Pullman, Washington.

4. **Near East**—includes six locations at Kabul, Afghanistan; Hamadan and Karaj, Iran; Sulaimaniya, Iraq; Ankara and Eskisehir, Turkey.

5. **Far East**—Morioka, Japan and Suwon, Korea.

The regional analyses were made on data from all 29 winter cultivars grown in the Fourth and Fifth IWWPN's in 1972–73. Two-year means have been computed for yield, protein, and various agronomic traits for each variety within a location and over locations. Means over all varieties within a location for the two-year period also are presented. Lastly, least significant differences (L.S.D.) for cultivar mean comparisons over all varieties and locations are listed below the tables.

Three-year means have been computed by trait at each location for each of 14 varieties for those locations reporting complete data in all three years, 1971–72–73. Means by trait over varieties within each location also are presented. Individual trait means have been calculated for each variety over all locations. Least significant differences (L.S.D.) have been reported for cultivar means over all locations for the various traits analyzed.

RESULTS AND DISCUSSION

Yield and other agronomic, grain quality and disease data are reported for individual Fifth International Winter Wheat Performance Nursery sites in the Northern Hemisphere in Tables 5–49. Tables 53 to 57 contain nursery data from five Southern Hemisphere sites. Supplemental nursery information is also given for each site. Summary tables of average yields and yield rankings over all nursery sites in the Northern Hemisphere are reported in Tables 50 and 51. Similar summary tables for the Southern Hemisphere are given in Tables 58 and 59. Summaries of yield, agronomic traits, and grain quality measurements for each cultivar combined over nursery sites in the Northern Hemisphere are reported in Table 52.

Yield

Forty-five nursery sites from the Northern Hemisphere reported yield data in 1973. The grand yield mean over 44 locations, excluding the nursery at Orgerus, France due to missing data, was 37.1 q/ha (Table 50). This is slightly higher than the 35.5 q/ha reported over 38 locations for the Fourth IWWPN grown in 1972. Winter wheat cultivar means ranged from a low of 27.6 q/ha for Starke to a high of 45.2 for Sava. Centurk, Rousalka, Zlatna dolina, Blueboy, Probstdorfer Extrem, and Bezostaya 1 yielded slightly less than Sava with 43.4, 42.7, 42.3, 42.1, 41.8, and 41.7 q/ha yields, respectively. Table 52 gives yield means over 43 locations, but cultivar rank remains basically the same as in Table 50 for 44 locations.

Five nursery sites from the Southern Hemisphere reported yield data in 1973 (Table 58). The grand yield mean was 26.2 q/ha. The

highest yielding variety was Carifen 12 with 43.4 q/ha. It was followed by the varieties Caribo, Blueboy, Maris Nimrod, Lilifen, Clarion, and Diplomat with 41.3, 40.3, 40.0, 35.9, 35.7, and 34.6 q/ha, respectively. The lowest yielding variety was Starke with 27.6 q/ha.

The summary of yield rankings given in Table 51 for the Northern Hemisphere and Table 59 for the Southern provides an indication of the range of adaptation for each cultivar. The higher yielding cultivars in the Northern Hemisphere such as Sava, Centurk, Rousalka, Zlatna dolina, Blueboy, Probstdorfer Extrem, and Bezostaya 1 ranked among the top ten cultivars 29, 23, 21, 24, 24, 23, and 23 times, respectively. In the Southern Hemisphere, based on five sites, the higher yielding cultivars Carifen 12, Caribo, Blueboy, Maris Nimrod, Lilifen, Clarion, and Diplomat ranked in the top ten 4, 4, 4, 3, 3, 3, and 3 times, respectively. It is noteworthy that only Blueboy ranked among the top ten cultivars in both hemispheres.

From the combined analysis for yield (Table 60) of 29 winter cultivars over two years involving 34 locations, Sava again was the highest yielding with 46.3 q/ha. It was followed by Zlatna dolina, Bezostaya 1, Dacia, Centurk, Probstdorfer Extrem, and Maris Nimrod with 43.6, 43.4, 43.0, 42.9, and 42.6 q/ha, respectively. However, there were no statistically significant differences among these means at the .05 level using an L.S.D. value of 4.4 q/ha. The five lowest yielding cultivars from 1972 and 1973 were Starke, Jyva, Kirac 66, Vakka, and Victor I with 28.8, 29.0, 31.0, 31.3 and 32.7 q/ha, respectively.

Tables 61, 69, 76, 78 and 84 give two-year regional yield means of 29 varieties in Northern Europe, South-Southeastern Europe, the United States, the Near East, and the Far East. In Northern Europe, Maris Nimrod was the highest yielding variety with 63.3 q/ha followed by Sava with 57.2. In South-Southeastern Europe, however, Sava was the highest yielding cultivar with 54.0 q/ha and Zlatna dolina was second with 52.6 q/ha. In the United States the varieties Blueboy and Probstdorfer Extrem were the highest yielding with 37.0 and 36.0 q/ha. The varieties Sava and Zlatna dolina were the top performers in the Far East with yields of 50.3 and 45.4 q/ha.

Table 86 gives three-year yield means for 14 cultivars grown in the years 1971, 1972, and 1973. Varietal averages over three years and 24 locations showed Sava with the highest performance of 43.5 q/ha. Centurk, Probstdorfer Extrem, Bezostaya 1, and Blueboy yielded slightly less, although not significantly so with 42.7, 42.5, 42.1, and 41.2 q/ha, respectively. The five lowest yielding cultivars included Starke, Jyva, Vakka, Strampelli, and C.I.15074 with 28.4, 28.9, 31.8, 34.2, 34.7 q/ha, respectively. The grand yield mean was 37.0 q/ha.

Test Weight

Cultivar means for test weight from 18 sites of the 1973 IWWPN

are compared in Table 52. They range from 80.8 kg/hl for Bezostaya 1 to 67.6 for Carifen 12. The grand mean for all cultivars was 76.9 kg/hl. Following Bezostaya 1, the varieties Probstdorfer Extrem, Lancota, Centurk, and C.I.15074 had the highest test weights.

Cultivar mean test weights for winter cultivars from 13 locations of the 1972 and 1973 IWWPN's are presented in Table 60. The top five varieties included Probstdorfer Extrem, Bezostaya 1, C.I.15074, Lancota, and Atlas 66 with 79.9, 79.8, 78.9, 78.8, and 78.4 kg/hl, respectively. The five varieties exhibiting the lowest test weights were Carifen 12, Maris Nimrod, Clarion, Vakka, and Jyva with 66.0, 71.7, 72.6, 73.1, and 73.4 kg/hl, respectively.

Regional means for test weight from Northern Europe, South-Southeastern Europe, and the Far East are given in Tables 68, 75 and 84. In South-Southeastern Europe, Bezostaya 1 and Probstdorfer Extrem had the highest test weights while Carifen 12 and Maris Nimrod were the lowest. Probstdorfer Extrem and Diplomat had the highest test weights in Northern Europe and Carifen 12 and Tam 102 had the lowest. In the Far East, C.I.15074 and Probstdorfer Extrem had the highest test weights and Carifen 12 and Starke had the lowest.

Three-year means for test weight of 14 cultivars grown from 1971–1973 are compared in Table 91. The nursery grand mean for the three-year period was 76.5 kg/hl. Bezostaya 1 had the highest test weight of 80.2 kg/hl and was followed closely by Probstdorfer Extrem with 80.0 kg/hl. Jyva and Starke had the lowest test weights.

Protein and Adjusted Lysine Content

Protein and adjusted lysine data from individual locations from which ten-gram seed samples were returned to Nebraska are reported in Tables 5–49 for the Northern Hemisphere and in Tables 53–57 for the Southern. No statistical analyses were performed on adjusted lysine since the lysine values represent only one replication of data per location.

Results of the protein analyses combined over locations are presented in Table 52. Excellent expression of the genetic potential for higher protein content in Atlas 66 and its derived cultivars was evident again in 1973 as in the 1972 IWWPN. Atlas 66 had the highest protein with 16.7%. C.I.15074 and Lancota, derivatives of Atlas 66, produced means of 15.7 and 15.5%, respectively.

Relationships between yield level and protein content varied tremendously among varieties. The following tabulation from cultivar means over nursery sites illustrates the various combinations of yield versus protein percentage obtained. An inverse relationship between yield and protein content exists for some varieties, but others yielded well while maintaining significantly above-average protein levels.

Table 60 presents protein data results from 1972 and 1973 for 29 winter cultivars over 23 locations. The grand mean was 14.0%. Pro-

Yield and protein characterization of selected varieties grown in the International Winter Wheat Performance Nursery in 1973.

Cultivar	Yield		Protein	
	q/ha	rank	%	rank
a) *High yield, ordinary protein*				
Sava	45.2	(1)	13.5	(23)
Centurk	42.2	(2)	14.0	(19)
Blueboy	40.8	(5)	12.4	(30)
b) *Mod. high yield, high protein*				
Lancota	38.2	(12)	15.5	(3)
Moldova	38.3	(11)	15.2	(4)
Dacia	40.7	(7)	14.9	(7)
Probstdorfer Extrem	40.4	(8)	14.7	(6)
c) *Low yield, high protein*				
Atlas 66	34.7	(21)	16.7	(1)
C.I.15074	34.1	(22)	15.7	(2)
d) *Low yield, ordinary protein*				
Carifen 12	33.7	(23)	12.9	(29)
Hokuei	35.1	(19)	13.3	(27)

Selection of high vs. low yield based on a grand mean over 43 locations of 36.3 q/ha. Selection of high vs. ordinary protein based on a grand mean over 31 locations of 14.2%.

tein values ranged from a high of 16.6% for Atlas 66 to a low of 12.2% for Blueboy. Other varieties exhibiting higher-than-normal levels of protein included both Lancota and C.I.15074 with 15.5% and Moldova with 14.8%.

Regional protein means for Northern Europe, South-Southeastern Europe, the Near East and the Far East are presented in Tables 62, 70, 79, and 84, respectively. Atlas 66, Lancota, and C.I.15074 had the highest protein percentages in all regions except the Far East. There Atlas 66 was the highest followed by C.I.15074, Dacia, and Lancota. Blueboy was the lowest in protein content in all regions except in the Near East where Hokuei was slightly lower.

Supplementary grain quality data from an observation planting in Vienna, Austria are given in Table 95. Also, results from a sprouting test in Zurich, Switzerland are reported in Table 94.

Plant Height and Lodging

Plant height and lodging were closely associated in the 1973 IWWPN. As shown in Table 52, the taller varieties tended to have higher percentages of lodging. Six of the tallest cultivars from 33 locations with their associative lodging rank are given on the next page.

The shortest variety in the nursery was Carifen 12 with an average height of 76.5 cm. Yield of short-statured cultivars was variable. Sava,

Cultivar	Height cm	Lodging %	Lodging Rank
Atlas 66	118.1	46.7	28
Probstdorfer Extrem	116.7	37.6	24
Kirac 66	114.0	62.8	30
C.I.15074	109.2	37.9	25
Vakka	108.0	29.3	19
Lancota	107.9	44.3	26

the highest yielding cultivar over 43 locations, was on the average only 83.9 cm tall. Carifen 12, the shortest variety in the test, was twenty-third in yield rank. Conversely, Probstdorfer Extrem ranked ninth in yield over 43 locations but was twenty-fourth in height.

Lodging and plant height data for 14 cultivars grown from 1971 to 1973 are summarized in Tables 90 and 92. Probstdorfer Extrem and Atlas 66 were the tallest cultivars with average heights of 116.4 and 114.5 cm, respectively. Atlas 66 ranked fourteenth in lodging while Probstdorfer Extrem was tenth. Sava was the shortest variety overall at 83.7 cm, and also had the lowest lodging score of 6.0%.

Shattering

The grand mean for shattering reported in Table 52 averaged over ten nursery sites in 1973 was only 7.1%. Cultivar means ranged from 4.5% for Lilifen to 62.8% for Kirac 66. Nursery site means ranged from 0.3% at Svalof, Sweden (Table 33) to 23.6 at Rieti, Italy (Table 23). Moderate to heavy shattering occurred at only three sites in 1973; namely, Wageningen, Netherlands (Table 29); Amman, Jordan (Table 25); and Rieti, Italy (Table 23).

Winter Survival

Twenty-two nursery sites reported replicated data for differential winter survival in 1973 with an average of 82.4% survival (Table 52). Winter cultivar means averaged over 22 sites ranged from 94.1% for Centurk to 53.0% for Lilifen. Other cultivars with 90% or more winter survival included C.I.15074, Vakka, Probstdorfer Extrem, Sava, Lancota, Tam 102, Hokuei, and Jyva. Winter cultivars ranking low in winter survival were Lilifen, Victor I, Strampelli, Marimp 3, Atlas 66, and Backa—all with less than 75% survival. Individual nursery sites means ranged from 19.2% at Lincoln, Nebraska (Table 39) to 99.8% at Zagreb, Yugoslavia (Table 49).

Two-year means for winter survival over 13 locations in 1972 and 1973 are given in Table 60. The grand mean for 29 cultivars was 82.4%. The hardiest varieties over this period with winter survival percentages higher than 90% included, in descending order, C.I.15074, Centurk, Probstdorfer Extrem, Vakka, Lancota, Bezostaya 1, Tam 102, Jyva, Hokuei, Diplomat, and Starke. The least winter

hardy varieties included Victor I, Lilifen, Strampelli, and Marimp 3, all of which had less than 60% winter survival.

Regional means for winter survival are given for Northern Europe, the United States, and the Far East in Tables 67, 77 and 85, respectively. The grand means for these locations were 85.3, 73.5, and 94.5%, respectively. In Northern Europe the varieties Probstdorfer Extrem and Starke had the highest survival percentages of 96.2 and 95.9%, respectively. In the United States two varieties from Nebraska, C.I.15074 and Centurk, had the highest winter survivals of 93.5 and 92.3%. In the Far East, all varieties except Strampelli, Victor I, Marimp 3, and Lilifen had more than 90% winter survival.

Three-year means for winter survival over 7 locations and 14 cultivars are given in Table 87. The range in winter survival was from 94.8% for C.I.15074 to 59.7% for Strampelli. Other than Strampelli, Backa, and Atlas 66, all cultivars had survival percentages higher than 75%.

Winter survival data from an observation planting in Lethbridge, Alberta, Canada appear in Table 93. The varieties Strampelli, Victor I, Lilifen, and Lerma Rojo 64 all had no survival. However, several varieties had 100% survival. The nursery mean was 69.6%.

Maturity

Flowering data for cultivars grown at 31 sites in 1973 are summarized in Table 52. On the average the earliest cultivar to flower was Lerma Rojo 64 at 137.2 days from January 1 as compared to Starke, the latest cultivar, at 161.3 days. Rousalka was the earliest winter cultivar to flower and required 139.5 days, only 2.3 days more than the spring cultivar Lerma Rojo 64. The mean for days to flowering from January 1 over all 30 cultivars was 148.3 days.

Ripening data for cultivars grown at 25 sites in 1973 are reported in Table 52. In general, the varieties that flowered earliest also ripened the earliest. Moldova was ripe, on the average, by 178.5 days after January 1. Starke, the latest variety in the tests, was ripe 18.1 days after Moldova on the average.

Two-year means for days to flowering and days to ripening for 29 winter cultivars grown in 1972–1973 are given in Table 60. The earliest variety Rousalka flowered 141.9 days and ripened 185.8 days after January 1. The latest variety in the tests was Starke which required an average of 161.6 days to flowering and 200.4 to ripening. C.I.15074, the median variety in days to flowering, required 149.6 days and ranked twelfth overall in days to ripening.

The maturity data tabulated below for days to flowering and ripening was extracted from the regional information in Tables 63–64, 71–72, 81–82, and 85. The United States had incomplete data and is not reported. The summary shows Rousalka was the earliest in days to flowering in all regions except the Near East. There, Strampelli re-

	Days from January 1			
	Earliest variety		Latest variety	
Northern Europe				
Flowering	Rousalka	(151.5)	Starke	(170.3)
Ripening	Rousalka	(197.4)	Starke	(214.5)
South-Southeastern Europe				
Flowering	Rousalka	(139.0)	Starke	(159.4)
Ripening	Moldova	(179.9)	Starke	(194.9)
Near East				
Flowering	Strampelli	(134.1)	Starke	(155.1)
Ripening	Rousalka	(177.1)	Starke	(190.6)
Far East				
Flowering	Rousalka	(144.1)	Starke	(160.4)
Ripening	Moldova	(182.4)	Starke	(195.8)

quired an average of 134.1 days to reach the flowering stage. Rousalka was also the earliest variety in days to ripening in Northern Europe and the Near East, but Moldova was the earliest in the other two regions. The cultivar, Starke, was the latest both in days to flowering and ripening in all four regions.

Three-year means of 14 cultivars from 1972–1973 for flowering and ripening are reported in Tables 88 and 89, respectively. The earliest cultivar, Strampelli, required 142.2 days to flowering while the latest, Starke, required 160.8. For days to ripening, Strampelli again was the earliest and Starke was the latest. The grand means for days to flowering and ripening were 148.8 and 189.2, respectively.

1000-Kernel Weight

One-thousand kernel weights were analyzed and reported from seven nursery sites in Table 52. The grand mean was 34.1 grams. Cultivar means ranged from 40.6 to 26.9 grams for Rousalka and Tam 102, respectively. Rousalka, Bezostaya 1, Backa, Dacia, and Moldova were the top five cultivars for seed weight in 1973. Similar results were obtained in 1972 with the exception that Lilifen ranked fifth and Moldova sixth.

Examination of the two-year variety means for test weight and 1000-kernel weight in Table 70 shows that Bezostaya 1 ranked first in 1000-kernel weight and was second in test weight. However, some of the varieties having high 1000-kernel weights did not necessarily have high test weights. Lilifen, for example, ranked sixth in 1000-kernel weight but only twenty-first in test weight. On the contrary, Centurk ranked twenty-ninth in 1000-kernel weight but fourth in test weight. Lancota ranked eighth in 1000-kernel weight but third in test weight.

Frost Damage

Frost damage data were analyzed and reported in Table 52 from four locations. Reported on a scale of 0–9, the mean of 30 cultivars in

1973 was 1.9. Tam 102, Lancota, Dacia, Rousalka, and Vakka were the five varieties showing the least amount of frost damage. The five varieties exhibiting the most frost damage included Marimp 3, Victor I, Lerma Rojo 64, Strampelli, and Lilifen. It should be noted that the frost damage could be a result of cultivar earliness with the possible exception of Lilifen, which ranked twentieth in days to flowering.

Individual location means for frost damage ranged from a low of 2.0% at Kabul, Afghanistan (Table 5) to a high of 4.0% at Eskisehir, Turkey (Table 37).

Diseases

Puccinia graminis f. sp. *tritici*, *Puccinia recondita*, *Puccinia striiformis*, and *Erysiphe graminis* were the most prevalent diseases reported in 1973. These diseases were reported from 15, 21, 15, and 17 nursery sites, respectively. Each disease is included in the appropriate individual location data table. *Septoria nodorum* readings from Zurich, Switzerland are given in Table 94.

Table 96 presents data concerning genes for resistance to *Puccinia graminis* f. sp. *tritici* from D. V. McVey and A. P. Roelfs. These data are from stem rust studies conducted at the Regional Rust Laboratory, University of Minnesota.

Results of mildew and stripe rust studies by Lamberts, Lange and Mesdag from the Netherlands are presented in Table 97.

NORTHERN HEMISPHERE

AFGHANISTAN

Kabul

COOPERATOR(S): M. A. Noory; M. A. Rashid.

DATE OF PLANTING: October 31, 1972.

PRECIPITATION DURING CYCLE OF TEST: 379 mm.

AMOUNT OF IRRIGATION APPLIED: Irrigated five times.

FERTILIZER USED: N = 108 kg/ha (urea); P_2O_5 = 80 kg/ha. Fertilizer was applied at 142.3 grams of urea and 142.5 grams of diammonium phosphate (DAP) per 8.10 square meters.

GENERAL DESCRIPTION OF CLIMATIC CONDITIONS DURING TEST: Because of the abundance of snow during the winter often the temperatures were low. The spring temperatures were optimum and there was a lot of rain.

DISEASE DEVELOPMENT: Stripe rust was a problem from heading to harvest. Leaf and stem rust were present too. Seeds were shrivelled due to rust infection.

INSECT, WEED OR PEST PROBLEMS: Armyworms were present but no serious damage resulted.

DATE OF HARVEST: July 28, 1973.

AREA HARVESTED FOR YIELD: 5.4 square meters.

DATES WHEN DIFFERENT NOTES WERE TAKEN: Not reported.

Correlation coefficients for agronomic and grain quality traits of 30 cultivars in the Fifth International Winter Wheat Performance Nursery grown at Kabul, Afghanistan, 1973.

	Yield	Flowering	Ripening	Plant height	Lodging	Shattering	Winter survival
Flowering	-.81**						
Ripening	-.56**	.80**					
Plant height	-.21*	.32**	.18*				
Lodging	.10	-.14	-.05	.26**			
Shattering	.12	-.14	-.13	.12	.16		
Winter survival	-.28**	.24**	.20*	.11	.20*	-.03	
Frost	-.05	.12	.18*	-.25**	-.05	.12	-.12

**Significant at the 1% level. *Significant at the 5% level.

Table 5. Agronomic, grain quality, and disease data for the 30 cultivars in the Fifth International Winter Wheat Performance Nursery grown at Kabul, Afghanistan, 1973.

Cultivar	Yield q/ha	Protein[a] %	Lysine[a] % of protein	Date of Flowering days from Jan. 1	Date of Ripening days from Jan. 1	Plant height cm	Lodging %	Shattering %	Winter survival %	Frost damage 0-9	Rust Stripe Sev. %	Rust Stripe Resp.	Rust Leaf Sev. %	Rust Leaf Resp.	Rust Stem Sev. %	Rust Stem Resp.
Lerma Rojo 64	57.8	15.6	2.66	133	178	96	14	2	96	2	1	R	6	MR	0	0
Strampelli	56.4	13.5	2.86	135	179	90	0	0	97	2	0	0-R	15	MS	13	MS
Bezostaya 1	55.3	15.3	2.99	143	185	100	0	0	98	2	5	R-MR	2	0-R	3	0-MR
Lilifen	55.1	16.2	2.70	149	199	96	0	0	96	3	1	R	8	R	13	MR
Marimp 3	53.7	15.5	2.92	140	182	94	0	4	97	3	6	R-MR	22	R-MS	22	MS-S
Victor I	51.6	15.7	2.76	140	183	76	0	0	97	3	15	MR	10	MR	10	R-MR
Moldova	50.9	17.2	2.80	135	182	109	28	0	97	2	0	0	6	R	37	S
Rousalka	50.6	13.7	2.86	134	183	80	0	0	97	2	0	0-R	0	0	80	MS-S
Zlatna dolina	50.1	13.1	2.39	140	181	75	0	0	97	2	20	MR	0	0	35	S
Tam 102	47.1	14.1	2.96	140	183	94	1	0	97	1	16	MR	10	R	37	MS
Dacia	46.2	16.8	2.96	140	184	111	4	0	97	2	3	R	0	0	37	S
Sava	45.1	13.2	2.94	146	183	86	0	0	97	2	0	0	0	0	37	MS
Lancota (NE701132)	43.6	17.2	2.86	147	185	120	11	0	98	1	1	R	0	0	0	0
Centurk	43.6	14.0	3.03	143	184	108	26	0	98	2	17	0-S	12	MS	0	0
Backa	42.6	13.8	2.85	139	183	89	0	0	96	3	0	0	0	0	85	S
Probstdorfer Extrem	42.1	17.1	2.82	151	181	123	0	0	98	2	13	MR	0	0	15	MS-S
Kirac 66	37.2	15.6	2.76	146	190	120	71	2	99	2	20	MR	35	MS	67	S
Atlas 66	36.9	18.7	2.93	148	184	136	0	2	95	1	11	MR-MS	0	0	10	MR-MS
C.I.15074	35.7	16.8	2.97	148	185	111	0	0	97	3	62	S	0	0	17	S
Diplomat	31.5	14.6	2.74	161	202	96	0	0	96	3	0	0-R	1	R	47	S
Zenith	31.4	14.3	2.98	153	195	105	0	0	98	2	1	R	37	MS	72	S
Caribo	31.4	13.8	2.86	155	187	104	0	0	98	2	0	0	7	0-MR	50	S
Blueboy	30.9	13.0	3.18	147	183	101	3	0	98	2	25	MS-S	1	0-R	72	S
Hokuei	27.7	12.4	2.96	149	186	95	6	0	98	2	2	0-R	0	0	52	MS-S
Clarion	24.8	15.2	3.01	159	202	103	0	0	99	2	5	R-MR	1	R	62	S
Maris Nimrod	23.9	13.5	2.99	156	189	93	0	0	98	3	0	0	0	0	75	S
Vakka	20.9	16.0	2.84	157	194	109	10	0	98	2	0	0-R	2	R	77	S
Jyva	16.6	16.0	3.02	160	190	104	0	1	96	3	1	R	1	R	67	S
Carifen 12	15.5	12.8	3.09	150	185	80	0	0	98	2	10	MR-MS	12	MS	88	S
Starke	7.3	14.0	3.17	165	201	116	0	0	99	2	1	R	17	MS-S	75	S
Mean	38.8	15.0	2.92	146.8	186.9	100.6	5.8	0.3	97.4	2.0	7.9		6.8		41.8	
Coefficient of variation (%)	12.3	--	--	0.9	0.4	4.3	185.4	311.4	0.9	31.3	--		--		--	
L.S.D. of cultivar means (.05)	6.7	--	--	1.9	1.0	6.1	15.2	1.5	1.2	0.9	--		--		--	

a) One rep only.

AFGHANISTAN

Kunduz

COOPERATOR(S): Mir Mohammad Ayub; H. C. Wiggin; P. A. Ahadyar.

DATE OF PLANTING: November 25, 1972.

PRECIPITATION DURING CYCLE OF TEST: 394 mm.

AMOUNT OF IRRIGATION APPLIED: 5 irrigations applied. The dates were November 25, 1972 and March 4, April 28, May 9 and May 23, 1973.

FERTILIZER USED: N = 109 kg/ha (urea and diammonium phosphate) P_2O_5 = 84 kg/ha (diammonium phosphate).

GENERAL DESCRIPTION OF CLIMATIC CONDITIONS DURING TEST: The climate was warmer and more humid than previous years. This was suitable for diseases, especially rust.

DISEASE DEVELOPMENT: Diseases were relatively severe.

INSECT, WEED OR PEST PROBLEMS: Aphids were a problem when the wheat was in the milk stage. The nursery was sprayed with malathion May 20, 1973.

DATE OF HARVEST: June 4 - June 23, 1973.

AREA HARVESTED FOR YIELD: 5.4 square meters.

DATES WHEN DIFFERENT NOTES WERE TAKEN:
Diseases - May 26, 1973
Shattering - July 10, 1973
Winter survival - March 25, 1973

Correlation coefficients for agronomic and grain quality traits of 30 cultivars in the Fifth International Winter Wheat Performance Nursery grown at Kunduz, Afghanistan, 1973.

	Yield	Test weight	Protein	Flowering	Ripening	Plant height	Lodging	Shattering
Test weight	.70**							
Protein	-.64**	-.35**						
Flowering	-.82**	-.69**	.57*					
Ripening	-.67**	-.53**	.45**	.73**				
Plant height	-.05	.18*	.11	.07	.15			
Lodging	-.10	.11	.09	.06	.09	.58**		
Shattering	.26**	.35**	-.03	-.41**	-.41**	-.22*	-.22	
Winter survival	.12	.10	.01	-.11	-.11	-.02	.13	-.07

**Significant at the 1% level. *Significant at the 5% level.

Table 6. Agronomic, grain quality, and disease data for the 30 cultivars in the Fifth International Winter Wheat Performance Nursery grown at Kunduz, Afghanistan, 1973.

Cultivar	Yield q/ha	Test weight kg/hl	Protein %	Lysine[a] % of protein	Date of Flowering days from Jan. 1	Date of Ripening days from Jan. 1	Plant height cm	Lodging %	Shattering %	Winter survival %	Rust: Stripe Sev. %	Rust: Stripe Resp.	Rust: Leaf Sev. %	Rust: Leaf Resp.	Rust: Stem Sev. %	Rust: Stem Resp.
Lerma Rojo 64	57.7	82.6	15.9	3.01	114	159	112	0	12	97	0	0	30	MS	0	0
Strampelli	57.6	82.0	14.7	3.05	116	154	100	1	1	97	0	0	1	0-MR	0	0
Rousalka	55.4	81.0	15.2	3.11	114	154	91	0	13	96	0	0	0	0	80	S
Marimp 3	54.6	80.6	17.1	3.07	117	153	102	0	30	94	0	0	50	S	63	S
Dacia	54.0	76.9	17.8	3.13	124	161	124	46	0	96	0	0	20	S	20	S
Zlatna dolina	53.4	77.7	15.4	3.02	118	152	83	0	1	97	0	0	0	0	75	0
Centurk	51.8	81.3	16.3	3.27	121	160	126	35	10	93	0	0	15	MR	40	S
Moldova	51.6	78.6	18.0	3.01	114	155	120	5	2	98	0	0	10	S	10	S
Victor I	51.3	79.8	17.2	3.07	117	152	85	0	19	97	0	0	63	S	75	S
Sava	51.3	77.3	16.2	3.14	118	154	89	0	1	97	3	0-R	30	S	10	S
Bezostaya 1	50.4	82.3	17.2	2.84	120	161	108	4	1	98	0	0	20	S	40	S
Tam 102	48.3	74.4	14.6	3.19	125	159	108	6	1	94	0	0	30	S	10	S
Blueboy	47.4	72.6	13.1	3.14	121	159	125	9	1	96	0	0	0	0	95	S
Lilifen	46.5	74.1	17.3	2.97	132	168	109	4	5	96	1	R	1	R	0	0
Lancota (NE701132)	45.4	80.1	17.2	3.12	126	164	134	73	5	97	0	0	5	R	0	0
Backa	43.7	80.2	18.6	2.89	116	155	93	0	35	97	0	0	15	S	83	S
Probstdorfer Extrem	41.7	77.9	17.6	2.94	131	164	136	28	1	98	0	0	0	0	0	0
C.I.15074	39.7	82.2	17.8	3.06	127	155	130	53	4	96	27	S	10	MR	35	MS
Clarion	39.7	71.2	18.7	3.06	138	169	101	21	0	98	0	0	0	0	20	MS
Hokuei	39.2	74.3	16.1	3.15	129	165	110	68	1	94	0	0	33	MS	20	MS
Atlas 66	37.7	75.3	20.2	2.93	126	160	142	56	0	97	3	MR	10	MR	0	0
Caribo	35.9	68.5	18.4	2.89	136	167	112	0	2	97	0	0	20	MS	56	MS-S
Maris Nimrod	35.6	71.1	17.1	3.07	130	169	105	23	5	98	0	0	0	0	63	S
Carifen 12	31.9	59.9	16.5	3.41	132	163	85	0	0	97	0	0	0	0	99	S
Zenith	29.5	69.1	18.6	2.98	137	168	105	0	0	97	0	0	0	0	80	S
Kirac 66	28.1	74.4	16.9	3.23	123	164	129	71	7	96	0	0	0	0	87	S
Vakka	24.4	65.2	19.8	3.06	138	169	101	21	0	94	0	0	0	0	99	S
Diplomat	23.0	73.5	20.0	3.00	137	171	104	0	4	96	0	0	0	0	61	MR-S
Jyva	19.6	68.7	20.3	3.04	141	170	105	0	1	95	0	0	0	0	99	S
Starke	14.9	66.5	19.3	3.17	145	172	108	0	0	92	0	0	0	0	99	S
Mean	42.1	75.3	17.3	3.07	126.0	161.3	109.3	17.4	5.4	96.2	1.1		12.1		47.3	
Coefficient of variation (%)	7.6	3.7	4.3	--	3.0	2.8	4.0	119.9	97.7	3.1	--		--		--	
L.S.D. of cultivar means (.05)	4.5	4.0	1.0	--	5.2	6.3	6.1	29.3	7.4	NS	--		--		--	

a) One rep only.

AUSTRIA

Vienna

COOPERATOR(S): R. Hron; H. Fossleitner.

DATE OF PLANTING: October 13, 1972.

PRECIPITATION DURING CYCLE OF TEST: 411 mm; August - September (71 mm); October - March (128 mm); April - July (212 mm).

AMOUNT OF IRRIGATION APPLIED: 40 mm.

FERTILIZER USED: Preplant - N = 36 kg/ha; P_2O_5 = 90 kg/ha; K_2O = 120 kg/ha. Nitrogen was topdressed at 63 kg/ha in the early spring.

GENERAL DESCRIPTION OF CLIMATIC CONDITIONS DURING TEST: Considerable winter kill in some varieties in spite of a relatively mild winter with low precipitation. April was wet and cool with severe drought following in May. There was poor precipitation in the first two weeks of June with 39 mm of rain in the last part of the month. July was dry.

DISEASE DEVELOPMENT: Severe mildew in May and June. Relatively late leaf rust infection in some varieties (Backa, Carifen 12). Almost no stem rust present.

INSECT, WEED OR PEST PROBLEMS: Weeds controlled. Aphids were a small problem.

DATE OF HARVEST: July 19, 1973.

AREA HARVESTED FOR YIELD: 3.6 square meters.

DATES WHEN DIFFERENT NOTES WERE TAKEN:
Lodging - July 16, 1973
Winter survival - April 24, 1973
Mildew - May 14 - June 7, 1973

Correlation coefficients for agronomic and grain quality traits of 30 cultivars in the Fifth International Winter Wheat Performance Nursery grown at Vienna, Austria, 1973.

	Yield	Protein	Flowering	Ripening	Plant height	Lodging	Winter survival
Protein	-.05						
Flowering	-.15	-.07					
Ripening	-.28**	-.04	.77**				
Plant height	.02	.46	.41**	.24*			
Lodging	.24	.21*	-.48**	-.37**	.25*		
Winter survival	.51**	.07	.29**	-.14	.42**	-.12	
1000-kernel weight	.00	.28**	-.29**	-.07	-.12	.08	-.15

**Significant at the 1% level. *Significant at the 5% level.

Table 7. Agronomic, grain quality, and disease data for the 30 cultivars in the Fifth International Winter Wheat Performance Nursery grown at Vienna, Austria, 1973.[b]

Cultivar	Yield q/ha	Protein %	Lysine[a] % of protein	Date of Flowering (days from Jan. 1)	Date of Ripening (days from Jan. 1)	Plant height cm	Lodging %	Winter survival %	1000-Kernel weight gm	Mildew Sev. %
Sava	75.6	13.3	3.15	145	188	85	47	100	38	0
Centurk	68.1	14.3	3.04	148	189	93	37	98	33	7
Zlatna dolina	65.1	13.1	3.04	144	186	73	15	96	41	0
Backa	62.1	14.5	2.99	144	191	78	17	93	48	4
Probstdorfer Extrem	61.7	15.6	2.75	150	190	108	33	99	43	12
Maris Nimrod	59.5	14.2	2.94	155	196	90	25	98	41	4
Carifen 12	59.4	12.7	3.22	152	192	72	0	91	35	32
Atlas 66	59.3	17.0	2.83	148	192	110	43	82	40	7
Hokuei	57.5	13.6	2.94	147	194	97	48	92	40	17
Lancota (NE701132)	57.5	16.3	2.72	146	190	103	43	98	39	5
Moldova	56.3	14.9	2.95	143	187	103	60	88	44	22
Blueboy	56.3	12.9	3.02	147	192	93	23	96	38	19
Strampelli	56.2	12.6	3.07	143	188	85	75	70	41	12
Zenith	54.3	13.8	2.89	155	194	95	0	93	35	6
Marimp 3	54.2	13.1	3.12	146	190	87	47	63	39	8
C.I.15074	53.9	15.8	3.01	147	190	107	32	98	37	12
Dacia	53.8	15.2	3.08	146	189	92	53	92	45	22
Rousalka	53.8	14.4	3.04	140	185	77	23	89	47	25
Clarion	52.7	13.5	3.24	155	195	90	0	98	40	20
Tam 102	50.5	13.0	3.01	143	185	85	37	99	31	36
Bezostaya 1	50.3	14.4	2.92	148	188	88	38	99	46	20
Jyva	48.7	14.3	2.94	156	197	112	43	93	37	8
Caribo	47.9	12.7	2.99	156	195	93	5	90	38	10
Vakka	47.7	14.3	2.95	155	192	107	43	95	38	11
Starke	46.9	13.9	3.15	159	197	107	5	100	35	3
Victor I	45.0	13.1	3.08	147	193	70	10	40	35	20
Lilifen	44.9	14.1	3.08	150	197	77	0	40	45	20
Diplomat	44.8	14.5	2.95	156	197	100	0	98	43	20
Kirac 66	38.3	14.7	3.10	149	191	102	50	95	38	42
Lerma Rojo 64	27.8	14.9	3.02	141	192	82	68	17	42	25
Mean	53.7	14.2	3.01	148.8	191.4	92.0	30.7	39.7	40.0	15.0
Coefficient of variation (%)	9.8	5.4	--	0.5	0.7	4.8	43.9	8.1	4.2	--
L.S.D. of cultivar means (.05)	8.6	1.2	--	1.1	2.2	7.2	22.1	11.5	2.7	--

a) One rep only.
b) Three reps only.

BULGARIA

Tolbukhin

COOPERATOR(S): B. Simeonov; I.

DATE OF PLANTING: October 23, 1972.

PRECIPITATION DURING CYCLE OF TEST: 412 mm.

AMOUNT OF IRRIGATION APPLIED: None.

FERTILIZER USED: N = 100 kg/ha (NH_4NO_3); P_2O_5 = 130 kg/ha ($(Ca(H_2PO_4)_2)$)

GENERAL DESCRIPTION OF CLIMATIC CONDITIONS DURING TEST: Wet autumn, mild winter, wet summer. All varieties survived safely due to the mild winter.

DISEASE DEVELOPMENT: Leaf rust, mildew.

INSECT, WEED OR PEST PROBLEMS: None.

DATE OF HARVEST: July 10, 1973.

AREA HARVESTED FOR YIELD: 3.0 square meters.

DATES WHEN DIFFERENT NOTES WERE TAKEN:
Mildew - June 8, 1973
Leaf rust - June 25, 1973
Lodging - July 1, 1973

Correlation coefficients for agronomic and grain quality traits of 30 cultivars in the Fifth International Winter Wheat Performance Nursery grown at Tolbukhin, Bulgaria, 1973.

	Yield	Test weight	Protein	Flowering	Plant height
Test weight	.70**				
Protein	-.26**	-.05			
Flowering	-.40**	-.32**	.19*		
Plant height	-.29**	.06	.36**	.14	
Lodging	-.40	.13	.13	-.12	.48**

**Significant at the 1% level. *Significant at the 5% level.

Table 8. Agronomic, grain quality, and disease data for the 30 cultivars in the Fifth International Winter Wheat Performance Nursery grown at Tolbukhin, Bulgaria, 1973.

Cultivar	Yield q/ha	Test weight kg/hl	Protein %	Lysine[a] % of protein	Date of flowering days from Jan. 1	Plant height cm	Lodging %	Stripe rust Sev. %	Stripe rust Resp.	Mildew sev. %
Sava	79.2	80.2	13.4	3.24	145	91	1	1	R	5
Rousalka	72.9	79.8	14.2	3.08	138	83	10	0	0	40
Strampelli	69.4	78.5	12.9	3.01	142	91	57	10	MS	50
Moldova	64.4	78.1	15.7	3.10	143	105	90	0	0	50
Victor I	64.2	80.1	13.6	3.20	146	88	0	65	VS	65
Backa	63.2	79.5	15.0	3.18	177	93	3	40	VS	10
Tam 102	62.6	78.1	13.0	3.15	146	99	4	10	MR	65
Mariap 3	61.9	80.4	15.0	3.21	146	103	66	25	MR-MS	65
Centurk	61.0	80.0	13.7	3.23	178	104	99	1	R	30
Lerma Rojo 64	60.2	79.7	13.6	3.20	137	96	99	1	R	65
Zlatna dolina	58.9	79.0	13.4	3.16	146	85	6	5	MR	50
Dacia	56.7	77.6	15.3	3.11	145	104	85	10	MR	65
Probstdorfer Extrem	56.4	78.8	14.5	2.97	151	115	99	70	S	10
Lancota (NE701132)	55.7	79.1	16.2	2.92	148	109	99	0	0	40
Atlas 66	54.9	78.5	17.2	2.98	150	113	99	0	0	25
Bezostaya 1	53.7	79.3	14.0	3.06	149	95	92	40	R	65
Zenith	49.9	76.3	14.3	3.03	157	105	9	65	VR	5
Lilifen	49.9	75.0	15.5	3.08	150	100	1	0	0	65
Blueboy	48.7	74.0	12.4	3.20	150	106	51	5	MR-MS	99
Hokuei	48.4	76.2	12.9	3.19	150	102	99	25	MR	65
Maris Nimrod	47.7	64.8	14.4	3.12	156	95	99	25	MS	25
C.I.15074	44.4	79.2	15.2	3.19	150	108	96	1	R	80
Caribo	44.1	71.1	13.9	3.16	160	105	61	50	VS	65
Clarion	42.4	71.8	15.6	3.17	161	94	41	1	R	50
Kirac 66	38.7	75.6	14.1	3.07	150	114	99	80	VS	40
Diplomat	38.0	77.5	15.5	3.15	162	100	0	25	MS	80
Carifen 12	37.7	63.2	13.5	3.31	154	83	0	99	VS	99
Vakka	31.3	71.0	14.7	3.14	157	109	66	65	VR	40
Jyva	28.4	68.9	14.8	3.19	158	104	49	65	VS	25
Starke	20.8	65.2	16.0	3.14	164	100	0	99	VS	40
Mean	52.2	75.9	14.5	3.13	152.2	99.9	52.6	29.4		48.1
Coefficient of variation (%)	10.2	—	1.2	—	—	4.4	39.2	—		—
L.S.D. of cultivar means (.05)	7.5	0.0	0.2	—	0.0	6.2	29.0	—		—

a) One rep only.

CZECHOSLOVAKIA

Male Ripnany

COOPERATOR(S): J. Schmidt; A. Hlavicka; D. Michalik.

DATE OF PLANTING: October 6, 1972.

PRECIPITATION DURING CYCLE OF TEST: 600 mm.

AMOUNT OF IRRIGATION APPLIED: None.

FERTILIZER USED: N = 50 kg/ha (NH_4NO_3); P_2O_5 = 144 kg/ha (superphosphate); K_2O = 166 kg/ha (Potash salt).

GENERAL DESCRIPTION OF CLIMATIC CONDITIONS DURING TEST: The autumn was warm followed by a mild winter with little snow. Some winter kill was observed in some varieties. Rainfall was high in April but May was dry. Rains in late June stimulated grain filling of some varieties.

DISEASE DEVELOPMENT: Mildew development was very light on the leaves and heads on most varieties. Glume rust and leaf rust were not found. Stem rust became evident on late maturing varieties.

INSECT, WEED OR PEST PROBLEMS: Field mice were a problem in the fall but were controlled by spraying with Endrin.

DATE OF HARVEST: July 14-23, 1973.

AREA HARVESTED FOR YIELD: 7.5 square meters.

DATES WHEN DIFFERENT NOTES WERE TAKEN:
Germination - October 23-26, 1973
Tillering - December 10-16, 1973
Mildew - First occurrence - May 15-20, 1973
Mildew (head) - June 5-18, 1973
Drying of lower leaves - May 14-19, 1973

Correlation coefficients for agronomic and grain quality traits of 30 cultivars in the Fifth International Winter Wheat Performance Nursery grown at Male Ripnany, Czechoslovakia, 1973.

	Yield	Test weight	Protein	Flowering	Ripening	Plant height	Lodging
Test weight	.20*						
Protein	-.36**	.04					
Flowering	.20*	-.44**	-.08				
Ripening	-.11	-.16	.12	.24**			
Plant height	.32*	.10	.40**	.42**	.09		
Lodging	-.06	-.04	.36**	.23*	.05	.61	
Winter survival	.84**	.12	-.25**	.33**	-.08	.45**	-.00

**Significant at the 1% level. *Significant at the 5% level.

Table 9. Agronomic, grain quality, and disease data for the 30 cultivars in the Fifth International Winter Wheat Performance Nursery grown at Male Ripnany, Czechoslovakia, 1973.

Cultivar	Yield q/ha	Test weight kg/hl	Protein %	Lysine[a] % of protein	Date of Flowering (days from Jan. 1)	Date of Ripening (days from Jan. 1)	Plant height cm	Lodging %	Winter survival %	Days from planting to seedling emergence
Sava	81.1	79.5	13.6	3.25	147	197	85	0	100	23
Centurk	75.4	81.4	14.1	3.14	150	191	104	67	100	26
Probstdorfer Extrem	74.2	78.3	14.7	2.74	152	195	115	46	100	25
Blueboy	69.0	75.1	12.1	3.24	152	192	99	42	98	23
Zenith	68.0	80.5	15.3	2.94	157	199	97	59	89	26
Clarion	67.8	78.7	13.7	3.16	158	203	94	49	100	25
Jyva	67.6	69.6	15.4	3.04	158	200	109	67	95	26
Zlatna dolina	66.5	78.6	13.7	3.16	148	191	76	0	97	23
Caribo	64.7	76.6	13.7	3.05	156	199	102	35	100	26
Bezostaya 1	64.4	80.4	14.0	3.05	150	192	90	24	99	24
Maris Nimrod	64.3	76.5	12.7	3.16	158	177	93	50	94	25
Carifen 12	63.9	71.0	12.8	3.15	153	186	74	0	96	26
Rousalka	63.5	81.2	14.3	3.14	145	187	78	0	94	25
Hokuei	63.4	78.3	12.8	2.99	151	194	97	86	92	24
Vakka	61.5	75.3	15.4	3.12	157	196	98	75	94	23
Backa	61.1	78.8	14.8	3.07	147	191	82	22	87	24
Dacia	61.0	79.6	15.4	3.11	150	188	97	32	95	24
Atlas 66	60.8	74.7	16.7	3.03	152	192	120	60	84	24
Lancota (NE701132)	60.6	78.9	16.3	2.96	150	190	106	61	95	26
Tam 102	59.0	77.0	13.3	3.24	148	186	88	29	100	25
Starke	57.3	73.3	14.2	3.19	162	203	106	57	97	25
C.I.15074	57.2	81.5	16.6	3.02	150	188	115	76	86	27
Moldova	57.0	80.0	15.3	3.15	149	189	103	34	90	24
Kirac 66	56.4	79.6	14.9	3.15	152	195	112	82	100	25
Diplomat	53.4	77.6	14.7	3.19	159	201	104	0	99	24
Strampelli	45.1	79.2	14.0	2.91	147	190	83	62	20	26
Marimp 3	44.9	79.5	14.4	3.39	148	191	87	40	57	24
Victor I	40.1	79.2	14.0	3.17	150	191	76	5	34	24
Lilifen	39.2	74.3	14.4	3.23	152	204	76	0	25	26
Lerma Rojo 64	11.6	73.4	16.9	2.92	147	201	81	72	3	23
Mean	59.4	77.6	14.5	3.10	151.8	193.3	94.7	41.0	83.9	24.8
Coefficient of variation (%)	5.5	1.2	1.5	--	0.1	5.1	1.3	3.8	5.3	--
L.S.D. of cultivar means (.05)	4.6	1.3	0.3	--	0.1	13.9	1.8	2.2	6.3	--

a) One rep only.

Table 9. Agronomic, grain quality, and disease data for the 30 cultivars in the Fifth International Winter Wheat Performance Nursery grown at Male Ripnany, Czechoslovakia, 1973. (Concluded)

Cultivar	Speed of seedling growth 9-1	Mildew first occurrence days from Jan. 1	Mildew first occurence on head days from Jan. 1	Mildew on head %	Initial leaf senescense days from Jan. 1	Shattering[b] %	Head[b] breakage %	Lodging[b] %
Sava	8	20	14	3	17	7	4	21
Centurk	5	19	15	8	21	3	3	68
Probstdorfer Extrem	6	22	17	3	20	3	6	53
Blueboy	8	18	10	51	17	3	1	43
Zenith	7	18	15	6	20	2	0	57
Clarion	8	19	15	40	16	5	2	49
Jyva	6	18	15	14	17	2	1	79
Zlatna dolina	8	22	17	3	19	5	7	0
Caribo	7	22	17	57	16	3	2	47
Bezostaya 1	8	17	11	53	16	4	2	25
Maris Nimrod	7	22	15	15	19	2	1	78
Carifen 12	7	17	11	71	16	2	0	0
Rousalka	7	20	6	28	18	6	6	0
Hokuei	7	16	12	19	17	3	2	93
Vakka	7	21	14	13	15	4	4	78
Backa	9	21	12	16	19	3	5	25
Dacia	6	18	10	34	17	2	2	33
Atlas 66	9	19	11	11	20	3	2	67
Lancota (NE701132)	5	19	13	9	19	3	3	72
Tam 102	6	17	6	72	15	2	0	56
Starke	7	19	19	10	16	3	5	60
C.I.15074	4	21	17	13	18	2	1	80
Moldova	7	19	8	52	19	7	9	35
Kirac 66	7	16	11	65	15	7	8	90
Diplomat	6	17	14	60	16	6	6	0
Strampelli	9	18	12	6	20	5	8	76
Marimp 3	9	20	12	27	19	5	7	41
Victor I	9	21	10	7	17	4	3	2
Lilifen	8	20	9	67	20	2	1	0
Lerma Rojo 64	9	19	8	23	18	3	1	80
Mean	7.2	19.2	12.5	28.5	17.7	3.8	3.4	47.1
Coefficient of variation (%)	--	--	--	--	--	--	--	--
L.S.D. of cultivar means (.05)	--	--	--	--	--	--	--	--

b) Fourteen days after harvest.

CZECHOSLOVAKIA

Sedlec

COOPERATOR(S): J. Schmidt; A. Hlavicka; J. Maly; A. Vernerova.

DATE OF PLANTING: October 11, 1972.

PRECIPITATION DURING CYCLE OF TEST: 348 mm from October 1, 1972 to August 10, 1973.

AMOUNT OF IRRIGATION APPLIED: None.

FERTILIZER USED: N = 50 kg/ha supplied as 20 from $(NH_4)_2SO_4$ and 30 from $CO(NH_2)_2$.

GENERAL DESCRIPTION OF CLIMATIC CONDITIONS DURING TEST: Season was quite dry.

DISEASE DEVELOPMENT: Intense appearance of mildew. Other diseases were not of consequence.

INSECT, WEED OR PEST PROBLEMS: None. Sprayed with 1.5 kg/ha MCPA.

DATE OF HARVEST: August 4-14, 1973.

AREA HARVESTED FOR YIELD: 7.35 square meters.

DATES WHEN DIFFERENT NOTES WERE TAKEN:

Emergence (50% of plants) - November, 1972
Stand after emergence - November 22, 1972
Stand after winter - March 3, 1973
Winter survival - March 26, 1973
Plants damaged by dust storm - April 24, 1973
Intensity of spring growth - May 4, 1973
Spring stand - May 21, 1973
Tillering intensity - May 21, 1973
Stand at heading - June 28, 1973
Mildew (severity on plants) - June 28, 1973
Mildew (severity on heads) - July 6-8, 1973
Lodging - July 30, August 6, 1973

Correlation coefficients for agronomic and grain quality traits of 30 cultivars in the Fifth International Winter Wheat Performance Nursery grown at Sedlec, Czechoslovakia, 1973.

	Yield	Test weight	Protein	Flowering	Ripening	Plant height	Lodging	Winter survival
Test weight	.05							
Protein	-.47	.37						
Flowering	.33**	.13	-.15					
Ripening	-.05	.22*	.03	.78**				
Plant height	.30**	.54**	.28	.55**	.42**			
Lodging	.00	.19*	.01	-.16	-.05	.24**		
Winter survival	.67**	.28**	-.07	.18*	-.15	.55**	.05	
1000-kernel weight	.11	.28**	.21*	.30**	.45**	.20*	-.19*	.11

**Significant at the 1% level. *Significant at the 5% level.

Table 10. Agronomic, grain quality, and disease data for the 30 cultivars in the Fifth International Winter Wheat Performance Nursery grown at Sedlec, Czechoslovakia. 1973.

Cultivar	Yield q/ha	Test weight kg/hl	Protein %	Lysine[a] % of protein	Date of Flowering days from Jan. 1	Date of Ripening days from Jan. 1	Plant height cm	Lodging %	Winter survival %	1000-Kernel weight gm	Mildew Sev. %	Seeds / spike
Maris Nimrod	63.7	79.1	13.6	3.23	172	219	96	39	93	50	10	24.3
Clarion	63.1	78.7	13.8	3.26	173	220	96	15	94	44	33	23.9
Starke	62.5	83.1	14.1	2.91	175	227	119	46	95	43	10	24.9
Centurk	61.5	81.7	15.6	2.98	167	207	102	48	98	36	1	16.4
Zenith	59.9	82.8	15.7	3.04	173	215	99	9	92	40	13	26.8
Caribo	59.1	77.7	13.0	3.07	172	215	105	8	90	46	11	23.0
Sava	55.2	78.4	15.4	3.21	161	206	73	8	81	41	8	20.1
Vakka	53.7	77.7	15.7	2.94	171	213	120	38	95	40	11	21.0
Carifen 12	52.4	67.2	13.2	3.28	170	212	73	1	86	38	45	20.3
Jyva	51.6	79.5	17.0	3.03	172	222	119	35	95	44	11	22.0
Diplomat	49.9	83.8	14.3	3.09	173	223	106	11	96	47	30	19.5
Tam 102	49.6	77.3	14.2	3.18	160	202	81	49	96	33	38	23.2
Dacia	49.5	79.2	18.3	3.00	166	209	99	23	95	50	41	15.8
Probstdorfer Extrem	47.4	82.1	18.1	2.78	168	213	122	5	95	46	1	16.7
Blueboy	47.2	78.1	14.1	3.17	167	220	100	4	87	44	56	15.6
Hokuei	46.9	80.5	14.9	2.98	167	220	97	35	96	45	14	13.4
Moldova	45.6	78.4	17.7	3.02	161	210	97	40	94	45	40	16.5
Backa	45.0	78.1	16.9	2.97	164	213	66	6	72	46	28	19.1
Bezostaya 1	44.5	81.6	17.1	2.84	165	212	91	15	96	51	18	15.8
Rousalka	44.3	78.8	15.3	3.11	159	204	66	3	86	44	41	18.0
Zlatna dolina	43.1	78.1	16.4	3.05	162	211	67	0	82	43	6	19.5
Marimp 3	37.4	78.1	16.0	3.04	164	213	73	4	37	40	33	24.8
Atlas 66	34.7	81.4	20.4	2.77	170	227	111	29	46	45	14	17.1
Kirac 66	34.1	79.8	16.2	3.15	168	220	113	46	87	44	40	10.6
Lancota (NE701132)	33.5	82.0	19.4	2.73	169	218	112	25	92	44	8	9.9
Strampelli	32.7	77.8	14.5	3.10	159	208	76	63	47	36	15	24.8
C.I.15074	28.3	81.1	20.1	2.89	167	212	112	14	93	39	5	7.4
Victor I	27.4	76.7	15.1	3.14	164	213	66	4	15	38	29	26.2
Lerma Rojo 64	25.7	79.1	16.7	3.00	160	212	73	69	29	43	8	19.0
Lilifen	23.2	75.4	15.8	3.16	176	229	70	0	14	48	38	29.5
Mean	45.8	79.1	16.0	3.04	167.0	214.9	93.2	22.9	79.0	43.2	21.8	19.5
Coefficient of variation (%)	8.1	0.8	1.9	--	0.4	0.2	3.2	36.6	7.7	2.7	--	--
L.S.D. of cultivar means (.05)	5.2	0.9	0.4	--	1.0	0.6	4.2	11.8	8.5	1.6	--	--
Local cultivar												
Zora	57.8	82.1	--	--	166	223	103	10	95	47	8	24.1

a) One rep only.

Table 10. Agronomic, grain quality, and disease data for the 30 cultivars in the Fifth International Winter Wheat Performance Nursery grown at Sedlec, Czechoslovakia, 1973. (Concluded)

Cultivar	Number of heads/m^2	Tillering[a] capacity (0-9)	Spring stand (0-9)	Damaged[b] plants (0-9)	Grain Development (0-9)
Maris Nimrod	532	1	1	3	3
Clarion	609	2	0	2	3
Starke	582	1	1	0	3
Centurk	1040	2	1	2	3
Zenith	570	3	0	2	4
Caribe	560	3	1	3	4
Sava	668	5	1	2	3
Vakka	641	2	1	1	4
Carifen 12	690	5	0	4	6
Jyva	534	2	2	2	3
Diplomat	552	2	1	2	2
Tam 102	650	3	1	1	3
Dacia	629	6	1	2	3
Probstdorfer Extrem	616	3	1	3	2
Blueboy	695	3	0	3	3
Hokuei	772	6	2	4	3
Moldova	632	5	1	3	3
Backa	512	7	1	3	3
Bezostaya 1	550	6	1	3	3
Rousalka	566	6	1	1	3
Zlatna dolina	521	7	1	3	3
Marimp 3	376	7	3	5	4
Atlas 66	457	8	3	5	4
Kirac 66	765	2	1	2	3
Lancota (NE701132)	778	4	2	2	3
Strampelli	365	7	2	5	5
C.I.15074	979	6	2	3	4
Victor I	240	8	5	6	4
Lerma Rojo 64	319	7	4	6	3
Lilifen	164	6	6	7	5
Mean	585.2	4.5	1.3	2.9	3.4
Coefficient of variation (%)	--	--	--	--	--
L.S.D. of cultivar means (.05)	--	--			
Local cultivar					
Zora	509	2	2	4	2

a) One rep only.
b) Plants damaged by dust storm, April 24, 1973.

ENGLAND

Cambridge

COOPERATOR(S): F. G. H. Lupton.

DATE OF PLANTING: October 17, 1972.

PRECIPITATION DURING CYCLE OF TEST: 334 mm.

AMOUNT OF IRRIGATION APPLIED: None.

FERTILIZER USED: 150 kg/ha (10-24-26) as N, P_2O_5, K_2O applied preplant. An additional 200 kg/ha of "Nitro 26" was applied postplant.

GENERAL DESCRIPTION OF CLIMATIC CONDITIONS DURING TEST: Mild, dry winter and a warm dry summer. Heavy rains occurred in mid-June and mid-July.

DISEASE DEVELOPMENT: Heavy mildew attack.

INSECT, WEED OR PEST PROBLEMS: None.

DATE OF HARVEST: August 16, 1973.

AREA HARVESTED FOR YIELD: 6.04 square meters.

DATES WHEN DIFFERENT NOTES WERE TAKEN:
Stripe rust - July 3, 1973
Height - July 30, 1973
Lodging - August 2, 1973
Mildew - June 21, 1973

Correlation coefficients for agronomic and grain quality traits of 30 cultivars in the Fifth International Winter Wheat Performance Nursery grown at Cambridge, England, 1973.

	Yield	Test weight	Protein	Flowering	Plant height
Test weight	.11				
Protein	-.38**	.32**			
Flowering	.23	.32	-.03		
Plant height	-.38**	.45**	.48**	.50**	
Lodging	-.40**	.02	.12	-.12	.53**

**Significant at the 5% level.

Table 11. Agronomic, grain quality, and disease data for the 30 cultivars in the Fifth International Winter Wheat Performance Nursery grown at Cambridge, England, 1973.

Cultivar	Yield q/ha	Test weight kg/hl	Protein %	Lysine[a] % of protein	Date of Flowering[a] days from Jan. 1	Date of Ripening[a] days from Jan. 1	Plant height cm	Lodging %	Stripe rust sev. %	Mildew[b] sev. %
Maris Nimrod	65.7	78.3	13.3	3.01	161	219	105	46	0	30
Starke	57.4	82.2	14.4	3.13	167	225	124	34	0	16
Sava	56.0	77.8	15.2	3.09	154	195	90	0	57	25
Zlatna dolina	53.4	77.8	14.1	2.84	155	200	88	0	3	32
Bezostaya 1	52.9	82.2	15.1	2.88	157	206	108	0	2	32
Caribo	52.5	79.3	13.6	2.97	162	212	115	20	0	26
Clarion	52.0	79.1	14.0	3.13	166	220	106	0	0	42
Backa	51.8	78.0	15.7	3.01	155	210	95	0	18	26
Carifen 12	51.0	72.1	13.1	3.02	158	200	89	0	0	21
Blueboy	50.5	78.1	13.0	3.06	159	214	109	18	1	37
Centurk	50.5	78.6	14.6	3.11	157	198	118	86	0	21
Dacia	49.5	78.9	16.8	2.92	157	203	115	5	0	40
Probstdorfer Extra	49.5	82.9	16.0	2.72	160	203	133	59	1	21
Zenith	49.2	81.8	16.1	2.91	166	210	111	13	0	31
Cilifen	49.2	77.7	14.9	3.05	157	214	98	0	0	46
Karimp 3	48.5	78.7	15.5	3.01	156	203	105	0	21	40
Victor I	47.6	78.0	14.0	2.83	154	203	90	0	0	41
Rousalka	47.2	79.1	15.0	3.01	151	202	88	0	0	32
Strampelli	46.3	79.9	14.3	2.84	153	198	103	36	0	30
Diplomat	45.3	82.4	15.0	3.02	163	222	116	0	0	42
Tam 102	44.0	77.5	13.0	3.02	155	198	98	1	13	49
Lancota (NE701132)	43.1	80.2	18.2	2.67	157	204	116	25	0	40
Moldova	42.8	78.2	16.8	2.94	155	202	116	19	0	41
Atlas 66	41.8	80.6	17.4	2.85	157	208	131	61	1	21
Lerma Rojo 64	39.6	77.3	15.7	2.91	150	199	105	63	0	46
C.I.15074	36.9	80.4	15.6	2.86	158	200	121	39	70	40
Hokuei	36.8	78.4	14.1	3.02	158	208	108	90	0	31
Jyva	36.1	78.0	17.1	2.94	167	220	127	25	8	26
Vakka	34.5	78.0	16.8	2.80	160	214	125	66	0	27
Kirac 66	31.3	76.7	14.8	3.12	159	208	128	93	0	32
Mean	47.1	79.0	15.1	2.96	158.1	207.3	109.3	27.6	6.5	32.8
Coefficient of variation (%)	8.0	1.1	3.1	--	--	--	2.8	75.0	--	--
L.S.D. of cultivar means (.05)	5.3	1.2	0.7	--	0	--	4.3	28.0	--	--

a) One rep only.
b) Two reps only.

FINLAND

Jokioinen

COOPERATOR(S): R. Manner.

DATE OF PLANTING: September 12, 1972.

PRECIPITATION DURING CYCLE OF TEST: 468 mm.

AMOUNT OF IRRIGATION APPLIED: None.

FERTILIZER USED: N = 150 kg/ha; P_2O_5 = 75 kg/ha; K_2O = 100 kg/ha.

GENERAL DESCRIPTION OF CLIMATIC CONDITIONS DURING TEST: Very rapid development.

DISEASE DEVELOPMENT: Very few diseases.

INSECT, WEED OR PEST PROBLEMS: None.

DATE OF HARVEST: July 31, 1973.

AREA HARVESTED FOR YIELD: 2.0 square meters.

DATES WHEN DIFFERENT NOTES WERE TAKEN:
Flowering - June 22 - 28, 1973
Ripeness - July 23 - August 1, 1973
Height - July 23, 1973
Lodging - July 23, 1973
Winter survival - May 14, 1973

Correlation coefficients for agronomic and grain quality traits of 30 cultivars in the Fifth International Winter Wheat Performance Nursery grown at Jokioinen, Finland, 1973.

	Yield	Flowering
Flowering	.02	
Winter survival	.84**	-.11

**Significant at the 1% level.

Table 12. Agronomic, grain quality, and disease data for the 30 cultivars in the Fifth International Winter Wheat Performance Nursery grown at Jokioinen, Finland, 1973.

Cultivar	Yield q/ha	Test weight kg/hl	Protein %	Lysine[a] % of protein	Date of Flowering: days from Jan. 1	Date of Ripening: days from Jan. 1	Plant height cm	Lodging %	Winter survival %
Clarion	53.8	79.7	15.1	3.09	178	207	74	2	100
Probstdorfer Extrem	50.9	82.0	16.5	2.79	173	205	98	5	98
Centurk	50.8	82.7	16.2	3.08	176	205	88	1	96
Hokuei	49.4	80.9	14.7	3.07	173	209	88	64	98
Starke	48.7	82.2	15.5	3.00	179	212	90	1	98
Maris Nimrod	48.5	76.5	15.2	3.03	178	209	76	2	98
Blueboy	48.3	79.0	14.5	3.13	176	206	85	0	99
Caribo	47.1	79.8	14.7	3.06	177	207	84	12	99
Jyva	46.8	79.4	17.0	2.89	177	208	89	30	98
Bezostaya 1	46.5	83.2	16.2	2.94	176	208	85	1	99
Vakka	44.7	79.2	16.5	2.87	174	207	91	56	98
Diplomat	44.5	82.7	16.6	3.06	176	211	80	0	99
Zenith	44.5	81.0	16.1	3.02	177	206	80	1	98
Moldova	39.4	79.0	18.6	3.01	175	205	91	7	99
Tam 102	35.5	78.7	15.4	3.07	176	204	65	0	94
C.I.15074	30.5	81.7	19.5	2.93	174	205	89	99	95
Rousalka	30.0	79.1	17.9	3.05	175	205	66	1	97
Dacia	29.5	78.0	20.6	2.93	175	205	85	1	96
Carifen 12	23.6	76.3	14.1	3.10	179	207	56	26	63
Lancota (NE701132)	19.9	80.0	19.9	2.79	177	205	84	33	95
Zlatna dolina	16.1	79.2	17.2	2.94	176	205	51	23	73
Kirac 66	14.5	81.2	18.0	2.85	178	207	80	93	56
Sava	12.3	78.2	17.5	3.04	174	206	56	1	69
Atlas 66	10.5	78.5	19.6	2.87	175	209	74	60	46
Backa	1.3	--	17.9	3.06	178	209	50	68	8
Strampelli	0.0	--	--	--	--	--	--	--	0
Victor I	0.0	--	--	--	--	--	--	--	0
Marimp 3	0.0	--	--	--	--	--	--	--	1
Lilifen	0.0	--	--	--	--	--	--	--	0
Lerma Rojo 64	0.0	--	--	--	--	--	--	--	0
Mean	29.6	79.9	16.8	2.99	176.0	206.9	78.2	23.5	76.0
Coefficient of variation (%)	23.8	--	--	--	0.1	--	--	--	20.9
L.S.D. of cultivar means (.05)	9.9	--	--	--	0.3	--	--	--	22.4

a) One rep only.

FRANCE

Orgerus

COOPERATOR(S): C. C. Benoist.

DATE OF PLANTING: November 7, 1972.

PRECIPITATION DURING CYCLE OF TEST: 510 mm.

AMOUNT OF IRRIGATION APPLIED: None.

FERTILIZER USED: N = 155 kg/ha (NH_4NO_3).

GENERAL DESCRIPTION OF CLIMATIC CONDITIONS DURING TEST: Mild weather during the winter without frost periods, dry spring, hot summer with storms. Storm at midharvest destroyed remainder of nursery.

DISEASE DEVELOPMENT: Mildew, stripe rust, stem rust and septoria were present.

INSECT, WEED OR PEST PROBLEMS: Not reported.

DATE OF HARVEST: August 1, 1973.

AREA HARVESTED FOR YIELD: 12 square meters.

DATES WHEN DIFFERENT NOTES WERE TAKEN:
Lodging - June 1 - July 7, 1973
Diseases - June 20, 1973

Table 13. Agronomic, grain quality, and disease data for the 30 cultivars in the Fifth International Winter Wheat Performance Nursery grown at Orgerus, France, 1973.[a]

Cultivar	Yield q/ha	Emergence[b] days from Jan. 1	Lodging[b] %	Aspect of[b] maturity	Stripe rust[b] sev. %	Mildew[b] resp.
Sava	83.0	148	0	Medium	0	M
Talent[c]	77.3	149	0	Very good	0	VR
Marimp 3	74.6	149	0	Medium	25	MR
Zlatna dolina	74.3	148	0	Medium	0	M
Dacia	74.0	148	60	Medium	0	VR
Victor I	73.9	148	0	Late	0	MS
Backa	70.8	145	0	Medium	0	MR
Rousalka	65.2	143	0	Medium	0	MS
Strampelli	64.8	146	30	Medium	0	S
Moldova	64.7	145	60	Fairly good	0	S[d]
Carifen 12	64.6	151	0	Fairly good	0	VS[d]
Centurk	64.3	158	80	Very good	25	M
Starke	56.9[b]	158	0	Very Late	0	VR
Tam 102	54.1	148	30	---	0	VS[d]
Lerma Rojo 64	43.4	140	5	---	0	MS
Probstdorfer Extrem	--	157	80	Very good	0	MS
Caribo	--	158	0	Fairly good	0	MS
C.I.15074	--	151	70	Good	65	M
Hokuei	--	154	0	Very good	0	MS[d]
Atlas 66	--	158	80	Very good	0	MR
Diplomat	--	158	0	---	0	VS
Blueboy	--	153	50	---	0	S[d]
Maris Nimrod	--	158	30	Fairly good	0	VR
Jyva	--	158	50	Good	10	M
Lancota (NE701132)	--	153	70	Good	0	MS
Bezostaya 1	--	153	0	Fairly good	25	S
Lilifen	--	154	0	---	0	VS[d]
Vakka	--	158	70	Good	0	MS[d]
Zenith	--	158	0	---	0	S
Clarion	--	158	0	---	0	VS
Kirac 66	--	158	90	---	0	MS

a) Storm at midharvest destroyed nursery.
b) One rep only.
c) Local cultivar.
d) Mildew on glumes.

HUNGARY

Martonvasar

COOPERATOR(S): S. Rajki; L. Balla.

DATE OF PLANTING: October 25, 1972.

PRECIPITATION DURING CYCLE OF TEST: 380 mm.

AMOUNT OF IRRIGATION APPLIED: None.

FERTILIZER USED: N = 85 kg/ha; P = 85 kg/ha; K = 85 kg/ha.

GENERAL DESCRIPTION OF CLIMATIC CONDITIONS DURING TEST: Favorable growing conditions in the fall with a long drought in the spring.

DISEASE DEVELOPMENT: Moderate mildew, stem rust and leaf rust infection.

INSECT, WEED OR PEST PROBLEMS: None.

DATE OF HARVEST: July 13 - 15, 1973.

AREA HARVESTED FOR YIELD: 1.8 square meters.

DATES WHEN DIFFERENT NOTES WERE TAKEN:
Mildew - June 21, 1973
Leaf firing - June 19, 1973
Lodging - June 26, 1973 (after 50 mm precipitation)
Leaf rust - July 3, 1973
Stem rust - July 10, 1973

Correlation coefficients for agronomic and grain quality traits of 30 cultivars in the Fifth International Winter Wheat Performance Nursery grown at Martonvasar, Hungary, 1973.

	Yield	Protein	Flowering	Ripening
Protein	-.15			
Flowering	.02	-.07		
Ripening	-.10	.06	.84**	
Plant height	.09	.34**	.45**	.51**

**Significant at the 1% level.

Table 14. Agronomic, grain quality, and disease data for the 30 cultivars in the Fifth International Winter Wheat Performance Nursery grown at Martonvasar, Hungary, 1973.

Cultivar	Yield q/ha	Test[b] weight kg/hl	Protein %	Lysine[a] % of protein	Date of Flowering (days from Jan. 1)	Date of Ripening (days from Jan. 1)	Plant height cm	Lodging[c] %	Shat-[b] tering %	Winter[a] survival %	Rust Leaf[a] Sev. %	Rust Leaf[a] Resp.	Rust Stem[a] Sev. %	Rust Stem[a] Resp.	Mildew[a] Sev. %	Leaf firing[a] 0-9
Probstdorfer Extrem	103.6	84.3	14.5	3.03	180	219	98	91	0	100	2	R	20	MR	60	5
Centurk	101.0	83.2	13.4	3.07	180	217	88	99	0	100	1	R	2	R	40	1
Carifen 12	96.8	75.1	12.1	3.30	181	218	72	0	0	80	5	R	10	MR	99	5
Bezostaya 1	96.8	84.9	13.5	3.05	179	219	86	50	2	80	0	0	2	R	60	1
Dacia	96.8	82.0	15.2	3.17	178	218	91	75	2	100	0	0	3	R	80	3
Lancota (NE701132)	96.7	83.4	16.2	2.91	179	220	90	99	0	100	1	R	0	0	70	3
Sava	95.7	81.4	14.1	3.09	177	217	77	0	1	60	0	0	1	R	60	1
Maris Nimrod	91.5	73.6	13.1	3.23	185	223	88	58	0	80	0	0	50	MS	90	3
Zenith	89.6	81.4	14.8	3.00	185	221	88	8	1	80	2	R	5	MR	60	3
Rousalka	88.9	82.8	14.5	2.92	172	216	72	0	1	100	0	0	1	R	70	1
Hokuei	88.5	81.5	12.6	3.09	180	220	87	91	2	100	5	R	25	MR	50	3
Blueboy	88.2	78.6	12.4	3.18	180	220	90	33	2	80	1	R	15	MS	99	1
Zlatna dolina	87.8	81.0	12.6	3.07	177	216	72	0	2	60	2	R	5	MR	60	1
Clarion	84.7	76.4	14.2	3.09	186	224	82	0	1	80	0	0	40	MS	80	3
Moldova	82.6	81.5	14.8	3.21	176	216	88	50	2	80	0	0	1	R	80	1
Jyva	82.4	77.8	14.6	3.16	186	226	88	0	1	80	5	R	25	MR	70	3
Tam 102	81.8	82.0	12.7	3.14	177	216	80	17	0	100	0	0	0	0	99	1
Caribo	81.5	76.6	13.8	3.18	185	223	91	42	2	100	2	R	35	MS	80	3
Backa	80.6	82.6	15.2	3.12	177	218	77	0	4	60	5	R	1	R	60	1
Vakka	80.4	78.1	14.8	3.09	185	220	88	8	4	100	0	0	5	MR	60	3
C.I.15074	80.3	82.4	15.9	3.01	179	217	94	83	1	100	1	R	10	MR	90	1
Atlas 66	78.3	81.9	17.4	2.98	180	221	99	58	2	40	1	R	15	MR	60	3
Starke	75.0	78.5	14.1	3.18	190	233	101	0	2	100	1	R	5	MR	40	5
Lilifen	73.7	78.4	13.9	3.16	180	222	74	0	0	40	1	R	0	0	90	3
Marimp 3	72.2	81.9	14.6	3.15	179	217	77	0	5	40	1	R	15	MR	80	1
Kirac 66	71.9	81.7	14.1	3.25	180	220	98	99	2	100	0	0	3	R	99	3
Victor I	71.8	80.9	13.5	3.24	179	216	67	0	1	40	1	R	0	0	70	1
Strampelli	71.8	82.0	13.4	3.03	174	214	72	33	2	20	0	0	0	0	50	1
Diplomat	70.1	70.8	14.1	3.14	187	226	94	0	10	100	2	R	10	MR	99	3
Lerma Rojo 64	59.4	81.1	15.3	3.00	172	216	81	83	0	20	0	0	0	0	70	1
Mean	84.0	80.3	14.2	3.11	180.1	219.6	84.9	35.9	1.7	77.3	1.3		10.1		72.5	2.3
Coefficient of variation (%)	6.9	--	1.4	--	0.6	0.3	5.2	--	--	--	--		--		--	--
L.S.D. of cultivar means (.05)	8.2	--	0.3	--	1.5	0.9	6.2	--	--	--	--		--		--	--

a) One rep only.
b) Two reps only.
c) Three reps only.

HUNGARY

Szeged

COOPERATOR(S): I. Szaniel; Z. Barabas.

DATE OF PLANTING: October 17, 1972.

PRECIPITATION DURING CYCLE OF TEST: 295 mm.

AMOUNT OF IRRIGATION APPLIED: None.

FERTILIZER USED: N = 50 kg/ha (NH_4NO_3); P_2O_5 = 36 kg/ha (monocalcium dihydrophosphate); K_2O = 40 kg/ha (potassium oxide).

GENERAL DESCRIPTION OF CLIMATIC CONDITIONS DURING TEST: Mild, dry winter and spring. The summer was slightly rainy.

DISEASE DEVELOPMENT: There was no leaf rust infection. The mildew attack was heavy.

INSECT, WEED OR PEST PROBLEMS: None.

DATE OF HARVEST: July 25, 1973.

AREA HARVESTED FOR YIELD: 5.5 square meters.

DATES WHEN DIFFERENT NOTES WERE TAKEN:
Height - June 21, 1973
Lodging - July 13, 1973
Mildew - June 27, 1973

Correlation coefficients for agronomic and grain quality traits of 30 cultivars in the Fifth International Winter Wheat Performance Nursery grown at Szeged, Hungary, 1973.

	Yield	Test weight	Protein	Flowering	Plant height
Test weight	.03				
Protein	.25**	.27**			
Flowering	-.13	-.11	.03		
Plant height	-.08	.45**	.22*	.24**	
Lodging	-.05	.23*	.55**	-.02	.32**

**Significant at the 1% level. *Significant at the 5% level.

Table 15. Agronomic, grain quality, and disease data for the 30 cultivars in the Fifth International Winter Wheat Performance Nursery grown at Szeged, Hungary, 1973

Cultivar	Yield q/ha	Test weight kg/hl	Protein %	Lysine[a] % of protein	Date of flowering days from Jan. 1	Plant height cm	Lodging %	Mildew 0-9
Zlatna dolina	69.3	79.1	12.6	3.08	142	80	8	3
Maris Nimrod	64.6	77.3	13.7	3.16	148	90	18	3
Sava	64.6	78.2	12.6	3.19	141	85	30	1
Probstdorfer Extrem	63.2	83.5	14.4	2.96	146	136	55	1
Rousalka	62.0	80.5	13.3	3.02	140	81	23	2
Clarion	60.1	77.4	11.8	3.25	151	95	5	3
Atlas 66	57.6	81.5	16.7	2.98	145	115	75	3
Hokuei	57.1	76.7	13.2	3.08	145	104	70	3
Lilifen	56.8	78.9	14.1	3.13	145	94	3	5
Dacia	56.5	80.5	12.2	2.97	144	103	60	3
Lancota (NE701132)	56.4	81.6	15.3	3.00	145	108	87	4
Carifen 12	56.3	69.2	12.8	3.25	147	80	0	4
Blueboy	55.9	78.3	11.6	3.16	145	104	8	3
C.I.15074	55.0	81.7	15.7	3.16	145	105	80	5
Centurk	55.0	81.4	15.8	3.27	146	103	90	3
Marimp 3	53.9	79.6	14.9	3.23	142	91	77	4
Bezostaya 1	51.0	82.8	13.8	2.94	144	95	65	3
Victor I	50.8	77.0	11.5	3.51	142	79	18	5
Diplomat	49.8	80.8	12.2	3.18	152	103	3	5
Backa	49.0	80.7	13.6	2.99	141	85	10	2
Moldova	48.1	79.0	14.7	3.03	142	103	87	4
Caribo	46.5	79.2	12.9	3.05	150	104	18	3
Tam 102	46.1	79.1	10.5	3.04	142	96	20	6
Strampelli	45.7	75.7	13.4	3.08	140	91	80	3
Lerma Rojo 64	45.5	76.6	13.8	3.01	139	95	62	4
Jyva	45.0	76.3	14.8	3.09	165	99	50	3
Starke	42.6	79.7	12.5	3.20	153	114	25	2
Zenith	41.8	80.7	12.2	3.11	149	104	10	2
Kirac 66	41.3	82.3	13.5	3.14	146	111	77	5
Vakka	39.6	77.8	12.0	3.11	154	111	57	2
Mean	52.9	79.1	13.4	3.11	145.9	98.7	42.2	3.4
Coefficient of variation (%)	19.6	0.8	6.8	--	2.9	7.9	69.6	--
L.S.D. of cultivar means (.05)	14.6	0.8	1.3	--	5.9	11.0	41.3	--

a) One rep only.

INDIA

Shalimar, Kashmir

COOPERATOR(S): J. N. Bhat; V. K. Padroo.

DATE OF PLANTING: December 2, 1972.

PRECIPITATION DURING CYCLE OF TEST: 220 mm.

AMOUNT OF IRRIGATION APPLIED: None.

FERTILIZER USED: N = 60 kg/ha (urea); P_2O_5 = 80 kg/ha (superphosphate); K_2O = 60 kg/ha (muriate of potash).

GENERAL DESCRIPTION OF CLIMATIC CONDITIONS DURING TEST: The weather was normal from December to June. From May onward there was no precipitation and the temperature went as high as 98° F.

DISEASE DEVELOPMENT: All three types of rust and Helminthosporium were present.

INSECT, WEED OR PEST PROBLEMS: Heavy attack of armyworm and a minor attack of aphids. Armyworms were sprayed with Sevin (50% W. P.) at a concentration of 0.15% on May 5 and 0.30% on May 25, 1973.

DATE OF HARVEST: June 19 - July 1, 1973.

AREA HARVESTED FOR YIELD: 1.84 square meters.

DATES WHEN DIFFERENT NOTES WERE TAKEN: Various notes were taken as applicable at four-day intervals from March 1 - June 30, 1973.

Correlation coefficients for agronomic and grain quality traits of 30 cultivars in the Fifth International Winter Wheat Performance Nursery grown at Shalimar, Kashmir, India, 1973.

	Yield	Flowering	Ripening	Plant height	Lodging
Flowering	-.69**				
Ripening	-.69**	.95**			
Plant height	-.16	.28**	.27**		
Lodging	-.05	-.06	.05	.25**	
Winter survival	.06	.12	.11	.09	.12

**Significant at the 1% level.

Table 16. Agronomic, grain quality, and disease data for the 30 cultivars in the Fifth International Winter Wheat Performance Nursery grown at Shalimar, Kashmir, India, 1973.

Cultivar	Yield q/ha	Date of Flowering (days from Jan. 1)	Date of Ripening (days from Jan. 1)	Plant height cm	Lodging %	Winter survival %	1000-Kernel weight gm	Rust: Stripe Sev. %	Rust: Stripe Resp.	Rust: Leaf Sev. %	Rust: Leaf Resp.	Rust: Stem Sev. %	Rust: Stem Resp.
Marimp 3	39.3	127	163	104	0	82	32	0	0	3	S	8	S
Lerma Rojo 64	37.8	122	158	106	0	84	41	0	0	0	0	0	0
Dacia	37.6	133	166	121	0	81	39	0	0	0	0	22	S
Rousalka	35.7	127	162	82	0	84	42	0	0	4	S	27	S
Backa	35.0	128	163	97	0	81	36	0	0	0	0	27	S
Tam 102	34.2	133	168	105	0	81	30	10	S	8	S	2	S
Victor I	32.1	128	163	85	0	81	32	0	0	0	0	0	0
Centurk	31.0	132	165	118	4	81	30	0	0-S	0	0	2	0-S
Strampelli	28.6	127	162	97	3	76	34	5	0-S	0	0	8	MR
Bezostaya I	27.4	131	167	101	0	81	43	2	S	0	0	1	MS
Zlatna dolina	27.1	128	164	82	0	79	32	0	0	0	0	13	S
Lancota (NE701132)	26.4	134	169	131	10	83	34	0	0	0	0	0	0
Atlas 66	25.7	135	167	147	0	83	31	11	S	0	0	0	0
Lilifen	24.0	144	176	100	0	83	34	0	0	0	0	0	0
C.I.15074	23.4	138	169	130	4	85	29	65	S	0	0	0	0-S
Moldova	21.6	123	161	114	0	81	40	0	0	0	0	13	S
Sava	20.6	128	164	83	0	80	26	0	0	5	S	37	S
Probstdorfer Extrem	19.8	148	172	131	0	87	28	18	S	5	0-S	50	0-S
Vakka	16.5	150	173	137	0	85	23	0	0	26	S	12	S
Hokuei	15.3	141	172	105	0	79	25	0	0	0	0	13	S
Maris Nimrod	14.9	149	175	103	0	81	24	0	0	18	S	41	S
Kirac 66	14.7	135	172	138	33	83	36	17	S	0	0	67	S
Diplomat	14.7	151	177	108	0	82	28	0	0	0	0	13	S
Carifen 12	14.1	147	173	78	0	88	22	0	0	11	S	62	S
Zenith	13.7	148	173	124	0	81	22	0	0	6	S	21	S
Blueboy	12.7	134	166	103	0	82	25	0	0	0	0	94	S
Clarion	12.1	149	174	102	0	81	20	0	0	6	S	26	S
Caribo	8.1	149	174	120	0	84	21	0	0	0	0-S	20	S
Jyva	3.6	150	177	124	0	81	18	0	0	32	S	52	S
Starke	3.2	153	179	108	0	80	13	0	0	10	S	23	S
Mean	22.4	137.2	168.8	109.3	2.8	81.9	29.7	4.3		4.2		21.8	
Coefficient of variation (%)	28.5	0.8	0.3	7.4	403.0	4.4	--	--		--		--	
L.S.D. of cultivar means (.05)	8.9	1.6	0.6	11.3	15.6	0.0	--	--		--		--	

INDIA

Simla

COOPERATOR(S): M. V. Rao; M. K. Upadhyay; B. Ram; R. Kumar.

DATE OF PLANTING: December 1, 1972.

PRECIPITATION DURING CYCLE OF TEST: 734 mm.

AMOUNT OF IRRIGATION APPLIED: Four irrigations.

FERTILIZER USED: N = 80 kg/ha (C.A.N.); P_2O_5 = 40 kg/ha (superphosphate); K_2O = 40 kg/ha.

GENERAL DESCRIPTION OF CLIMATIC CONDITIONS DURING TEST: In the month of June heavy rains occurred and late varieties were damaged. The yields of these varieties were reduced.

DISEASE DEVELOPMENT: The development of stripe rust was satisfactory. Incidence of stem rust was low. Leaf rust was not observed.

INSECT, WEED OR PEST PROBLEMS: None.

DATE OF HARVEST: June 1 - 29, 1973.

AREA HARVESTED FOR YIELD: 2.3 square meters.

DATES WHEN DIFFERENT NOTES WERE TAKEN:
Germination (%) - December 12, 1972
Flowering - April 6 - May 22, 1973
Maturity - May 2 - June 10, 1973
Winter survival - March 1, 1973
Height - May 2 and onwards, 1973
Diseases - April 6 - June 10, 1973

Correlation coefficients for agronomic and grain quality traits of 30 cultivars in the Fifth International Winter Wheat Performance Nursery grown at Simla, India, 1973.

	Yield	Protein	Flowering	Ripening	Plant height
Protein	-.26**				
Flowering	-.74**	.20*			
Ripening	-.76**	.28**	.96**		
Plant height	.25**	.13	-.41**	-.33**	
1000-kernel weight	.20*	-.18	-.02	-.07	-.12

**Significant at the 1% level. *Significant at the 5% level.

Table 17. Agronomic, grain quality, and disease data for the 30 cultivars in the Fifth International Winter Wheat Performance Nursery grown at Simla, India, 1973.

Cultivar	Yield q/ha	Protein %	Lysine[a] % of protein	Date of Flowering days from Jan. 1	Date of Ripening days from Jan. 1	Plant height cm	1000-Kernel weight gm	Rust: Stripe Sev. %	Rust: Stripe Resp.	Rust: Stem Sev. %	Rust: Stem Resp.
Marimp 3	20.4	12.2	3.22	108	134	82	32	2	0-MR	0	0
Zlatna dolina	18.4	14.9	3.26	111	139	63	31	27	S	0	0
Victor I	18.2	15.7	3.24	109	129	72	28	10	S	0	0
Lerma Rojo 64	17.9	14.3	3.15	96	122	89	31	0	0	0	0
Blueboy	16.6	16.4	3.00	109	142	85	30	7	MR-S	0	0
Backa	16.2	17.2	3.24	109	138	66	34	0	0	0	0
Strampelli	16.1	12.7	3.33	111	133	63	34	8	S	0	0
Centurk	15.7	18.2	3.15	112	142	81	24	10	S	0	0
Bezostaya 1	15.2	18.2	3.19	111	142	86	34	5	MR-S	0	0
Moldova	15.1	15.3	3.17	111	132	95	33	0	0	0	0
Rousalka	15.0	15.7	3.22	111	137	67	38	0	0	0	0
Atlas 66	13.6	19.8	2.99	108	141	104	28	27	MS-S	0	0
Sava	12.9	17.6	3.16	110	140	74	23	0	0	0	0
Dacia	12.2	16.8	3.15	112	141	76	32	0	0	0	0
Lancota (NE701132)	12.0	16.2	3.13	115	146	85	30	0	0	0	0
C.I.15074	10.3	18.3	2.95	118	155	94	29	57	S	0	0
Kirac 66	10.2	17.1	3.11	112	145	100	30	0	0	0	0
Tam 102	7.5	19.2	3.20	111	139	76	25	17	S	0	0
Lilifen	7.3	17.2	3.18	117	153	71	34	7	MR-S	0	0
Carifen 12	5.3	15.6	3.19	126	157	61	35	0	0	0	0
Zenith	5.1	19.5	2.94	132	162	74	29	0	0	0	0
Caribo	4.2	20.3	2.76	128	158	81	31	0	0	0	0
Probstdorfer Extrem	4.2	19.3	2.73	124	158	88	31	0	0	0	0
Maris Nimrod	4.1	18.0	3.11	132	162	75	33	0	0	0	0
Hokuei	4.1	20.1	2.99	120	156	79	29	8	MR-S	0	0
Clarion	3.6	20.0	3.09	132	173	66	31	0	0	10	S
Vakka	3.3	20.3	2.87	133	168	63	29	0	0	0	0
Jyva	1.7	14.8	2.86	138	172	65	29	0	0	55	S
Diploma	1.4	14.9	2.96	137	170	61	31	0	0	0	0
Starke	0.4	18.9	3.00	142	180	70	23	0	0	12	S
Mean	10.3	17.2	3.08	118.2	148.9	77.1	30.4	6.2		2.6	
Coefficient of variation (%)	34.3	20.7	--	1.4	0.8	4.9	9.5	--		--	
L.S.D. of cultivar means (.05)	5.0	NS	--	2.3	1.6	5.3	4.1	--		--	

a) One rep only.

IRAN

Hamadan

COOPERATOR(S): H. Kaveh; M. A. Vahabian; T. Mahlooji; N. Safaii.

DATE OF PLANTING: October 13, 1972.

PRECIPITATION DURING CYCLE OF TEST: 196 mm.

AMOUNT OF IRRIGATION APPLIED: Irrigated six times with approximately 600-700 m^3 of water per irrigation.

FERTILIZER USED: N = 120 kg/ha (urea); P_2O_5 = 60 kg/ha (triple superphosphate).

GENERAL DESCRIPTION OF CLIMATIC CONDITIONS DURING TEST: Very cold winter with snow cover.

DISEASE DEVELOPMENT: None.

INSECT, WEED OR PEST PROBLEMS: Thrips.

DATE OF HARVEST: July 10, 1973.

AREA HARVESTED FOR YIELD: 3.0 square meters.

DATES WHEN DIFFERENT NOTES WERE TAKEN: Not reported.

Correlation coefficients for agronomic and grain quality traits of 30 cultivars in the Fifth International Winter Wheat Performance Nursery grown at Hamadan, Iran, 1973.

	Yield	Protein	Flowering	Ripening	Plant height	Shattering
Protein	-.19*					
Flowering	.01	.05				
Ripening	.11	-.03	.81**			
Plant height	.11	.01	.01	.08		
Shattering	-.06	.07	-.30**	-.30**	-.09	
Winter survival	.18*	.29**	.19*	.26**	.26**	-.24**

**Significant at the 1% level. *Significant at the 5% level.

Iran, 1973.

Cultivar	Yield q/ha	Protein %	Lysine[a] % of protein	Date of Flowering (days from Jan. 1)	Date of Ripening (days from Jan. 1)	Plant height cm	Shattering %	Winter survival %
Hokuei	46.0	12.4	2.93	134	174	79	3	97
Blueboy	44.8	12.8	3.10	134	174	79	1	97
Tam 102	41.5	12.5	3.00	131	173	76	4	98
Maris Nimrod	41.2	12.6	3.07	143	178	67	0	96
Caribo	41.1	13.3	3.02	144	176	82	0	97
Sava	40.6	12.6	3.17	132	173	59	0	96
Carifen 12	40.0	12.5	3.14	139	175	62	0	96
Bezostaya 1	39.5	12.2	3.06	133	174	83	0	97
Clarion	38.2	11.9	3.23	145	179	66	1	95
Kirac 66	38.1	14.4	3.06	134	174	83	1	97
Lilifen	37.9	12.7	3.12	136	174	63	2	94
Backa	37.5	13.8	3.03	132	174	71	4	93
Rousalka	37.3	13.0	3.08	127	171	65	4	96
Moldova	37.2	13.0	3.03	128	172	83	5	97
Centurk	36.6	12.8	3.01	132	173	75	0	96
Zenith	36.3	12.2	3.08	142	178	67	0	97
C.I.15074	36.1	15.1	2.89	133	174	80	0	98
Dacia	36.0	13.8	2.96	130	173	79	4	97
Lancota (NE701132)	35.9	14.2	2.93	132	173	81	2	96
Diplomat	35.7	14.8	3.04	144	178	70	3	96
Marimp 3	35.5	15.0	3.10	132	173	69	4	93
Vakka	35.4	14.2	3.05	135	177	80	0	96
Lerma Rojo 64	35.1	14.3	2.91	127	168	69	4	86
Jyva	35.0	13.7	3.13	143	177	75	5	96
Strampelli	35.0	12.0	2.80	127	172	72	6	93
Starke	34.8	14.1	3.14	150	180	77	0	97
Victor I	33.8	12.3	3.08	130	173	64	3	94
Zlatna dolina	33.8	13.4	3.14	131	173	61	3	97
Probstdorfer Extrem	33.5	14.0	2.70	139	175	87	3	96
Atlas 66	29.5	14.7	3.07	133	173	87	0	94
Mean	37.3	13.4	3.04	135.0	174.3	73.6	2.0	95.5
Coefficient of variation (%)	14.9	10.7	--	2.3	0.8	9.2	87.8	2.6
L.S.D. of cultivar means (.05)	7.8	2.0	--	4.3	2.0	9.6	2.4	3.4
Local cultivars								
Roshan	46.0			129	175	91	0	97
Omid	45.9			133	178	96	1	97

a) One rep only.

IRAN

Karaj

COOPERATOR(S): H. Kaveh; T. Mahlooji

DATE OF PLANTING: October 29, 1972.

PRECIPITATION DURING CYCLE OF TEST: 227.9 mm.

AMOUNT OF IRRIGATION APPLIED: About 700 - 800 m^3 per irrigation.

FERTILIZER USED: N = 120 kg/ha (urea) P_2O_5 = 60 kg/ha (triple superphosphate).

GENERAL DESCRIPTION OF CLIMATIC CONDITIONS DURING TEST: Cold winter with snow cover and normal rainfall; dry spring.

DISEASE DEVELOPMENT: None reported.

INSECT, WEED OR PEST PROBLEMS: None reported.

DATE OF HARVEST: Not reported.

AREA HARVESTED FOR YIELD: 4.875 square meters.

DATES WHEN DIFFERENT NOTES WERE TAKEN: None reported.

Correlation coefficients for agronomic and grain quality traits of 30 cultivars in the Fifth International Winter Wheat Performance Nursery grown at Karaj, Iran, 1973.

	Yield	Protein	Flowering	Ripening	Plant height
Protein	-.09				
Flowering	-.24**	.02			
Ripening	-.24**	-.03	.64**		
Plant height	-.09	.46**	.19*	.22*	
Shattering	-.05	.07	-.20*	-.20*	-.14

**Significant at the 1% level. *Significant at the 5% level.

Table 19. Agronomic, grain quality, and disease data for the 30 cultivars in the Fifth International Winter Wheat Performance Nursery grown at Karaj, Iran, 1973.

Cultivar	Yield q/ha	Protein %	Lysine[a] % of protein	Date of Flowering (days from Jan. 1)	Date of Ripening (days from Jan. 1)	Plant height cm	Shattering %	Stem rust Sev. %	Stem rust Resp.
Strampelli	43.7	9.7	3.19	121	171	99	13	0	0
Blueboy	42.7	10.1	3.40	132	174	105	3	11	0-S
Tam 102	41.2	10.1	3.40	132	172	104	1	15	0-S
Sava	40.8	9.9	3.10	131	171	88	0	8	0-S
Centurk	40.5	10.7	3.47	133	172	113	4	0	0
Lerma Rojo 64	38.4	10.6	3.10	119	167	97	0	0	0
Carifen 12	38.2	9.4	3.47	136	177	85	0	36	S
Maris Nimrod	37.8	10.3	3.35	136	178	103	0	17	S
Clarion	37.1	9.8	3.22	136	180	100	0	13	S
Dacia	36.9	11.5	3.34	128	170	114	9	5	0-S
Bezostaya 1	36.9	10.8	3.01	132	171	100	0	5	0-S
Backa	36.4	11.5	3.41	124	171	96	8	21	S
Rousalka	35.9	11.0	3.23	127	168	86	5	13	S
Hokuei	35.9	10.1	3.15	133	176	96	0	13	S
Moldova	35.9	11.2	3.33	123	168	109	9	2	0-S
Lancota (NE701132)	35.1	11.2	3.07	132	171	111	3	0	0
Kirac 66	35.1	11.5	3.40	133	174	121	0	2	0-S
Lilifen	34.9	10.7	3.29	133	176	95	8	7	0-S
Victor I	34.3	10.7	3.22	127	169	89	30	2	0-S
Marimp 3	33.5	10.8	3.25	126	174	102	14	11	0-S
C.I.15074	33.4	12.1	3.46	133	173	116	10	2	0-S
Caribo	33.0	9.3	3.27	136	177	108	0	30	S
Zlatna dolina	32.9	10.3	3.41	130	169	81	19	15	0-S
Zenith	32.1	11.2	3.21	134	177	106	0	21	S
Probstdorfer Extrem	31.8	11.6	3.08	136	175	119	0	7	0-S
Vakka	29.8	11.5	3.06	136	176	115	23	10	S
Atlas 66	28.8	12.0	3.23	132	175	126	5	2	0-S
Jyva	25.4	11.4	3.30	136	177	106	3	7	0-S
Starke	24.7	11.0	3.55	136	181	114	1	7	0-S
Diplomat	21.6	11.5	3.28	136	180	103	0	17	S
Mean	34.8	10.8	3.28	131.2	173.6	103.5	5.5	10.0	
Coefficient of variation (%)	15.6	7.7	--	2.3	1.6	5.4	106.4	--	
L.S.D. of cultivar means (.05)	7.6	1.2	--	4.3	3.9	7.8	8.2	--	
Local cultivars									
Dayhim	44.3	10.0	3.22	136[a]	176[a]	--	--	0	0[a]
21863	43.4	10.6	3.29	136[a]	174[a]	--	--	10	S[a]
Cwid	36.3	9.4	3.38	136[a]	176[a]	--	--	10	S[a]

a) One rep only.

IRAQ

Sulaimaniya

COOPERATOR(S): A. I. Alaka; M. A. Aziz.

DATE OF PLANTING: October 23, 1972.

PRECIPITATION DURING CYCLE OF TEST: 662 mm.

AMOUNT OF IRRIGATION APPLIED: None.

FERTILIZER USED: 400 kg/ha of the compound (18-18-5).

GENERAL DESCRIPTION OF CLIMATIC CONDITIONS DURING TEST: Normal in the beginning of the season. No rain between April 20 - May 10 and a dry late season too.

DISEASE DEVELOPMENT: None.

INSECT, WEED OR PEST PROBLEMS: Weeded once by hand.

DATE OF HARVEST: June 18, 1973.

AREA HARVESTED FOR YIELD: 3 square meters.

DATES WHEN DIFFERENT NOTES WERE TAKEN:
Height - June 1, 1973
Lodging - June 1 - June 18, 1973
Shattering - June 1 - June 18, 1973
Winter injury (survival) - March 15, 1973

Correlation coefficients for agronomic and grain quality traits of 30 cultivars in the Fifth International Winter Wheat Performance Nursery grown at Sulaimaniya, Iraq, 1973.

	Yield	Protein	Flowering	Ripening
Protein	-.29**			
Flowering	-.44**	.35**		
Ripening	-.40**	.37**	.87**	
Plant height	.00	.43**	-.10	-.11

**Significant at the 1% level.

Table 20. Agronomic, grain quality, and disease data for the 30 cultivars in the Fifth International Winter Wheat Performance Nursery grown at Sulaimaniya, Iraq, 1973.

Cultivar	Yield q/ha	Protein %	Lysine[a] % of protein	Date of Flowering (days from Jan. 1)	Date of Ripening (days from Jan. 1)	Plant height cm	Winter injury 0-5
Rousalka	36.6	10.4	3.10	108	146	94	1
Backa	35.7	10.8	3.20	118	144	105	1
Strampelli	35.0	9.2	2.99	112	145	106	1
Victor I	33.0	10.2	3.23	109	145	96	2
Kirac 66	30.6	12.1	3.19	123	160	134	1
Lilifen	29.8	10.6	3.12	127	163	100	1
Maris Nimrod	29.4	9.9	3.23	133	163	98	1
Tam 102	29.4	9.9	3.19	126	158	103	1
Dacia	29.2	10.9	3.14	123	153	121	1
Zlatna dolina	29.2	10.5	3.28	111	149	84	0
Marimp 3	29.0	10.5	3.21	115	147	105	2
Zenith	28.9	11.2	3.16	133	165	99	2
Sava	28.4	10.0	3.24	115	150	96	1
Bezostaya 1	27.8	10.6	3.04	125	153	109	1
Clarion	27.8	10.9	3.21	135	166	94	1
Centurk	27.2	9.5	3.20	124	152	111	1
Blueboy	26.9	9.2	2.73	122	152	113	0
Moldova	26.6	11.0	3.28	106	146	128	1
Caribo	25.7	10.9	3.24	130	164	110	1
Diplomat	25.3	11.9	3.32	133	165	101	1
Lancota (NE701132)	25.3	11.4	3.08	122	153	121	1
Hokuei	24.3	10.0	3.17	127	160	104	1
C.I.15074	24.3	11.8	3.22	127	157	115	0
Lerma Rojo 64	23.9	10.1	3.13	104	146	109	2
Probstdorfer Extrem	23.9	11.6	3.03	130	162	118	0
Carifen 12	23.1	10.4	3.37	133	161	78	1
Atlas 66	20.4	13.2	3.26	123	152	135	2
Vakka	19.8	11.2	3.19	134	165	108	1
Jyva	18.3	12.3	3.25	134	165	105	2
Starke	10.4	11.8	3.35	143	169	99	1
Mean	26.9	10.8	3.18	123.4	155.8	106.5	1.0
Coefficient of variation (%)	14.3	4.2	--	1.8	2.0	4.4	--
L.S.D. of cultivar means (.05)	5.4	0.6	--	3.2	4.3	6.6	--

a) One rep only.

ITALY

Florence

COOPERATOR(S): M. C. Scalfati; M. Gasparini.

DATE OF PLANTING: October 17, 1972.

PRECIPITATION DURING CYCLE OF TEST: None reported.

AMOUNT OF IRRIGATION APPLIED: None.

FERTILIZER USED: At planting: 150 kg/ha (18-46-9) and 100 kg/ha (4-20-18). Topdressed with nitrogen at 26.5 kg/ha and 100 kg/ha (11-20-18).

GENERAL DESCRIPTION OF CLIMATIC CONDITIONS DURING TEST: Temperatures within medium limits without intense cold or frost. Good spring rains and accentuated summer dryness.

DISEASE DEVELOPMENT: Year of little disease development.

INSECT, WEED OR PEST PROBLEMS: No big problem with insects, but a small problem with birds.

DATE OF HARVEST: July 23, 1973.

AREA HARVESTED FOR YIELD: 3.0 square meters.

DATES WHEN DIFFERENT NOTES WERE TAKEN:

Test weight - August 27, 1973
Flowering - According to varieties
Ripening - According to varieties
Height - July 23, 1973
Lodging - July 23, 1973
Shattering - August 6, 1973 (border rows)
Plant number - December 11, 1972
Rusts - July 19, 1973

Correlation coefficients for agronomic and grain quality traits of 30 cultivars in the Fifth International Winter Wheat Performance Nursery grown at Florence, Italy, 1973.

	Yield	Test weight	Protein	Flowering	Ripening	Plant height
Test weight	.01					
Protein	-.03	.52**				
Flowering	.05	-.37**	-.34**			
Ripening	.25**	-.38**	-.24**	.82**		
Plant height	.23*	.32**	.31**	.13	.34**	
Lodging	-.23*	.03	.39**	-.06	.01	.38**

**Significant at the 1% level. *Significant at the 5% level.

Table 21. Agronomic, grain quality, and disease data for the 30 cultivars in the Fifth International Winter Wheat Performance Nursery grown at Florence, Italy, 1973.

Cultivar	Yield q/ha	Test weight kg/hl	Protein %	Lysine[a] % of protein	Date of Flowering days from Jan. 1	Date of Ripening days from Jan. 1	Plant height cm	Lodging %	Rust Leaf Sev. %	Rust Leaf Resp.	Rust Stem Sev. %	Rust Stem Resp.	Number of[c] heads/ linear meter	Number of[b] plants/ linear meter	Number of[c] plants/ linear meter
Maris Nimrod	49.0	73.1	8.4	2.83	156	202	96	0	3	O-M	2	MR-M	109	76	65
Clarion	48.0	75.1	9.3	2.93	161	203	96	0	5	R-M	9	M-S	122	80	72
Zenith	42.5	77.5	10.0	2.84	160	200	95	0	5	R-M	9	M-S	122	79	68
Strampelli	39.4	76.9	8.9	2.89	150	190	92	13	0	O-R	0	O-M	123	90	71
Lilifen	38.4	75.2	9.7	3.05	156	200	89	0	0	O-VR	0	0	116	76	68
Victor I	38.1	77.2	10.1	3.28	149	191	81	0	13	VR-M	0	0	119	87	67
Sava	37.3	76.2	9.7	3.05	152	193	82	0	0	O-M	0	O-M	135	84	64
Carifen 12	37.3	71.6	9.7	3.09	160	199	70	0	21	MR-M	6	MR-M	159	80	76
Caribo	35.6	74.9	8.9	2.82	160	201	98	0	52	MR-MS	3	O-S	124	82	70
Probstdorfer Extrem	35.6	80.7	10.4	2.79	156	197	119	6	0	O-VR	0	O-M	121	78	65
Diplomat	34.6	76.4	9.8	2.78	159	202	96	0	41	M	1	M	112	62	64
Zlatna dolina	32.3	76.5	9.9	3.05	154	192	75	0	3	VR-M	6	O-S	127	75	62
Marimp 3	32.1	78.2	10.3	2.94	155	193	90	0	0	O-MR	0	0	107	72	59
Moldova	30.6	77.1	11.2	2.97	150	189	112	23	0	O-M	0	0	125	90	65
Blueboy	30.6	73.6	8.9	2.85	155	197	102	0	2	VR-M	3	O-M	147	87	74
Backa	30.2	79.3	10.3	3.06	152	191	84	0	6	VR-M	2	O-S	111	87	74
Bezostaya 1	30.1	78.2	10.4	2.65	156	196	92	4	0	O-MS	0	O-S	103	78	65
Rousalka	29.0	78.9	10.9	3.05	148	188	75	0	0	O-R	0	O-MR	110	79	64
C.I.15074	28.6	80.5	10.6	2.83	156	196	107	1	0	O-M	0	0	153	73	64
Jyva	28.3	75.0	8.9	3.01	161	200	95	0	3	MR-M	9	M-S	101	70	57
Dacia	28.3	77.1	10.2	2.93	153	191	99	0	0	0	0	0	122	84	69
Atlas 66	26.9	77.6	12.2	3.02	153	198	121	55	3	VR-M	0	O-R	142	73	56
Starke	26.4	75.9	9.2	2.92	164	206	105	0	30	MR-M	8	VR-M	105	75	61
Centurk	26.2	76.8	9.1	3.09	154	193	91	25	0	O-VR	0	O-R	155	87	67
Lancota (NE701132)	25.9	79.2	11.2	3.12	153	195	103	1	0	O-MS	0	O-M	142	72	64
Hokuei	25.3	78.9	9.4	2.70	156	198	88	0	1	VR-M	9	MR-M	109	76	62
Vakka	24.3	75.9	9.4	2.97	160	200	99	0	2	VR-S	2	O-M	103	70	60
Lerma Rojo 64	23.5	77.9	11.1	3.04	145	188	84	0	0	0	0	0	159	94	67
Tam 102	20.4	74.9	9.1	2.92	154	190	83	1	0	O-M	0	0	113	74	62
Kirac 66	16.0	76.3	11.1	3.03	156	198	107	76	14	R-MS	3	O-S	128	77	57
Mean	31.7	76.8	10.0	2.95	155.0	196.0	94.0	7.0	8.7		2.7		124.0	79.0	65.0
Coefficient of variation (%)	25.3	1.5	7.6	--	1.4	0.9	7.6	196.4	--		--		--	--	--
L.S.D. of cultivar means (.05)	11.3	1.6	1.1	--	3.0	2.4	10.0	18.7	--		--		--	--	--

a) One rep only.
b) Notes taken December, 1972.
c) Notes taken July, 1973.

ITALY

Milano

COOPERATOR(S): Basilio Borghi; M. C. Scalfati.

DATE OF PLANTING: October 24, 1972.

PRECIPITATION DURING CYCLE OF TEST: 635 mm.

AMOUNT OF IRRIGATION APPLIED: None.

FERTILIZER USED: N = 140 kg/ha; P_2O_5 = 100 kg/ha; K_2O = 100 kg/ha.

GENERAL DESCRIPTION OF CLIMATIC CONDITIONS DURING TEST: Not reported.

DISEASE DEVELOPMENT: Not reported.

INSECT, WEED OR PEST PROBLEMS: Insect: Lema melanopa L. (larva).

DATE OF HARVEST: July 9, 1973.

AREA HARVESTED FOR YIELD: 5 square meters.

DATES WHEN DIFFERENT NOTES WERE TAKEN: Not reported.

Correlation coefficients for agronomic and grain quality traits of 30 cultivars in the Fifth International Winter Wheat Performance Nursery grown at Milano, Italy, 1973.

	Yield	Test weight	Protein	Flowering	Ripening	Plant height	Lodging
Test weight	.18*						
Protein	-.43**	-.01					
Flowering	-.43**	-.41**	.34**				
Ripening	-.36**	-.07	.35**	.57**			
Plant height	-.29**	.12	.42**	.38**	.32**		
Lodging	-.32**	-.07	.42**	.11	.07	.42**	
Winter survival	-.02	.04	.08	-.04	-.04	.08	.10

**Significant at the 1% level.

*Significant at the 5% level.

Table 22. Agronomic, grain quality, and disease data for the 30 cultivars in the Fifth International Winter Wheat Performance Nursery grown at Milano, Italy, 1973.

Cultivar	Yield q/ha	Test weight kg/hl	Protein %	Lysine[a] % of protein	Date of Flowering	Date of Ripening	Plant height cm	Lodging %	Winter survival %	Mildew sev. %
					days from Jan. 1					
Rousalka	46.9	72.1	14.0	2.88	128	183	90	35	74	20
Zlatna dolina	38.3	70.8	13.2	2.71	132	182	83	68	91	0
Blueboy	36.5	67.7	13.3	2.55	138	184	110	99	86	94
Bezostaya 1	34.8	72.9	15.4	2.76	138	184	98	94	98	34
Moldova	33.0	69.1	17.0	2.70	131	180	109	97	86	77
Probstdorfer Extrem	31.9	73.3	16.9	2.58	147	186	119	99	78	0
Backa	31.5	70.8	16.7	2.86	134	180	94	99	96	17
Sava	31.1	69.1	15.6	2.77	136	181	90	92	84	20
Dacia	30.9	71.1	14.9	2.62	135	182	115	97	82	40
Strampelli	30.3	68.2	13.8	2.70	131	181	99	99	86	57
Lilifen	30.1	69.5	15.2	2.82	138	187	103	50	83	64
Victor I	29.4	68.5	15.7	2.67	133	183	89	81	77	72
Carifen 12	28.4	61.5	13.1	2.82	147	181	87	38	81	67
Lerma Rojo 64	27.6	69.9	15.5	2.78	126	182	92	99	67	70
Marimp 3	27.3	69.1	16.4	2.85	135	184	99	99	66	35
Centurk	27.2	72.8	15.0	2.85	138	184	102	97	86	15
Maris Nimrod	27.1	59.5	16.8	2.62	147	188	107	99	86	32
Zenith	27.1	66.0	16.9	2.68	148	189	106	99	75	27
Vakka	26.9	66.1	16.7	2.77	148	182	118	99	88	45
Hokuei	26.8	68.0	14.1	2.83	138	185	105	84	77	47
Tam 102	26.7	62.7	14.9	2.69	136	182	99	97	98	42
Lancota (NE701132)	25.2	73.6	17.1	2.73	138	185	108	97	87	37
C.I.15074	24.7	74.9	18.2	2.97	139	187	114	92	96	55
Caribo	24.1	64.8	16.4	2.73	148	188	106	97	91	70
Atlas 66	24.1	74.2	18.7	2.64	138	187	117	85	95	32
Jyva	21.5	67.2	17.3	2.93	147	188	113	97	92	62
Starke	19.5	68.6	16.7	2.73	153	188	114	90	69	10
Clarion	18.3	62.4	17.5	2.72	148	188	105	97	85	77
Kirac 66	16.6	71.7	14.9	2.79	138	189	119	99	91	89
Diplomat	13.6	68.1	16.7	2.76	149	188	102	90	72	89
Mean	27.9	68.8	15.8	2.75	139.3	184.5	103.7	88.7	84.0	46.5
Coefficient of variation (%)	23.9	2.7	6.4	--	0.7	1.1	6.3	15.9	11.3	--
L.S.D. of cultivar means (.05)	9.4	2.6	1.4	--	1.4	2.8	9.2	19.8	13.3	--

a) One rep only.

ITALY

Rieti

COOPERATOR(S): G. Zitelli.

DATE OF PLANTING: November 28, 1972.

PRECIPITATION DURING CYCLE OF TEST: 517 mm.

AMOUNT OF IRRIGATION APPLIED: None.

FERTILIZER USED: N = 54 kg/ha; P = 66 kg/ha; K = 48 kg/ha.

GENERAL DESCRIPTION OF CLIMATIC CONDITIONS DURING TEST: The weather conditions were good.

DISEASE DEVELOPMENT: Some leaf rust, stem rust, mildew and septoria.

INSECT, WEED OR PEST PROBLEMS: None.

DATE OF HARVEST: Two days after each variety was considered ripe.

AREA HARVESTED FOR YIELD: 3.0 square meters.

DATES WHEN DIFFERENT NOTES WERE TAKEN: Not reported.

Correlation coefficients for agronomic and grain quality traits of 30 cultivars in the Fifth International Winter Wheat Performance Nursery grown at Rieti, Italy, 1973.

	Yield	Test weight	Protein	Flowering	Ripening	Plant height	Lodging
Test weight	.66**						
Protein	.10	.43**					
Flowering	-.63**	-.79**	-.32**				
Ripening	-.42**	-.49**	-.04	.81**			
Plant height	-.35**	-.10	.29	.32**	.48**		
Lodging	-.12	.18	.58**	-.12	-.12	.45**	
Shattering	.24**	.35**	.12	-.28**	-.28**	-.11	-.13

**Significant at the 1% level.

Table 23. Agronomic, grain quality, and disease data for the 30 cultivars in the Fifth International Winter Wheat Performance Nursery grown at Rieti, Italy, 1973.

Cultivar	Yield q/ha	Test weight kg/hl	Protein %	Lysine[a] % of protein	Date of Flowering days from Jan. 1	Date of Ripening days from Jan. 1	Plant height cm	Lodging %	Shattering %	Rust Leaf Sev. %	Rust Leaf Resp.	Rust Stem Sev. %	Rust Stem Resp.	Mildew Sev. %	Septoria Sev. %
Marimp 3	54.3	82.8	13.2	3.09	142	185	102	0	23	92	MR-MS	17	0-R	50	31
Lerma Rojo 64	54.0	83.7	13.3	2.98	137	184	102	31	30	0	0	0	0	50	50
Zlatna dolina	53.7	80.3	12.8	3.11	142	185	72	0	30	0	0	12	MR	31	25
Rousalka	53.5	83.0	13.7	3.04	139	187	87	0	30	10	MR-MS	52	0-MS	50	0
Bezostaya 1	52.8	84.8	13.3	3.01	144	191	109	0	26	25	MR-MS	55	MS	0	37
Dacia	51.0	82.0	13.5	3.01	142	189	114	31	29	22	MR	75	MS	31	6
Lilifen	50.3	79.7	13.8	3.09	147	194	99	0	28	20	R	20	R	62	0
Strampelli	48.7	82.8	12.4	3.10	139	185	97	19	43	20	MR	0	0	25	0
Moldova	48.3	81.6	14.8	2.95	139	185	109	0	35	27	MR	72	MS	31	43
Victor I	47.7	81.7	12.3	3.01	142	185	97	0	18	32	R	0	0	0	0
Sava	47.6	80.0	11.3	3.12	142	185	95	0	26	32	MR	60	0-MS	25	25
Lancota (NE701132)	45.4	82.7	14.2	2.87	143	190	112	44	29	50	MS	10	R	25	0
Backa	45.3	82.3	11.9	3.09	140	185	101	0	28	99	MS	94	MS	31	0
Maris Nimrod	45.0	72.9	11.7	3.14	151	197	106	6	11	89	MS	96	MS	0	31
Blueboy	43.2	74.4	10.6	3.07	145	192	113	13	29	94	MS	69	0-MS	0	0
Atlas 66	41.8	80.4	15.8	3.02	145	191	121	81	21	20	R-MR	47	MS	0	0
Hokuei	41.0	78.7	11.8	3.02	145	190	98	19	14	89	MS	92	MS	25	0
Diplomat	40.6	80.5	12.2	2.88	151	198	110	0	40	99	MR-MS	45	0-MS	0	0
Clarion	40.4	69.8	12.2	3.14	151	196	105	0	13	76	MS	96	MS	25	25
Centurk	40.3	80.0	14.6	3.14	143	191	109	81	21	0	0	0	0	0	50
Probstdorfer Extrem	38.5	80.4	14.1	2.83	147	192	121	38	10	72	MS	32	MR	6	18
Carifen 12	37.1	67.5	10.9	2.95	149	188	85	0	14	89	MS	69	0-MS	0	0
Tam 102	36.2	78.2	11.5	3.05	142	184	96	0	6	0	0	25	0-MR	31	43
Caribo	35.1	71.0	11.4	2.88	151	193	111	19	17	89	MS	72	0-MS	0	31
Zenith	34.1	73.0	11.9	3.10	151	192	104	0	26	96	MS	72	0-MS	25	0
C.I.15074	33.0	82.8	14.3	3.06	145	192	114	31	28	0	0	89	MR-MS	0	31
Kirac 66	28.1	79.0	14.3	3.04	145	190	118	87	20	40	MS	37	0-MS	43	31
Vakka	24.1	69.2	12.8	3.11	151	193	115	19	28	89	MS	74	0-MS	25	0
Starke	21.6	66.0	11.8	3.22	156	198	119	0	18	99	MS	74	0-MS	31	0
Jyva	17.9	68.1	12.3	3.09	151	191	112	0	24	89	MS	64	0-MS	25	0
Mean	41.7	78.0	12.8	3.04	145.0	189.7	105.1	17.2	23.6	52.0		50.7		21.6	15.9
Coefficient of variation (%)	11.7	2.1	5.7	--	0.6	0.6	4.2	71.4	31.1	--		--		--	--
L.S.D. of cultivar means (.05)	6.9	2.4	1.0	--	1.3	1.5	6.2	17.3	10.3	--		--		--	--

a) One rep only.

JAPAN

Morioka

COOPERATOR(S): T. Gotoh; H. Fujiwara.

DATE OF PLANTING: September 23, 1972.

PRECIPITATION DURING CYCLE OF TEST: 650 mm.

AMOUNT OF IRRIGATION APPLIED: None.

FERTILIZER USED: Preplant: N = 180 kg/ha; P_2O_5 = 288 kg/ha; K_2O = 216 kg/ha. Topdressing of $(NH_4)_2SO_4$ at 40 kg/ha of nitrogen.

GENERAL DESCRIPTION OF CLIMATIC CONDITIONS DURING TEST: Temperatures were unusually high during the winter and the field was rarely covered with snow.

DISEASE DEVELOPMENT: Leaf rust infected susceptible varieties while stem rust was rare.

INSECT, WEED OR PEST PROBLEMS: None.

DATE OF HARVEST: July 16 - 28, 1973.

AREA HARVESTED FOR YIELD: 1.98 square meters.

DATES WHEN DIFFERENT NOTES WERE TAKEN:
Winter survival - April 18, 1973
Lodging - July 5, 1973
Leaf rust - June 28, 1973
Shattering - July 28, 1973

Correlation coefficients for agronomic and grain quality traits of 30 cultivars in the Fifth International Winter Wheat Performance Nursery grown at Morioka, Japan, 1973.

	Yield
Winter survival	.64**

**Significant at the 1% level.

Table 24. Agronomic, grain quality, and disease data for the 30 cultivars in the Fifth International Winter Wheat Performance Nursery grown at Morioka, Japan, 1973.

Cultivar	Yield q/ha	Test weight kg/hl	Protein %	Lysine[a] % of protein	Date of Flowering days from Jan. 1	Date of Ripening days from Jan. 1	Plant height cm	Lodging %	Shattering %	Winter survival %	Rust Leaf Sev. %	Rust Leaf Resp.	Rust Stem Sev. %	Rust Stem Resp.
Sava	50.4	78.3	14.2	3.05	155	190	103	0	0	100	4	R	0	0
Tam 102	58.5	78.6	14.4	2.92	155	191	116	0	0	100	5	VR-R	0	0
Clarion	58.1	71.8	15.8	2.96	166	203	121	0	0	100	4	R	2	0-S
Zenith	52.6	73.7	14.8	2.92	162	198	126	0	0	100	63	M-VS	0	0
Zlatna dolina	51.9	77.1	15.2	3.01	156	191	83	0	0	100	2	0-VR	0	0-S
Caribo	51.3	68.8	13.7	3.02	165	201	129	0	0	100	32	MS-S	0	0
Backa	50.8	78.4	17.9	2.89	156	190	101	0	0	100	17	MR-M	1	0-M
Maris Nimrod	50.2	69.4	13.3	3.06	165	201	112	0	0	98	22	R-M	1	0-M
Probstdorfer Extrem	50.1	81.4	15.0	2.78	161	194	139	15	3	99	5	VR-M	2	0-S
Diplomat	49.1	75.1	15.1	2.95	166	201	133	0	23	100	32	MS-S	0	0
Centurk	48.1	81.3	15.6	2.87	158	193	121	13	0	100	4	VR-M	0	0
Marimp 3	48.1	75.7	16.5	3.00	156	191	110	0	28	100	58	M-S	0	0
Hokuei	48.0	78.3	13.7	2.85	159	197	123	18	0	100	58	MS-S	1	0-S
Blueboy	47.3	73.9	14.4	2.94	158	196	128	0	0	100	12	M-S	1	0-M
Atlas 66	44.5	79.7	19.0	2.76	158	194	132	33	0	99	1	0-MR	0	0
C.I.15074	44.1	81.6	17.5	2.89	160	191	129	5	0	99	2	VR-R	2	0-S
Rousalka	43.2	79.2	16.8	2.87	152	190	91	0	0	100	2	0-VR	2	0-VS
Dacia	42.8	79.0	18.1	2.77	158	193	125	0	0	99	4	VR	0	0-M
Strampelli	42.8	79.3	14.1	2.92	153	189	95	0	0	98	42	M-S	0	0
Bezostaya 1	39.9	79.1	16.5	2.83	161	195	118	0	0	100	2	VR	0	0
Moldova	39.7	78.5	17.8	2.92	155	193	125	0	0	100	4	VR-R	0	0-S
Victor 1	39.7	75.7	16.2	3.08	153	192	84	0	0	93	45	S	0	0
Vakka	39.6	73.1	14.4	2.96	164	198	138	0	26	100	82	S-VS	0	0
Carifen 12	38.1	63.4	13.5	3.21	162	196	88	0	0	99	73	S	2	0-S
Lilifen	35.6	72.1	17.3	3.11	160	202	95	0	0	89	0	0-VR	0	0
Lancota (NE701132)	35.0	79.7	18.4	2.80	158	195	122	3	0	100	1	0-VR	0	0
Starke	33.9	65.7	14.6	3.01	169	204	151	0	0	100	82	S-VS	1	0-S
Jyva	32.3	67.0	13.5	3.03	165	200	141	0	14	99	99	VS	0	0
Kirac 66	28.5	77.6	15.8	2.90	157	196	129	23	0	100	99	VR-VS	0	0
Lerma Rojo 64	0.0	--	--	--	--	--	--	--	--	1	0	0	0	0
Mean	43.9	75.6	15.6	2.94	159.4	195.3	117.7	3.8	3.2	95.6	28.5		0.5	
Coefficient of variation (%)	8.9	--	--	--	--	--	--	--	--	1.1	--		--	
L.S.D. of cultivar means (.05)	5.5	--	--	--	--	--	--	--	--	1.4	--		--	
Local cultivars														
Aobak	40.8	76.5	--	--	149	189	106	20	0	100	65	MS-S	0	0
Nanbuk	43.3	79.3	--	--	148	186	115	8	0	100	99	S-VS	0	0

a) One rep only.

JORDAN

Amman

COOPERATOR(S): A. Maserdeh; M. Khurdri; S. P. Kohli.

DATE OF PLANTING: November 14, 1973.

PRECIPITATION DURING CYCLE OF TEST: Not reported.

AMOUNT OF IRRIGATION APPLIED: One per month from March - July, 1973.

FERTILIZER USED: N = 150 kg/ha ($(NH_4)_2SO_4$); P_2O_5 = 75 kg/ha (superphosphate).

GENERAL DESCRIPTION OF CLIMATIC CONDITIONS DURING TEST: The test was planned to be only rainfed but the rains failed after November, 1972. Irrigation was used for replications 2, 3 and 4. Replication 1 failed.

DISEASE DEVELOPMENT: Not reported.

INSECT, WEED OR PEST PROBLEMS: Not reported.

DATE OF HARVEST: Not reported.

AREA HARVESTED FOR YIELD: 2.4 square meters.

DATES WHEN DIFFERENT NOTES WERE TAKEN:
- Vigor - March, 1973
- Diseases - June 18, 1973
- Maturity - June 18, 1973
- Straw strength - June 18, 1973
- Grain characters - September 27, 1973
- Plant height - June 18, 1973

Correlation coefficients for agronomic and grain quality traits of 30 cultivars in the Fifth International Winter Wheat Performance Nursery grown at Amman, Jordan, 1973.

	Yield	Protein	Plant height
Protein	-.52**		
Plant height	-.03	49**	
Shattering	-.65**	56**	.11

**Significant at the 1% level.

Table 25. Agronomic, grain quality, and disease data for the 30 cultivars in the Fifth International Winter Wheat Performance Nursery grown at Amman, Jordan, 1973.

Cultivar	Yield[b] q/ha	Protein[a] %	Lysine[a] % of protein	Plant height[a] cm	Shattering[b] %
Lerma Rojo 64	50.0	16.2	3.17	70	0
Blueboy	48.4	15.7	3.12	90	13
Tam 102	42.7	17.6	3.18	80	17
Rousalka	38.1	17.0	3.21	55	0
Strampelli	37.7	16.2	3.15	60	20
Kirac 66	37.7	18.0	2.98	100	33
Probstdorfer Extrem	36.8	18.7	2.68	100	7
Lancota (NE701132)	36.2	18.2	2.84	100	0
Dacia	35.5	19.1	3.22	100	7
Bezostaya 1	34.9	17.8	2.84	80	17
Lilifen	34.9	17.5	3.12	80	0
Marimp 3	33.3	18.1	3.02	60	17
Backa	33.0	18.5	3.05	60	12
C.I.15074	32.8	19.5	2.91	95	0
Sava	32.2	16.4	3.08	65	10
Moldova	31.7	18.9	3.08	70	20
Centurk	31.7	17.1	3.19	80	12
Caribo	29.8	18.2	3.02	75	33
Victor I	29.0	17.5	3.16	50	13
Zlatna dolina	27.3	16.9	3.13	65	23
Atlas 66	27.2	20.3	2.95	100	20
Hokuei	24.2	16.0	3.02	70	0
Carifen 12	23.8	17.4	3.14	60	10
Zenith	19.9	19.9	2.96	75	47
Vakka	19.4	20.3	3.00	75	10
Maris Nimrod	19.3	18.1	3.04	85	17
Diplomat	17.0	19.6	2.94	105	43
Jyva	15.5	21.0	2.89	105	43
Starke	10.2	19.8	3.25	78	73
Clarion	9.9	20.2	2.92	80	80
Mean	30.0	18.2	3.04	78.9	19.9
Coefficient of variation (%)	31.6	--	--	--	105.5
L.S.D. of cultivar means (.05)	15.5	--	--	--	34.2

a) One rep only.
b) Three reps only.

KOREA

Suwon

COOPERATOR(S): Hyun Ok Choi; Chang Hwan Cho; Byung Hee Hong.

DATE OF PLANTING: October 5, 1972.

PRECIPITATION DURING CYCLE OF TEST: 727.2 mm.

AMOUNT OF IRRIGATION APPLIED: None.

FERTILIZER USED: N = 228 kg/ha (urea); P_2O_5 = 135 kg/ha (double superphosphate); K_2O = 105 kg/ha (potassium chloride).

GENERAL DESCRIPTION OF CLIMATIC CONDITIONS DURING TEST: Generally good growing conditions for wheat, no winter.

DISEASE DEVELOPMENT: Leaf rust and stem rust were severe.

INSECT, WEED OR PEST PROBLEMS: Hand weeded two times.

DATE OF HARVEST: July 7, 1973.

AREA HARVESTED FOR YIELD: 1.5 square meters.

DATES WHEN DIFFERENT NOTES WERE TAKEN:
Winter survival - March 15, 1973
Leaf rust - June 15, 1973
Stem rust - June 25, 1973
Lodging - June 30, 1973

Correlation coefficients for agronomic and grain quality traits of 30 cultivars in the Fifth International Winter Wheat Performance Nursery grown at Suwon, Korea, 1973.

	Yield	Test weight	Protein	Flowering	Ripening	Plant height	Lodging
Test weight	.56**						
Protein	-.38**	-.09					
Flowering	-.64**	-.59**	.21*				
Ripening	-.68**	-.54**	.18*	.81**			
Plant height	.06	.27**	.23*	.15	.11		
Lodging	.03	.20*	.00	-.10	-.02	.35**	
Winter survival	.23*	-.06	-.21*	.22*	.04	.40**	.24**

**Significant at the 1% level. *Significant at the 5% level.

Table 26. Agronomic, grain quality, and disease data for the 30 cultivars in the Fifth International Winter Wheat Performance Nursery grown at Suwon, Korea, 1973.

Cultivar	Yield q/ha	Test weight kg/hl	Protein %	Lysine[a] % of protein	Date of Flowering (days from Jan. 1)	Date of Ripening (days from Jan. 1)	Plant height cm	Lodging %	Winter[a] survival %	Rust Leaf Sev. %	Rust Leaf Resp.	Rust Stem Sev. %	Rust Stem Resp.
Lancota (NE701132)	63.6	78.2	12.7	2.92	140	175	110	15	100	1	R	1	R-MR
Sava	62.9	74.7	10.9	3.12	138	176	86	0	70	5	R-MS	30	MR-S
Dacia	61.0	76.3	14.2	3.02	138	174	110	10	100	2	0-R	27	MS-S
Atlas 66	60.8	77.8	14.5	3.02	140	177	127	13	90	1	R	1	R
Moldova	60.2	77.5	13.6	3.15	136	169	116	3	100	1	0-R	3	R-MS
Blueboy	58.4	69.0	10.5	3.13	141	180	105	16	100	1	R-S	67	S
Backa	57.2	76.9	12.5	3.06	140	180	94	0	70	72	S	37	MS-S
Zlatna dolina	55.8	74.7	12.5	3.03	140	177	76	0	90	6	R-MR	12	MS-S
Bezostaya 1	55.5	79.1	13.7	2.89	141	179	103	23	100	6	R-MR	1	R
Rousalka	55.0	76.1	9.7	3.06	137	172	79	0	100	1	R	8	R-S
Victor I	53.5	76.9	14.0	3.12	139	175	78	0	50	36	MS-S	1	R-MR
Centurk	51.2	76.9	13.7	3.19	142	177	109	57	90	5	R	2	R-MR
Marimp 3	50.8	76.6	12.0	3.27	140	176	98	0	50	45	S	22	MS-S
Tam 102	48.4	69.5	13.5	3.18	140	173	88	20	100	1	0-R	20	MS
Strampelli	48.1	76.5	12.3	3.00	137	173	86	0	60	22	MR-MS	15	MR-MS
Kirac 66	48.1	74.7	14.5	3.17	141	178	120	36	100	62	S	7	R-MR
C.I.15074	46.8	78.5	14.4	3.16	142	176	114	52	100	1	R	40	MS-S
Probstdorfer Extrem	43.7	78.6	13.3	2.76	143	180	112	18	100	20	MR-MS	22	MS
Hokuei	41.0	71.0	11.9	3.12	142	181	101	70	90	30	MS	50	MS-S
Maris Nimrod	37.5	69.6	11.9	3.19	149	184	94	0	90	1	R	55	S
Caribo	37.2	71.0	12.0	3.04	153	185	104	0	100	45	MS-S	20	MS-S
Clarion	36.3	66.0	14.5	3.25	152	186	92	0	80	1	R	57	S
Zenith	32.6	68.6	14.7	3.23	150	185	100	0	100	70	S	27	MS-S
Lilifen	31.7	69.4	15.8	3.11	144	183	94	0	30	1	R	1	R
Vakka	31.0	65.8	14.5	3.12	148	182	108	1	100	55	MS-S	37	S
Carifen 12	30.5	59.8	13.2	3.33	147	181	71	0	90	82	S	18	R-S
Diplomat	26.2	72.7	13.7	3.14	152	187	102	0	100	79	S	5	R-S
Jyva	22.7	68.3	13.9	3.23	149	185	104	0	80	70	S	25	S
Lerma Rojo 64	20.1	75.1	15.7	2.97	137	177	86	0	0	0	0	0	0
Starke	14.5	68.6	15.4	3.25	155	188	112	0	90	80	S	22	S
Mean	44.8	73.2	13.3	3.11	143.0	178.9	99.2	11.1	84.0	26.7		21.1	
Coefficient of variation (%)	14.6	1.4	9.0	--	1.8	1.3	4.9	133.2	--	--		--	
L.S.D. of cultivar means (.05)	9.2	1.4	1.7	--	3.7	3.1	6.8	20.8	--	--		--	

a) One rep only.

LEBANON

Tel-Amara

COOPERATOR(S): Agricultural Research Institute (Tel-Amara); ALAD (Ford Foundation).

DATE OF PLANTING: November 15, 1972.

PRECIPITATION DURING CYCLE OF TEST: 338 mm.

AMOUNT OF IRRIGATION APPLIED: None.

FERTILIZER USED: N = 150 kg/ha; P = 75 kg/ha.

GENERAL DESCRIPTION OF CLIMATIC CONDITIONS DURING TEST: Very low rainfall which was 55% of normal. Normal temperatures.

DISEASE DEVELOPMENT: Very low incidence of disease.

INSECT, WEED OR PEST PROBLEMS: Sunpest was controlled by chemicals.

DATE OF HARVEST: July 9, 1973.

AREA HARVESTED FOR YIELD: 2.70 square meters.

DATES WHEN DIFFERENT NOTES WERE TAKEN:
Stripe rust - end of May, 1973
Leaf rust - early to mid-June, 1973
Stem rust - early to mid-June, 1973

Correlation coefficients for agronomic and grain quality traits of 30 cultivars in the Fifth International Winter Wheat Performance Nursery grown at Rayak, Lebanon, 1973.

	Yield	Test weight	Protein	Flowering	Ripening
Test weight	.62**				
Protein	-.66**	-.25			
Flowering	-.82**	-.68**	.58**		
Ripening	-.83**	-.62**	.54**	.92**	
Plant height	.47	.58**	.05	-.39*	-.28

**Significant at the 1% level. *Significant at the 5% level.

Table 27. Agronomic, grain quality, and disease data for the 30 cultivars in the Fifth International Winter Wheat Performance Nursery grown at Tel-Amara, Lebanon, 1973.

Cultivar	Yield q/ha	Test weight[a] kg/hl	Protein %	Lysine[a] % of protein	Date of Flowering[a] (days from Jan. 1)	Date of Ripening[a] (days from Jan. 1)	Plant height[a] cm
Strampelli	40.7	81.0	12.4	3.13	85	125	75
Lerma Rojo 64	35.1	81.3	15.9	2.91	82	120	95
Rousalka	33.1	79.4	14.7	3.16	87	127	75
Victor I	32.2	80.5	14.6	3.26	89	125	65
Moldova	31.8	81.0	16.0	3.16	88	124	95
Bezostaya 1	29.3	81.9	15.1	3.03	99	132	80
Blueboy	28.8	75.5	13.8	3.24	97	132	75
Lilifen	27.8	76.7	16.2	3.13	100	140	75
Dacia	27.6	78.9	15.9	3.13	95	130	90
Zlatna dolina	26.7	77.4	15.6	3.24	93	127	65
Tam 102	25.1	78.0	15.3	3.19	96	130	80
Lancota (NE701132)	24.9	81.0	16.8	3.06	100	136	90
Backa	24.8	79.2	15.3	3.14	94	130	75
Sava	24.3	78.6	14.6	3.23	95	129	80
Atlas 66	24.0	77.7	17.8	3.11	99	132	90
Marimp 3	23.1	79.4	15.2	3.23	94	128	80
Centurk	22.8	79.7	14.6	3.22	77	130	85
Probstdorfer Extrem	21.3	79.8	15.8	3.11	105	136	70
C.I.15074	18.6	81.6	17.1	3.08	99	134	85
Carifen 12	17.2	72.3	16.3	3.23	105	136	60
Hokuei	16.9	77.5	16.5	3.01	100	138	75
Kirac 66	12.2	78.0	17.4	3.12	98	138	90
Clarion	10.1	74.2	15.7	3.27	112	145	75
Caribo	9.9	71.5	16.9	3.12	110	137	65
Zenith	9.8	75.5	16.1	3.11	110	145	80
Maris Nimrod	7.9	71.8	16.1	3.21	110	140	65
Jyva	6.8	--	17.6	3.10	110	145	75
Diplomat	4.0	--	18.0	3.12	120	153	75
Vakka	2.5	--	18.5	3.13	112	145	70
Starke	0.4	--	20.2	3.05	124	153	75
Mean	20.7	78.1	16.0	3.14	99.5	134.7	77.7
Coefficient of variation (%)	27.7	--	6.0	--	--	--	--
L.S.D. of cultivar means (.05)	8.1	--	1.3	--	--	--	--

a) One rep only.

MEXICO

Toluca

COOPERATOR(S): CIMMYT.

DATE OF PLANTING: November 1, 1972.

PRECIPITATION DURING CYCLE OF TEST: 22.2 mm.

AMOUNT OF IRRIGATION APPLIED: 12 irrigations.

FERTILIZER USED: N = 200 kg/ha; P = 80 kg/ha.

GENERAL DESCRIPTION OF CLIMATIC CONDITIONS DURING TEST: Dry from November - May. Cold nights in December, January and February with temperature around 0° C with normal day time temperatures.

DISEASE DEVELOPMENT: Stem, leaf and stripe rusts.

INSECT, WEED OR PEST PROBLEMS: None.

DATE OF HARVEST: July 10, 1973.

AREA HARVESTED FOR YIELD: 2.40 square meters.

DATES WHEN DIFFERENT NOTES WERE TAKEN: Not reported.

Correlation coefficients for agronomic and grain quality traits of 30 cultivars in the Fifth International Winter Wheat Performance Nursery grown at Toluca, Mexico, 1973.

	Yield	Protein	Flowering
Protein	-.00		
Flowering	-.33**	-.69**	
Lodging	-.17	.29**	-.17

**Significant at the 1% level.

Table 28. Agronomic, grain quality, and disease data for the 30 cultivars in the Fifth International Winter Wheat Performance Nursery grown at Toluca, Mexico, 1973.

Cultivar	Yield q/ha	Protein %	Lysine[a] % of protein	Date of flowering days from Jan. 1	Lodging %	Rust: Stripe Sev. %	Rust: Stripe Resp.	Rust: Leaf Sev. %	Rust: Leaf Resp.	Rust: Stem Sev. %	Rust: Stem Resp.	Leaf firing 0-9
Rousalka	53.4	14.6	3.14	175	0	67	S	0	0	70	S	1
Backa	44.3	13.9	3.14	190	1	30	MS-S	10	0-S	47	S	1
Moldova	42.6	13.9	3.17	181	35	47	MS-S	0	0	57	S	1
Blueboy	42.6	12.2	3.22	183	15	60	S	0	0	62	S	1
Sava	40.9	13.4	3.22	186	5	55	S	2	0-MS	20	MS-S	1
Dacia	39.9	13.8	3.17	183	73	47	MS-S	0	0	72	S	1
Maris Nimrod	39.7	10.8	3.27	197	0	7	0-S	12	0-S	82	S	1
Lilifen	32.9	14.0	3.20	173	0	3	R-MS	1	R-MS	6	R-S	2
Diplomat	32.2	12.2	3.24	214	0	5	0-S	60	S	8	R-S	1
Zlatna dolina	32.0	13.3	3.13	183	3	37	S	1	R-MS	8	R-MS	1
Caribo	31.8	11.0	3.08	204	0	22	MS-S	37	MS-S	25	S	1
Hokuei	30.8	11.5	3.03	191	73	37	MS-S	3	0-MS	35	S	1
Bezostaya 1	30.0	12.8	3.00	192	58	30	MS-S	0	0	42	S	1
Centurk	29.4	14.6	3.16	186	73	32	MS-S	2	0-S	8	R-S	1
Zenith	28.7	12.4	3.10	203	6	2	0-MS	20	0-S	59	S	1
Marimp 3	28.4	14.8	3.34	181	0	70	S	7	0-S	70	S	1
Carifen 12	26.3	11.1	2.95	202	0	42	0-S	17	0-S	84	S	1
Victor 1	23.4	14.4	3.21	172	0	80	S	0	0	42	S	2
Lancota (NE701132)	23.2	15.2	2.89	183	50	45	MS-S	2	0-S	10	MS	1
Atlas 66	23.0	15.3	3.06	183	58	52	S	7	0-S	3	R-MS	2
Strampelli	22.7	14.3	3.15	171	38	60	MS-S	0	0	55	S	1
Clarion	21.6	11.9	3.50	208	0	10	0-S	30	0-S	79	S	1
C.I.15074	20.3	13.1	3.52	182	33	89	S	0	0	10	MS	1
Probstdorfer Extrem	19.1	13.4	3.05	210	33	5	0-MS	5	0-MS	25	S	1
Tam 102	18.7	15.6	3.45	178	8	94	S	0	0	35	MS-S	1
Lerma Rojo 64	16.1	15.4	3.21	175	28	90	S	0	0	10	MS-S	2
Kirac 66	15.7	15.5	3.27	175	63	82	S	0	0	89	S	2
Jyva	9.3	11.0	3.29	214	13	40	S	27	0-S	72	S	1
Vakka	8.8	12.7	3.43	214	43	20	S	10	0-S	96	S	1
Starke	8.7	10.1	3.34	225	0	22	MS-S	52	MS-S	35	S	1
Mean	27.9	13.3	3.20	190.5	23.6	42.7		10.2		43.9		1.2
Coefficient of variation (%)	21.0	4.9	--	1.7	80.4	--		--		--		--
L.S.D. of cultivar means (.05)	8.2	0.9	--	4.6	26.5	--		--		--		--

a) One rep only.

THE NETHERLANDS

Wageningen

COOPERATOR(S): J. Sneep; A. C. Zeven; H. Masselink.

DATE OF PLANTING: October 17, 1972.

PRECIPITATION DURING CYCLE OF TEST: 494.9 mm.

AMOUNT OF IRRIGATION APPLIED: None.

FERTILIZER USED: P_2O_5 = 45 kg/ha; K_2O = 45 kg/ha.

GENERAL DESCRIPTION OF CLIMATIC CONDITIONS DURING TEST: Very mild winter; normal spring; summer was hot and dry.

DISEASE DEVELOPMENT: Mildew attacked most varieties. No stripe rust.

INSECT, WEED OR PEST PROBLEMS: None reported.

DATE OF HARVEST: July 17-August 7, 1973.

AREA HARVESTED FOR YIELD: 4.5 square meters.

DATES WHEN DIFFERENT NOTES WERE TAKEN:
Winter survival - March 28, 1973
Mildew - June 13, 1973
Plant height - June 20, 1973
Lodging - June 20, 1973

Correlation coefficients for agronomic and grain quality traits of 30 cultivars in the Fifth International Winter Wheat Performance Nursery grown at Wageningen, The Netherlands, 1973.

	Yield	Test weight	Protein	Flowering	Ripening	Plant height	Lodging	Shattering
Test weight	.04							
Protein	-.42**	.41**						
Flowering	.07	-.14	-.13					
Ripening	.25**	-.01	-.08	.72**				
Plant Height	-.41**	.14	.33**	.35**	.04			
Lodging	-.39**	.09	.50	-.10*	.01	.16		
Shattering	.09	.11	-.01	-.47**	-.35**	-.33**	-.01	
Winter survival	.16	.04	.19	-.19	-.10	-.10	.16	.03

**Significant at the 1% level. *Significant at the 5% level.

Table 29. Agronomic, grain quality, and disease data for the 30 cultivars in the Fifth International Winter Wheat Performance Nursery grown at Wageningen, The Netherlands, 1973.

Cultivar	Yield q/ha	Test weight kg/hl	Protein %	Lysine[a] % of protein	Date of Flowering: days from Jan. 1	Date of Ripening: days from Jan. 1	Plant height cm	Lodging %	Shattering %	Winter survival %	Mildew sev. %
Maris Nimrod	68.0	75.7	11.6	3.05	166	229	110	0	5	93	1
Clarion	59.4	78.8	11.8	3.12	169	223	115	0	14	94	30
Zlatna dolina	57.9	78.3	11.3	2.96	161	206	94	0	10	94	20
Backa	56.8	81.0	13.0	2.95	157	211	103	0	29	94	6
Strampelli	56.2	79.0	11.0	3.14	156	200	110	1	4	95	16
Victor I	55.3	78.7	12.8	3.24	158	211	93	0	5	93	26
Caribo	54.9	80.1	11.9	3.00	168	214	118	0	1	94	21
Rousalka	53.3	80.8	12.4	3.09	155	200	90	0	24	94	8
Sava	52.6	78.4	12.0	3.10	157	211	95	0	20	93	2
Marimp 3	52.3	78.5	12.6	3.10	159	211	107	0	15	94	12
Probstdorfer Extrem	52.1	82.3	13.8	2.42	162	205	141	0	5	95	12
Zenith	51.7	81.3	13.3	3.04	168	223	116	0	5	93	10
Carifen 12	51.2	71.2	10.7	3.21	166	211	89	0	8	95	21
Starke	50.6	80.0	10.6	3.04	171	229	119	1	4	88	0
Bezostaya 1	49.3	82.4	12.9	2.97	162	223	110	0	11	95	20
Lilifen	49.0	76.3	12.1	3.08	163	223	103	0	2	95	55
Lerma Rojo 64	48.4	81.3	13.0	3.03	155	198	108	0	5	95	28
Blueboy	47.0	74.5	11.5	3.18	163	211	120	0	5	94	48
Centurk	46.7	77.9	12.4	3.14	162	205	119	15	21	94	8
Diplomat	46.4	81.5	12.7	2.89	169	227	117	0	5	93	52
Dacia	46.0	80.9	12.6	2.97	158	200	123	11	14	93	15
Jyva	44.2	78.1	13.9	2.92	168	211	134	0	5	91	13
Vakka	44.0	76.3	12.8	3.12	166	211	139	0	5	91	12
Hokuei	43.0	76.9	11.8	3.02	162	211	119	0	10	94	21
Moldova	40.7	79.3	13.6	3.07	156	198	123	28	20	94	25
Lancota (NE701132)	40.5	80.9	13.8	2.88	160	211	123	14	2	94	23
Atlas 66	40.0	80.2	15.4	2.97	162	223	122	60	3	95	15
Tam 102	37.2	75.8	12.3	3.06	158	200	106	0	11	89	53
C.I.15074	35.0	81.4	13.8	3.03	162	205	123	3	10	93	41
Kirac 66	33.7	76.3	12.6	3.22	164	211	133	18	5	94	43
Mean	48.8	78.8	12.5	3.03	162.0	211.8	114.0	5.0	9.4	93.2	21.9
Coefficient of variation (%)	8.9	1.7	6.8	--	0.7	0.7	3.6	190.9	21.2	2.7	--
L.S.D. of cultivar means (.05)	12.4	1.8	1.2	--	1.6	2.0	5.8	13.4	2.8	3.6	--

a) One rep only.

PAKISTAN

Islamabad

COOPERATOR(S): N. M. M. Saud.

DATE OF PLANTING: October 31, 1972.

PRECIPITATION DURING CYCLE OF TEST: 155 mm rainfall plus 61 cm of snow.

AMOUNT OF IRRIGATION APPLIED: 330 mm.

FERTILIZER USED: N = 92 kg/ha (urea); P = 46 kg/ha.

GENERAL DESCRIPTION OF CLIMATIC CONDITIONS DURING TEST: Severe winter with snowfall. Since germination and early growth had taken place a lot of damage occurred due to diverse climatic conditions.

DISEASE DEVELOPMENT: None.

INSECT, WEED OR PEST PROBLEMS: Birds.

DATE OF HARVEST: June 11, 1973.

AREA HARVESTED FOR YIELD: 5.0 square meters.

DATES WHEN DIFFERENT NOTES WERE TAKEN:
Winter injury - February 14, 1973
Flowering - April 10, 1973
Maturity - May 15, 1973
Diseases - April 10, 1973
Height - June 1, 1973

Correlation coefficients for agronomic and grain quality traits of 30 cultivars in the Fifth International Winter Wheat Performance Nursery grown at Islamabad, Pakistan, 1973.

	Yield	Flowering	Ripening	Plant height	Winter survival
Flowering	-.43**				
Ripening	-.40**	.49**			
Plant height	-.05	-.06	-.04		
Winter survival	.01	-.05	.12	-.17	
1000-kernel weight	.70**	-.41**	-.34**	-.00	-.03

**Significant at the 1% level

Table 30. Agronomic, grain quality, and disease data for the 30 cultivars in the Fifth International Winter Wheat Performance Nursery grown at Islamabad, Pakistan, 1973.

Cultivar	Yield q/ha	Date of Flowering days from Jan. 1	Date of Ripening days from Jan. 1	Plant height cm	Winter survival %	1000-Kernel weight gm
Strampelli	53.3	109	134	85	1	32
Rousalka	52.8	115	144	77	9	40
Backa	52.1	115	141	84	8	33
Sava	51.9	129	142	80	3	28
Lerma Rojo 64	51.1	100	130	85	15	32
Marimp 3	48.6	115	144	87	9	28
Victor I	47.2	111	139	75	22	30
Moldova	47.0	115	140	105	6	36
Zlatna dolina	45.5	125	140	70	9	32
Dacia	43.7	122	146	95	16	34
Blueboy	39.0	125	142	85	9	25
Bezostaya 1	38.3	129	141	95	1	37
Lancota (NE701132)	37.0	128	148	97	4	29
Kirac 66	34.2	135	163	102	8	24
Lilifen	34.1	129	154	85	4	20
Probstdorfer Extrem	33.5	118	100	95	1	24
Centurk	32.6	115	145	97	6	22
Maris Nimrod	31.0	128	153	77	9	23
Hokuei	30.8	118	148	94	2	22
Zenith	30.1	125	153	90	9	21
Tam 102	30.0	119	140	90	14	18
Clarion	28.8	128	152	85	4	18
Atlas 66	26.9	119	154	97	9	25
C.I.15074	25.8	117	149	87	1	23
Caribo	25.6	118	156	90	21	20
Diplomat	24.6	118	153	85	9	28
Carifen 12	20.5	131	153	60	23	21
Vakka	19.9	128	140	87	3	19
Jyva	15.8	125	154	92	8	19
Starke	9.2	130	168	85	16	19
Mean	35.4	121.2	145.4	87.3	8.6	26.7
Coefficient of variation (%)	21.1	0.8	1.6	1.0	156.5	2.9
L.S.D. of cultivar means (.05)	10.5	1.3	3.3	1.3	NS	1.1

POLAND

Warsaw

COOPERATOR(S): S. Starzycki.

DATE OF PLANTING: September 20, 1972.

PRECIPITATION DURING CYCLE OF TEST: 407 mm.

AMOUNT OF IRRIGATION APPLIED: None.

FERTILIZER USED: N = 120 kg/ha (NH_4NO_3); P = 96 kg/ha ($Ca(H_2PO_4)_2H_2O$
K = 114 kg/ha (KCl).

GENERAL DESCRIPTION OF CLIMATIC CONDITIONS DURING TEST: Favorable for cereals.

DISEASE DEVELOPMENT: No disease epidemy.

INSECT, WEED OR PEST PROBLEMS: None.

DATE OF HARVEST: July 10-30, 1973.

AREA HARVESTED FOR YIELD: 8 square meters.

DATES WHEN DIFFERENT NOTES WERE TAKEN:
Winter hardiness - March 25, 1973
Weed control (MCPA-30) - May 8, 1973
Heading - May 23 - June 6, 1973
Flowering - June 2-14, 1973
Lodging - July 10, 1973
Shattering - August 15, 1973

Correlation coefficients for agronomic and grain quality traits of 30 cultivars in the Fifth International Winter Wheat Performance Nursery grown at Warsaw, Poland, 1973.

	Yield	Test weight	Protein	Flowering	Ripening	Plant height	Lodging	Shattering
Test weight	-.00							
Protein	-.45**	.25**						
Flowering	.30**	-.32**	-.51**					
Ripening	.39**	-.33**	-.53**	.90**				
Plant height	.49**	.15	-.27**	.51**	.49**			
Lodging	.15	.18	.05	.05	.06	.34		
Shattering	-.30**	.08	.27**	-.45**	-.55	-.17	.01	
Winter survival	.75**	.21*	-.37**	.09	.10	.47**	.08	.01

**Significant at the 1% level. *Significant at the 5% level.

Table 31. Agronomic, grain quality, and disease data for the 30 cultivars in the Fifth International Winter Wheat Performance Nursery grown at Warsaw, Poland, 1973.

Cultivar	Yield g/ha	Test weight kg/hl	Protein %	Lysine[a] % of protein	Date of Flowering (days from Jan. 1)	Date of Ripening (days from Jan. 1)	Plant height cm	Lodging %	Shattering %	Winter survival %	Leaf rust Sev. %	Leaf rust Resp.	Mildew Sev. %	Aphids Sev. %	Heading days from Jan. 1
Blueboy	49.9	70.7	12.8	3.07	159	206	104	45	4	78	1	O-MR	52	8	151
Probstdorfer Extrem	45.3	77.5	13.8	2.80	158	203	109	43	1	89	10	R-MS	2	0	152
Maris Nimrod	43.4	71.2	13.1	3.05	163	209	96	43	1	83	3	VR-MR	6	30	154
Jyva	42.5	74.5	14.1	2.86	162	208	120	31	1	84	46	MS-S	2	5	156
Starka	39.[illegible]	75.8	12.6	2.90	165	211	125	21	0	88	20	MR-S	1	0	157
Zenith	38.1	74.6	13.9	2.92	162	205	102	35	3	71	23	R-S	18	10	155
Clarion	38.0	70.7	12.2	3.00	163	207	96	50	1	93	0	O-MS	27	24	155
Hipicant	37.9	75.9	13.6	2.91	163	209	107	15	2	80	5	O-MS	45	8	156
Centurk	37.2	78.1	12.8	3.00	156	194	101	55	6	83	1	VR-R	5	0	149
Caribo	36.5	73.3	12.4	2.86	162	206	100	25	3	86	26	MS-S	0	5	154
Vakka	34.8	72.8	13.7	2.84	160	203	119	53	6	85	17	R-MS	13	8	154
Bezostaya 1	34.5	77.7	15.3	2.73	157	202	103	33	4	83	5	R-MR	27	25	151
Hokuei	34.2	77.7	14.0	2.93	157	202	100	48	2	81	9	R-MS	17	3	150
Tam 102	33.2	74.7	14.0	2.98	153	192	81	23	4	93	3	O-MR	31	13	145
Dacia	28.1	75.1	16.5	2.98	155	194	91	20	3	79	1	O-MR	25	1	148
C.I 15074	27.5	78.9	16.5	2.84	157	194	100	50	6	78	4	VR-MR	11	0	148
Backa	27.2	72.8	[illegible].3	3.00	157	200	68	15	3	11	4	O-MS	3	35	150
Sava	24.9	76.7	15.0	2.97	156	196	73	38	3	65	0	O-R	2	43	148
Lancota (NE701132)	24.6	77.8	15.9	2.87	156	197	91	55	3	78	1	R	7	3	146
Zlatna dolina	24.0	76.5	14.1	3.01	156	199	67	3	4	58	0	O-MR	3	43	148
Moldova	20.7	76.1	17.0	3.04	154	193	93	35	7	78	3	O-MS	30	13	145
Kirac 66	20.5	74.4	14.4	3.16	159	205	109	65	2	45	33	MS-S	36	8	152
Carifen 12	19.8	70.3	13.0	3.09	161	204	67	14	1	30	11	R-S	33	33	152
Rousalka	15.1	72.9	15.3	3.03	153	191	69	3	11	64	0	O	22	80	143
Atlas 66	7.6	74.7	17.2	2.87	159	198	95	55	5	5	7	R-MS	15	11	152
Lilifen	1.3	70.0	15.2	3.10	160	201	70	0	--	1	2	O-MR	7	30	150
Marimp 2	0.9	--	16.0	3.02	158	202	65	70	--	1	7	O-S	7	8	150
Strampelli	0.0	--	17.0	2.80	--	--	--	--	--	0	0	O	0	--	--
Victor I	0.0	--	15.6	3.01	--	--	--	--	--	0	0	O	0	--	--
Lerma Rojo 64	0.0	--	14.0	3.04	--	--	--	--	--	-	0	O	0	--	--
Mean	26.5	74.8	14.5	2.96	158.4	201.0	94.8	34.7	3.7	59.0	8.1		18.8	16.3	150.8
Coefficient of variation (%)	33.7	2.5	6.1	--	0.6	0.5	7.5	57.0	78.6	14.1	--		--	--	--
L.S.D. of cultivar means (.05)	12.6	2.7	1.2	--	1.2	1.5	10.1	27.9	4.1	11.8	--		--	--	--
Local cultivars															
Grana	44.7	72.9	--	--	158	205	100	55	2	96	16	MR-MS	25	24	154
Luna	34.7	72.1	--	--	158	205	86	50	2	98	23	S-MS	20	43	151

a) One rep only.

ROMANIA

Fundulea

COOPERATOR(S): T. Muresan; N. Eustatiu; G. Ittu.

DATE OF PLANTING: October 20, 1972.

PRECIPITATION DURING CYCLE OF TEST: 720 mm from August 1, 1972 - July 1, 1973.

AMOUNT OF IRRIGATION APPLIED: None.

FERTILIZER USED: N = 100 kg/ha; P_2O_5 = 70 kg/ha.

GENERAL DESCRIPTION OF CLIMATIC CONDITIONS DURING TEST: The autumn was very rich in precipitation and the winter was mild, but longer than normal. The spring was not so rich in precipitation and it was very hot at the end of June.

DISEASE DEVELOPMENT: Good conditions for leaf rust and mildew.

INSECT, WEED OR PEST PROBLEMS: 3.5 kg/ha of Dicotex for weed control.

DATE OF HARVEST: July 15, 1973.

AREA HARVESTED FOR YIELD: 3 square meters.

DATES WHEN DIFFERENT NOTES WERE TAKEN:

Winter survival - March 26, 1973
Stripe rust - June 15, 1973
Stem rust - June 20, 1973
Leaf rust - June 15, 1973
Mildew - June 11, 1973
Lodging - June 25, 1973
Height - June 15, 1973

Correlation coefficients for agronomic and grain quality traits of 30 cultivars in the Fifth International Winter Wheat Performance Nursery grown at Fundulea, Romania, 1973.

	Yield	Test weight	Protein	Flowering	Ripening	Plant height	Lodging
Test weight	.26**						
Protein	-.13	.18*					
Flowering	-.11	-.71**	-.17				
Ripening	-.13	-.64**	-.18	.91**			
Plant height	-.02	-.15	.26**	.54**	.35**		
Lodging	.10	.21*	.03	.06	.01	.33**	
Frost	-.25**	.27**	.29**	-.36**	.36**	-.18*	.07

**Significant at the 1% level. *Significant at the 5% level.

Table 32. Agronomic, grain quality, and disease data for the 30 cultivars in the Fifth International Winter Wheat Performance Nursery grown at Fundulea, Romania, 1973.

Cultivar	Yield g/ha	Test weight kg/hl	Protein %	Lysine[a] % of protein	Date of Flowering days from Jan. 1	Date of Ripening days from Jan. 1	Plant height cm	Lodging %	Frost damage 0-9	Leaf Rust Sev. %	Leaf Rust Resp.	Mildew sev. %
Probstdorfer Extrem	48.1	82.7	14.6	3.04	150	181	104	13	1	11	MS	20
Sava	46.4	81.1	13.7	3.14	141	178	69	0	1	11	MR	20
Centurk	46.3	82.4	13.3	3.19	146	178	86	10	1	5	R	20
Maris Nimrod	44.9	72.9	12.9	3.16	155	184	85	5	1	27	S	40
Lancota (NE701132)	44.2	81.7	15.5	2.95	148	180	94	29	1	14	R	20
Blueboy	42.5	78.4	12.5	3.10	146	180	88	0	1	10	MR	80
Clarion	41.9	71.8	14.3	3.17	156	186	89	0	1	5	R	40
Dacia	41.1	80.0	15.8	3.02	146	180	89	0	1	22	M-MS	50
Zlatna dolina	41.0	79.5	13.4	3.06	141	178	62	0	1	7	MR	70
Backa	40.7	80.2	14.9	3.15	142	179	69	0	1	70	VS	30
Diplomat	40.2	78.4	14.8	3.07	156	185	91	0	1	13	MR-M	80
Marimp 3	40.0	80.8	15.4	3.05	143	180	77	0	5	72	S-VS	50
Carifen 12	39.0	72.8	13.1	3.23	154	184	68	0	1	72	S-VS	50
Hokuei	38.9	80.3	12.9	2.98	147	178	88	3	1	22	M	50
Lilifen	38.8	76.7	14.7	3.05	151	182	77	0	4	8	VR-MR	67
C.I.15074	38.1	74.4	15.7	2.96	147	178	96	0	1	6	R	30
Kirac 66	37.5	82.1	14.4	3.01	148	180	102	87	3	57	VS	60
Moldova	37.5	80.0	15.9	3.04	140	171	83	0	1	8	M	50
Atlas 66	37.3	79.5	16.9	2.89	148	180	103	0	4	5	R	20
Victor I	37.0	80.7	14.2	3.24	142	179	63	0	4	70	S-VS	50
Tam 102	35.8	79.0	13.0	3.06	144	176	75	0	1	19	R-MR	50
Rousalka	35.8	80.2	15.1	3.14	139	177	68	0	1	7	MR	60
Vakka	35.7	75.6	14.7	3.08	155	184	94	5	1	55	S	40
Zenith	35.6	78.2	14.3	3.01	155	185	91	0	1	42	MS	30
Caribo	35.1	73.7	14.0	3.00	154	183	97	0	1	27	MS	60
Bezostaya 1	33.2	82.3	15.3	2.82	144	180	84	0	1	60	VS	60
Lerma Rojo 64	32.7	80.9	16.4	2.98	138	175	79	0	5	17	M	70
Jyva	30.6	75.2	14.1	3.02	157	186	91	0	1	19	MS	40
Strampelli	29.7	80.8	13.3	3.12	140	177	71	0	5	28	S	70
Starke	24.8	71.8	14.5	3.16	160	188	96	8	1	75	VS	30
Mean	38.4	78.5	14.5	3.06	147.8	180.4	84.2	5.3	1.8	29.1		46.9
Coefficient of variation (%)	6.0	0.9	2.5	--	--	1.3	5.1	168.9	--	--		--
L.S.D. of cultivar means (.05)	3.2	1.0	0.5	--	--	3.3	6.0	12.5	--	--		--
Local cultivars												
F26-70	27.8	80.7	--	--	139	175	77	0	1	63	VS	30
F35-70	37.1	81.4	--	--	144	181	76	0	1	17	M-MS	40
F54-70	36.2	81.3	--	--	144	181	80	0	1	11	MR-MS	40

a) One rep only.

SWEDEN

Svalof

COOPERATOR(S): Gosta Olsson.

DATE OF PLANTING: October 3, 1972.

PRECIPITATION DURING CYCLE OF TEST: 298 mm (March 3 - July 31, 1973).

AMOUNT OF IRRIGATION APPLIED: None.

FERTILIZER USED: N = 120 kg/ha of Ca $(NO_3)_2$; P = 24 kg/ha; K = 45 kg/ha.

GENERAL DESCRIPTION OF CLIMATIC CONDITIONS DURING TEST: A very mild winter with 100 % survival of all material. The summer was warmer than normal with a drought period during June - July.

DISEASE DEVELOPMENT: No attack of leaf, stem or stripe rust. A normal attack of mildew occurred.

INSECT, WEED OR PEST PROBLEMS: None.

DATE OF HARVEST: July 28 - August 12, 1973.

AREA HARVESTED FOR YIELD: 2.1 square meters.

DATES WHEN DIFFERENT NOTES WERE TAKEN:
Winter survival - March 22, 1973
Mildew - June 28, 1973
Height - July 10, 1973
Lodging - July 28, 1973

Correlation coefficients for agronomic and grain quality traits in the Fifth International Winter Wheat Performance Nursery grown at Svalof, Sweden, 1973.

	Yield	Test weight	Protein	Flowering	Ripening	Plant height	Lodging	Frost	Shattering
Test weight	.29**								
Protein	-.51**	.16							
Flowering	.51**	.38**	-.23*						
Ripening	.46**	.39**	-.21*	.87**					
Plant height	.04	.55**	.40**	.48**	.39**				
Lodging	-.50**	-.04	.35*	-.37**	-.36**	.21*			
Frost	-.12	-.18*	-.02	-.45**	-.31**	-.40**	.14		
Shattering	.15	.09	.01	-.04	-.08	-.19*	-.23*	.33**	
1000-kernel weight	.41**	.53**	.04	.21*	.32**	.17	-.22*	-.04	-.01

**Significant at the 1% level. *Signficant at the 5% level.

Table 33. Agronomic, grain quality, and disease data for the 30 cultivars in the Fifth International Winter Wheat Performance Nursery grown at Svalof, Sweden, 1973.

Cultivar	Yield q/ha	Test weight kg/hl	Protein %	Lysine[a] % of protein	Date of Flowering days from Jan. 1	Date of Ripening days from Jan. 1	Plant height cm	Lodging %	Shattering %	1000-Kernel weight gm	Frost damage 0-9	Pearling resistance 1-9	Mildew Sev. %
Caribo	74.8	80.1	11.8	2.89	172	218	114	0	0	37	0	6	42
Maris Nimrod	74.0	77.0	12.2	3.10	171	216	101	0	0	36	1	6	0
Clarion	71.9	79.3	12.1	3.21	173	215	105	0	0	38	0	6	30
Probstdorfer Extrem	67.3	82.4	13.7	2.88	169	212	126	33	0	36	0	7	2
Lilifen	65.7	79.1	12.9	3.04	168	214	102	0	0	44	0	6	45
Victor I	64.2	78.6	12.8	3.03	166	206	88	0	2	32	1	6	10
Zenith	64.2	80.8	13.1	3.13	171	217	109	0	0	32	0	7	2
Blueboy	63.9	78.3	11.7	3.20	169	212	111	9	0	33	0	6	32
Zlatna dolina	63.6	77.5	11.9	3.06	167	206	86	1	0	29	0	6	16
Diplomat	62.5	82.1	13.4	3.26	173	217	109	0	1	38	0	6	55
Backa	62.5	80.7	13.5	2.96	166	209	89	5	1	43	1	6	0
Marimp 3	60.7	79.3	13.4	3.13	166	206	101	4	2	32	1	6	2
Carifen 12	60.5	71.2	11.8	3.13	170	211	82	0	0	32	0	7	62
Centurk	57.2	80.4	12.8	3.05	168	206	114	35	0	29	0	7	15
Lancota (NE701132)	56.7	81.6	14.9	2.87	166	207	115	15	0	38	0	7	16
Bezostaya 1	56.2	83.6	12.7	2.97	170	215	105	0	0	40	0	7	21
Starke	55.2	82.7	13.9	3.09	176	222	116	0	0	40	0	7	6
Dacia	54.3	78.3	14.6	2.97	166	205	115	18	0	41	0	6	11
Jyva	52.5	78.7	14.5	3.05	171	218	118	1	0	33	0	7	2
Vakka	52.0	78.1	13.6	3.07	170	212	124	9	0	32	0	7	2
Sava	50.7	77.1	12.7	3.17	166	205	92	0	0	28	0	6	0
C.1.15074	50.5	81.0	14.7	3.07	169	206	120	18	0	31	0	7	17
Rousalka	50.3	77.7	13.6	3.08	161	204	83	3	0	37	0	6	25
Kirac 66	49.5	81.0	13.6	3.04	169	210	112	53	0	35	0	6	21
Atlas 66	48.9	80.0	15.5	3.09	169	215	121	38	0	33	0	6	3
Hokuei	48.1	79.6	12.6	3.08	169	215	104	38	0	31	0	6	28
Moldova	47.9	78.3	14.5	3.03	165	204	111	48	0	37	0	6	10
Strampelli	43.1	73.6	12.8	2.98	164	205	90	50	0	27	1	5	20
Tam 102	41.1	73.8	14.3	3.09	165	204	100	13	0	26	0	7	42
Lerma Rojo 64	35.7	77.4	14.1	3.12	159	202	92	48	0	33	2	5	52
Mean	56.9	79.0	13.3	3.06	168.1	210.5	105.2	14.5	0.2	34.4	0	6.3	19.6
Coefficient of variation (%)	8.9	1.1	3.6	--	0.2	0.4	3.2	47.6	151.2	4.8	116.9	1.9	--
L.S.D. of cultivar means (.05)	1.8	1.2	0.7	--	0.4	1.3	4.7	9.7	0.5	2.3	0.3	0.2	--

a) One rep only.

SWITZERLAND

Zurich

COOPERATOR(S): G. Popow; F. Weilenmann.

DATE OF PLANTING: October 13, 1972.

PRECIPITATION DURING CYCLE OF TEST: 873 mm (October 13, 1972-August 6, 1973).

AMOUNT OF IRRIGATION APPLIED: None.

FERTILIZER USED: N = 90 kg/ha; P_2O_5 = 80 kg/ha; K_2O = 240 kg/ha.

GENERAL DESCRIPTION OF CLIMATIC CONDITIONS DURING TEST: No winter kill with good growing conditions in the spring followed by a relatively dry summer.

DISEASE DEVELOPMENT: Heavy attack of mildew, slight stripe rust and very little stem rust.

INSECT, WEED OR PEST PROBLEMS: None.

DATE OF HARVEST: July 30 - August 6, 1973.

AREA HARVESTED FOR YIELD: 4.60 square meters.

DATES WHEN DIFFERENT NOTES WERE TAKEN:
Lodging - July 20, 1973
Height - July 6, 1973
Mildew - July 18, 1973
Stripe rust - July 5, 1973

Correlation coefficients for agronomic and grain quality traits of 30 cultivars in the Fifth International Winter Wheat Performance Nursery grown at Zurich, Switzerland, 1973.

	Yield	Test weight	Protein	Flowering	Plant height	Lodging
Test weight	.35**					
Protein	.05	.28**				
Flowering	.14	-.24**	-.22*			
Plant height	.06	.18	.29**	.47**		
Lodging	-.11	.18*	.28**	.01	.47**	
1000-kernel weight	.52**	.29**	.39**	-.16	.09	.02

**Significant at the 1% level. *Significant at the 5% level.

Table 34. Agronomic, grain quality, and disease data for the 30 cultivars in the Fifth International Winter Wheat Performance Nursery grown at Zurich, Switzerland, 1973.

Cultivar	Yield q/ha	Test weight kg/hl	Protein %	Lysine[a] % of protein	Date of flowering days from Jan. 1	Plant height cm	Lodging %	1000-Kernel weight gm	Stripe rust Sev. %	Stripe rust Resp.	Mildew Sev. %	Mildew Resp.
Maris nimrod	56.8	75.6	13.7	3.17	169	103	34	41	0	0	0	0-VR
Caribo	51.5	77.6	13.0	3.24	169	110	15	39	0	0	42	MS-S
Bezostaya 1	51.4	80.8	16.0	2.92	163	100	18	44	2	0-MR	16	R-MS
Backa	51.1	77.2	16.3	3.07	161	84	3	44	0	0	2	0-R
Sava	50.8	79.8	14.7	3.09	161	81	9	35	13	VR-M	4	VR-R
Probstdorfer Extrem	47.5	81.2	16.2	2.90	165	126	65	40	0	0	10	R-M
Dacia	45.7	80.1	16.0	3.06	161	110	21	44	1	0-R	70	S-VS
Clarion	44.3	73.3	14.6	3.13	169	104	0	34	0	0	52	MS-S
Marimp 3	43.9	77.0	16.4	3.07	161	95	9	37	15	R-MS	4	VR-R
Atlas 66	43.4	79.2	17.6	2.98	164	128	55	39	0	0-VR	22	MR-MS
Zenith	43.3	80.0	15.6	3.01	169	103	1	33	0	0	10	R-MR
Jyva	43.0	77.7	15.0	3.08	170	119	25	36	0	0-VR	27	M-S
Blueboy	42.9	73.9	12.8	3.25	164	109	14	37	0	0	80	VS
Centurk	42.8	81.9	14.3	3.07	164	108	70	33	4	0-MR	50	M-S
Zlatna dolina	42.7	79.1	13.7	3.17	161	78	9	35	2	0-R	32	M-S
Victor I	41.9	80.3	15.0	3.13	162	80	0	34	5	0-MR	20	M
Moldova	41.5	75.4	16.3	2.99	160	106	21	39	1	0-R	70	S-VS
Diplomat	40.9	81.1	13.6	3.12	170	105	3	39	0	0	65	S-VS
Vakka	40.1	75.4	15.9	2.98	170	115	39	36	0	0	37	MS-S
Starke	39.4	77.5	13.1	3.16	173	116	15	33	0	0	3	VR-R
Strampelli	38.2	79.7	13.4	3.06	159	90	30	36	0	0	62	S-VS
Rousalka	38.2	78.6	15.1	3.15	156	64	8	41	0	0	62	S-VS
Lilifen	37.9	73.9	15.0	3.15	168	91	0	38	0	0	80	VS
Lancota (NE701132)	36.4	78.1	17.1	2.90	164	118	56	39	1	0-R	75	S-VS
C.I.15074	35.6	78.9	17.0	3.17	163	115	46	34	26	M-MS	72	S-VS
Hokuei	35.5	75.0	13.8	3.05	164	98	63	34	0	0	40	MS-S
Tam 102	30.7	77.2	13.4	3.16	160	89	10	31	7	0-MS	80	VS
Carifen 12	27.4	67.6	13.6	3.39	167	75	9	32	0	0-VR	80	VS
Kirac 66	26.0	77.9	15.7	3.22	164	124	97	37	0	0	80	VS
Lerma Rojo 64	25.5	78.3	15.2	3.04	156	90	14	35	0	0	80	VS
Mean	41.2	77.7	15.0	3.09	164.1	101.0	25.2	37.0	2.6		44.2	
Coefficient of variation (%)	10.7	1.1	2.7	--	0.4	5.8	59.5	3.5	--		--	
L.S.D. of cultivar means (.05)	6.2	1.2	0.6	--	1.0	8.2	21.1	1.8	--		--	

a) One rep only.

TURKEY

Ankara

COOPERATOR(S): A. Demirlicakmak; A. Bayriktar; Y. Ergiin; K. Yakar; A. Klatt.

DATE OF PLANTING: October 17, 1972.

PRECIPITATION DURING CYCLE OF TEST: 290 mm from October 1972 - July 1973, very poorly distributed. No rain from April 10 - June 15.

AMOUNT OF IRRIGATION APPLIED: None.

FERTILIZER USED: Preplant: N = 27 kg/ha; P_2O_5 = 70 kg/ha; fertilizer broadcast as diammonium phosphate (DAP). In the spring 40 kg/ha nitrogen as (NH_4NO_3) was topdressed.

GENERAL DESCRIPTION OF CLIMATIC CONDITIONS DURING TEST: Cold winter with fair to good moisture, especially in March. It was very dry from April 10 - June 15. This drought affected yield levels. No winter kill and only some cold damage led to excellent stands and variety development.

DISEASE DEVELOPMENT: None.

INSECT, WEED OR PEST PROBLEMS: Some sawfly.

DATE OF HARVEST: July 25, 1973.

AREA HARVESTED FOR YIELD: 6 square meters.

DATES WHEN DIFFERENT NOTES WERE TAKEN: None reported.

Correlation coefficients for agronomic and grain quality traits of 30 cultivars in the Fifth International Winter Wheat Performance Nursery grown at Ankara, Turkey, 1973.

	Yield	Flowering
Flowering	-.19*	
Protein	-.65**	.06

* Significant at the 5% level.

** Significant at the 1% level.

Table 35. Agronomic, grain quality, and disease data for the 30 cultivars grown in the Fifth International Winter Wheat Performance Nursery grown at Ankara, Turkey, 1973.

Cultivar	Yield g/ha	Test weight kg/hl	Protein %	Lysine[a] % of protein	Date of flowering days from Jan. 1	Cold reading
Probstdorfer Extrem	24.2	78.8	15.0	2.84	159	2
C.I. 15074	22.8	81.1	16.4	3.10	155	2
Kirac 66	22.4	79.3	16.0	3.03	154	3
Clarion	20.8	72.1	14.6	3.01	165	2
Bezostaya 1	20.8	80.2	14.5	3.03	157	2
Moldova	20.8	78.6	16.3	3.04	151	2
Victor I	20.8	79.0	14.6	3.10	154	4
Centurk	20.0	80.5	14.3	3.10	155	3
Blueboy	19.9	74.9	14.7	3.11	158	3
Hokuei	19.8	77.2	14.7	2.99	158	3
Backa	19.1	79.3	15.8	3.07	154	5
Zlatna dolina	19.0	78.1	16.1	3.12	153	3
Carifen 12	19.0	69.9	15.4	3.15	161	3
Lancota (NE701132)	18.6	79.0	16.7	2.93	157	2
Maris Nimrod	18.5	70.1	14.3	2.94	166	3
Lerma Rojo 64	18.3	81.0	15.3	2.98	148	5
Caribo	18.3	70.7	15.2	3.05	165	3
Rousalka	18.0	79.8	16.1	3.00	149	3
Atlas 66	17.3	75.1	18.4	2.90	159	3
Dacia	17.0	77.6	17.3	3.06	153	2
Diplomat	16.1	73.6	17.2	3.01	166	3
Vakka	15.6	79.8	16.8	2.99	167	2
Tam 102	15.6	78.2	16.5	2.95	152	2
Strampelli	15.1	79.7	15.0	2.92	151	5
Starke	15.1	70.1	15.8	3.13	168	3
Zenith	14.7	72.6	17.2	3.05	162	3
Marimp 3	14.1	78.3	16.7	3.11	155	5
Sava	12.4	77.4	16.6	2.98	155	4
Lilifen	11.7	74.9	16.6	3.06	161	5
Jyva	11.3	68.1	17.6	2.96	166	3
Mean	17.9	77.5	15.9	3.02	157.7	3.1
Coefficient of variation (%)	19.9	--	6.1	--	0.8	--
L.S.D. of cultivar means (.05)	5.0	--	1.4	--	1.7	--

a) One rep only.

TURKEY

Erzurum

COOPERATOR(S): T. Yilimaz.

DATE OF PLANTING: October 5, 1972.

PRECIPITATION DURING CYCLE OF TEST: 380 mm.

AMOUNT OF IRRIGATION APPLIED: Three irrigations with a total of 220 mm.

FERTILIZER USED: N = 50 kg/ha; P_2O_5 = 50 kg/ha.

GENERAL DESCRIPTION OF CLIMATIC CONDITIONS DURING TEST: Rainfall was approximately 60% of normal. Temperatures during September and October were higher than normal, but were lower than normal over the next five months. The remainder of the growing season was warmer than normal.

DISEASE DEVELOPMENT: No incidence of rusts.

INSECT, WEED OR PEST PROBLEMS: Weeds were controlled by hand. Insects were not a problem. Birds and weasels caused some damage.

DATE OF HARVEST: August 8, 1973.

AREA HARVESTED FOR YIELD: 4.0 square meters.

DATES WHEN DIFFERENT NOTES WERE TAKEN: Not reported.

Correlation coefficients for agronomic and grain quality traits of 30 cultivars in the Fifth International Winter Wheat Performance Nursery grown at Erzurum, Turkey, 1973.

	Yield	Test weight	Protein
Test weight	-.05		
Protein	-.30	.37*	
Winter survival	.92**	-.05	-.35

**Significant at the 1% level. *Significant at the 5% level.

Table 36. Agronomic and grain quality data for the 30 cultivars in the Fifth International Winter Wheat Performance Nursery grown at Erzurum, Turkey, 1973.

Cultivar	Yield q/ha	Test[a] weight kg/hl	Protein[a] %	Lysine[a] % of protein	Winter survival %
Centurk	42.8	83.0	12.5	3.17	95.0
Caribo	40.2	76.0	13.0	3.14	89.0
Blueboy	39.7	78.5	11.9	3.14	88.0
Hokuei	38.8	82.2	13.2	3.03	86.0
Kirac 66	38.3	81.0	14.0	3.10	85.0
Clarion	38.4	76.0	12.2	3.24	85.0
Zenith	37.6	77.6	13.6	2.99	83.0
Carifen 12	37.4	75.2	13.5	3.11	83.0
Probstdorfer Extren	37.0	81.5	14.5	2.84	82.0
Maris Nimrod	37.0	77.0	11.7	3.17	82.0
Bezostaya 1	36.9	84.0	13.6	2.93	82.0
Lancota (NE701132)	36.4	82.0	14.1	2.91	81.0
C.I.15074	35.3	83.0	15.2	3.04	78.0
Jyva	33.3	76.2	12.4	3.20	74.0
Tam 102	32.8	81.0	13.4	2.96	73.0
Dacia	31.0	80.7	15.5	3.00	69.0
Diplomat	30.7	78.0	13.3	3.09	68.0
Atlas 66	28.8	80.5	16.4	2.89	64.0
Rousalka	28.1	83.0	15.0	2.93	53.0
Sava	26.7	79.0	13.1	3.23	59.0
Vakka	25.4	77.2	12.6	3.10	56.0
Backa	23.7	80.0	13.9	3.11	53.0
Lilifen	23.4	72.0	15.0	2.99	52.0
Moldova	23.2	81.5	15.1	2.89	52.0
Starke	23.0	74.0	13.0	3.05	51.0
Zlatna dolina	20.4	79.5	13.7	3.06	45.0
Lerma Rojo 64	18.6	84.0	15.0	2.92	41.0
Marimp 3	17.5	80.0	13.9	3.12	35.0
Strampelli	16.8	83.3	13.8	3.06	37.0
Victor 1	14.1	80.0	13.7	3.34	31.0
Mean	30.4	79.6	13.7	--	67.1
Coefficient of variation (%)	15.9	--	--	--	--
L.S.D. of cultivar means (.05)	6.8	--	--	--	--

a) One rep only.

TURKEY

Eskisehir

COOPERATOR(S): H. Kutluk; E. J. Rice; E. Karma; F. Auay.

DATE OF PLANTING: October 15, 1972.

PRECIPITATION DURING CYCLE OF TEST: 393 mm from September 1, 1972 to August 31, 1973.

AMOUNT OF IRRIGATION APPLIED: None.

FERTILIZER USED: N = 40 kg/ha; P_2O_5 = 60 kg/ha.

GENERAL DESCRIPTION OF CLIMATIC CONDITIONS DURING TEST: The lowest temperature recorded when frost damage occurred was -14°C.

DISEASE DEVELOPMENT: Not reported.

INSECT, WEED OR PEST PROBLEMS: Not reported.

DATE OF HARVEST: July 20, 1973.

AREA HARVESTED FOR YIELD: 8.0 square meters.

DATES WHEN DIFFERENT NOTES WERE TAKEN:
Frost damage - March 10, 1973
Lodging - July 28, 1973
Height - July 28, 1973
Shattering - July 20 - August 5, 1973

Correlation coefficients for agronomic and grain quality traits of 30 cultivars in the Fifth International Winter Wheat Performance Nursery grown at Eskisehir, Turkey, 1973.

	Yield	Test weight	Protein	Flowering	Ripening	Plant height	Lodging
Test weight	.01						
Protein	.01	.03					
Flowering	-.04	-.09	-.14				
Ripening	-.01	-.04	-.12	.81			
Plant height	-.09	.08	.34**	-.07	-.04		
Lodging	-.05	-.04	.18	-.17	-.13	.40**	
Frost	-.19	.01	-.04	-.26*	-.17	-.31**	.05

**Significant at the 1% level. *Significant at the 5% level.

Table 37. Agronomic, grain quality, and disease data for the 30 cultivars in the Fifth International Winter Wheat Performance Nursery grown at Eskisehir, Turkey, 1973.

Cultivar	Yield q/ha	Test weight kg/hl	Protein %	Lysine[a] % of protein	Date of Flowering (days from Jan. 1)	Date of Ripening (days from Jan. 1)	Plant height cm	Lodging %	Frost damage 0-9	Rust: Stripe Sev. %	Rust: Stripe Resp.	Rust: Leaf Sev. %	Rust: Leaf Resp.	Rust: Stem Sev. %	Rust: Stem Resp.
Maris Nimrod	32.6	75.1	9.5	2.71	158	217	80	1	5	0	0	0	0-MS	8	0-S
Centurk	30.8	80.1	9.0	2.86	148	206	90	1	3	5	0-MS	0	0-MS	0	0
Sava	29.9	76.1	9.3	2.75	151	214	71	1	6	3	0-MS	0	0-MS	0	0-MS
Carifen 12	29.5	74.3	8.3	2.99	155	212	72	1	4	0	0	2	MS	2	MS
Tam 102	29.4	78.8	9.5	2.93	147	203	80	1	3	2	0-MS	2	0-MS	0	0
Blueboy	28.5	77.3	8.7	2.97	150	209	94	1	4	0	0	0	0-MS	3	0-S
Bezostaya 1	28.1	80.7	8.8	2.87	151	207	86	1	3	0	0	0	0-MS	0	0
Kirac 66	27.9	81.5	10.3	2.89	150	207	112	2	3	5	0-MS	3	MS	0	0
Clarion	27.4	76.7	8.8	2.99	167	220	74	1	3	0	0	0	0-MS	0	0-S
Probstdorfer Extrem	26.9	82.7	10.2	2.66	152	213	104	1	3	0	0	1	MS	0	0
Moldova	26.8	78.6	9.7	2.91	149	204	99	1	3	0	0	0	0-MS	0	0-MS
Zenith	26.8	78.1	9.6	2.93	153	209	85	1	3	0	0	0	0-MS	0	0-MS
Caribo	26.8	76.6	8.6	2.59	158	217	84	1	3	1	0-MS	2	MS-S	11	0-S
Rousalka	26.5	78.9	9.9	2.87	147	205	74	1	3	0	0	0	0	0	0
Dacia	26.5	79.5	10.1	2.91	149	205	94	1	3	0	0	0	0	0	0-MS
Hokuei	26.4	80.5	8.2	2.92	149	206	85	1	3	0	0	1	MS	0	0
Marimp 3	26.3	78.6	9.6	2.88	147	203	78	1	7	0	0	1	MS-S	1	0-S
Lancota (NE701132)	26.3	80.9	9.5	2.67	149	212	96	1	3	5	0-MS	0	0-R	0	0
Backa	25.8	79.5	10.0	2.95	147	204	73	1	6	0	0	0	0-MS	0	0-S
Zlatna dolina	25.3	77.0	9.6	2.99	153	213	64	1	4	0	0	0	0	0	0
Vakka	25.2	76.0	9.2	2.78	156	214	93	1	3	0	0	1	MS	0	0-S
Victor I	25.2	78.1	9.4	3.00	149	206	64	1	7	0	0	1	MS	0	0
Starke	25.1	78.7	9.9	3.07	170	220	93	1	3	0	0	2	MS-S	0	0-MS
Lilifen	24.7	76.7	9.6	2.93	153	213	70	1	5	10	MS-S	0	0	0	0
Diplomat	24.3	78.5	9.6	2.90	157	214	81	1	3	0	0	3	MS-S	3	0-S
Atlas 66	23.8	80.8	10.4	2.97	152	213	110	2	5	20	MS-S	0	0-MS	0	0
Lerma Rojo 64	23.5	79.1	9.0	3.08	146	202	88	2	7	8	MS	0	0-MR	0	0
C.I.15074	23.4	65.7	10.6	3.08	148	205	98	2	3	83	S	0	0	0	0
Jyva	21.3	75.0	8.6	2.93	158	215	86	1	3	0	0	2	MR-MS	0	0
Strampelli	18.4	77.9	8.2	2.82	150	209	86	1	6	11	0-MS	0	0-MS	0	0
Mean	26.3	77.9	9.4	2.89	152.3	209.8	85.4	1.2	4.0	5.1		0.7		0.9	
Coefficient of variation (%)	12.9	6.7	1.5	--	1.0	1.4	4.6	34.0	8.8	--		--		--	
L.S.D. of cultivar means (.05)	5.6	NS	0.2	--	2.4	4.8	6.4	0.7	0.6	--		--		--	

a) One rep only.

UNITED STATES

Colorado

COOPERATOR(S): J. R. Welsh.

DATE OF PLANTING: September 26, 1972.

PRECIPITATION DURING CYCLE OF TEST: 292 mm.

AMOUNT OF IRRIGATION APPLIED: 100 mm.

FERTILIZER USED: None.

GENERAL DESCRIPTION OF CLIMATIC CONDITIONS DURING TEST: Normal

DISEASE DEVELOPMENT: Race 15B-2 of stem rust in epiphytotic proportions from artificial inoculation.

INSECT, WEED OR PEST PROBLEMS: None.

DATE OF HARVEST: August 3, 1973.

AREA HARVESTED FOR YIELD: 3.7 square meters.

DATES WHEN DIFFERENT NOTES WERE TAKEN:
Flowering - when appropriate
Others at harvest

Correlation coefficients for agronomic and grain quality traits of 30 cultivars in the Fifth International Winter Wheat Performance Nursery grown at Fort Collins, Colorado, USA, 1973.

	Yield	Test weight	Protein	Flowering	Plant height
Test weight	.79**				
Protein	.29**	.47**			
Flowering	-.72**	-.82**	-.31		
Plant height	-.20	-.16	-.03	.28	
Lodging	.11	.11	-.27	-.16	.39*

**Significant at the 1% level. *Significant at the 5% level.

Table 38. Agronomic, grain quality, and disease data for the 30 cultivars in the Fifth International Winter Wheat Performance Nursery grown at Fort Collins, Colorado, U.S.A., 1973.

Cultivar	Yield q/ha	Test[a] weight kg/hl	Protein %	Lysine[a] % of protein	Date of[a] flowering days from Jan. 1	Plant[a] height cm	Lodging[a] %	Stem rust[a] Sev. %	Stem rust[a] Resp.
Sava	72.4	73.8	14.7	3.05	159	90	0	1	R
Tam 102	69.2	73.0	13.7	3.05	158	100	40	30	S
Lancota (NE701132)	66.4	78.3	16.3	2.87	159	115	40	0	0
Rousalka	65.8	73.9	14.4	3.01	158	85	0	70	S
Centurk	64.4	79.6	15.1	3.07	160	115	30	0	0
C.I.15074	61.6	79.3	17.3	2.92	161	110	0	1	R
Strampelli	61.5	77.9	15.5	2.96	159	85	5	80	S
Zlatna dolina	59.4	75.2	14.7	3.05	159	75	0	1	R
Dacia	58.2	74.3	14.8	3.04	158	100	30	40	S
Probstdorfer Extrem	57.3	75.6	13.6	2.85	161	104	5	60	S
Lilifen	56.7	71.5	15.7	3.09	161	95	0	70	S
Moldova	55.7	75.5	16.0	2.93	157	103	5	20	S
Marimp 3	55.4	74.9	15.5	3.04	160	98	0	70	S
Kirac 66	54.5	75.1	15.4	3.05	160	115	70	5	R
Atlas 66	53.8	75.3	17.8	2.90	161	125	0	40	S
Backa	53.2	74.3	13.8	3.04	160	85	0	99	S
Victor I	52.5	74.8	15.1	2.98	160	82	0	10	R
Blueboy	49.9	58.8	12.1	3.08	162	125	30	90	S
Bezostaya 1	48.5	68.9	13.0	3.02	162	107	0	99	S
Lerma Rojo 64	46.4	76.2	16.9	2.93	152	90	0	5	R
Zenith	44.2	61.9	13.2	2.84	167	105	0	90	S
Hokuei	41.9	69.8	12.5	2.97	161	110	99	90	S
Maris Nimrod	41.6	53.5	13.4	3.21	167	110	0	90	S
Caribo	39.2	57.8	14.1	3.12	167	100	0	99	S
Clarion	37.4	51.3	15.5	3.19	171	105	0	99	S
Carifen 12	36.2	46.6	13.8	3.33	168	80	0	99	S
Diplomat	34.8	61.9	14.3	3.23	171	100	0	80	S
Vakka	30.2	54.3	13.1	3.30	167	112	50	70	S
Jyva	26.2	56.2	13.3	3.25	167	117	0	70	S
Starke	22.7	54.6	15.5	3.15	173	110	0	80	S
Mean	50.6	68.5	14.7	3.05	162.1	101.8	13.5	55.3	
Coefficient of variation (%)	9.2	--	1.9	--	--	--	--	--	
L.S.D. of cultivar means (.05)	6.6	NS	0.4	--	NS	NS	NS	--	

a) One rep only.

UNITED STATES

Nebraska

COOPERATOR(S): J. W. Schmidt; V. A. Johnson.

DATE OF PLANTING: September 22, 1972.

PRECIPITATION DURING CYCLE OF TEST: 776 mm.

AMOUNT OF IRRIGATION APPLIED: None.

FERTILIZER USED: N = 45 kg/ha; P_2O_5 = kg/ha.

GENERAL DESCRIPTION OF CLIMATIC CONDITIONS DURING TEST: Severe cold in early December followed by ice cover in late winter contributed to winter damage. Generally good growing season except for the winter kill.

DISEASE DEVELOPMENT: Stem rust and leaf rust were light but were not a factor in yields.

INSECT, WEED OR PEST PROBLEMS: None.

DATE OF HARVEST: July 16, 1973.

AREA HARVESTED FOR YIELD: 1.48 square meters.

DATES WHEN DIFFERENT NOTES WERE TAKEN:
Winter survival - April 16, 1973
Height - July 6, 1973

Correlation coefficients for agronomic and grain quality traits of 30 cultivars in the Fifth International Winter Wheat Performance Nursery grown at Lincoln, Nebraska, USA, 1973.

	Yield	Flowering
Flowering	-.59**	
Winter survival	.91**	

**Significant at the 1% level.

Table 39. Agronomic, grain quality, and disease data for the 30 cultivars in the Fifth International Winter Wheat Performance Nursery grown at Lincoln, Nebraska, U.S.A., 1973.

Cultivar	Yield q/ha	Protein %	Lysine[a] % of protein	Date of flowering days from Jan. 1	Plant height cm	Winter survival %	1000-Kernel weight gm
Centurk	41.0	15.9	3.23	153	97	91	27
Lancota (NE701132)	39.4	18.5	3.01	154	101	85	31
C.I.15074	36.2	18.3	3.05	153	101	94	30
Vakka	21.5	18.0	3.20	163	87	84	24
Probstdorfer Extrem	20.2	18.1	2.88	159	101	38	32
Bezostaya 1	19.8	19.1	2.82	156	90	29	38
Jyva	19.3	18.7	3.05	163	95	78	25
Hokuei	19.1	16.5	3.21	160	80	31	26
Blueboy	16.6	16.7	3.22	160	76	8	29
Tam 102	14.8	16.5	3.20	157	84	15	27
Moldova	12.8	19.7	3.14	155	83	13	33
Dacia	2.2	20.4	3.08	160	70	3	32
Caribo	0.4	20.3	2.97	164	84	1	--
Kirac 66	0.4	--	--	165	--	1	--
Rousalka	0.2	18.1	3.11	151	--	0	--
Zenith	0.1	--	--	151	--	1	--
Starke	0.0	--	--	173	--	1	--
Strampelli	0.0	--	--	--	--	0	--
Victor I	0.0	--	--	--	--	0	--
Carifen 12	0.0	--	--	162	--	1	--
Zlatna dolina	0.0	--	--	--	--	0	--
Atlas 66	0.0	--	--	161	--	1	--
Diplomat	0.0	--	--	170	--	0	--
Maris Nimrod	0.0	--	--	--	--	0	--
Marimp 3	0.0	--	--	--	--	0	--
Sava	0.0	--	--	--	--	0	--
Lilifen	0.0	--	--	--	--	0	--
Clarion	0.0	--	--	--	--	0	--
Lerma Rojo 64	0.0	--	--	--	--	0	--
Backa	0.0	--	--	--	--	0	--
Mean	8.8	18.2	3.08	159.5	87.6	19.2	29.5
Coefficient of variation (%)	49.1	--	--	1.0	--	43.3	--
L.S.D. of cultivar means (.05)	6.1	--	--	2.7	--	11.7	--

a) One rep only.

UNITED STATES

New York

COOPERATOR(S): N. F. Jensen.

DATE OF PLANTING: September 28, 1972.

PRECIPITATION DURING CYCLE OF TEST: 345 mm during growing season (April 1 - July 31, 1973). Total precipitation August 1, 1972 - July 31, 1973 was 938 mm.

FERTILIZER USED: Preplant - N = 45 kg/ha; P_2O_5 = 67 kg/ha; K_2O = 67 kg/ha. Nitrogen applied as topdressing (NH_4NO_3) = 56 kg/ha.

GENERAL DESCRIPTION OF CLIMATIC CONDITIONS DURING TEST: Normal.

DISEASE DEVELOPMENT: Severe leaf rust.

INSECT, WEED OR PEST PROBLEMS: Minimal.

DATE OF HARVEST: Last week of July, 1973.

AREA HARVESTED FOR YIELD: 3.0 square meters.

DATES WHEN DIFFERENT NOTES WERE TAKEN:
Winter survival - April 25, 1973
Height - Mid-July, 1973

Correlation coefficients for agronomic and grain quality traits of 30 cultivars in the Fifth International Winter Wheat Performance Nursery grown at Ithaca, New York, USA, 1973.

	Yield	Plant height
Plant height	.24**	
Winter survival	.65**	.43**

**Significant at the 1% level.

Table 40. Agronomic, grain quality, and disease data for the 30 cultivars in the Fifth International Winter Wheat Performance Nursery grown at Ithaca, New York, U.S.A., 1973.

Cultivar	Yield q/ha	Test weight[a] kg/hl	Protein[a] %	Lysine[a] % of protein	Plant height cm	Winter survival %
Blueboy	45.9	18.9	10.8	3.02	95	92
Caribo	40.8	18.1	11.6	3.26	89	88
Zenith	40.7	18.5	13.0	3.18	90	84
Maris Nimrod	39.2	17.2	12.0	3.30	84	87
Backa	39.2	19.8	13.7	3.19	75	81
Zlatna dolina	39.0	18.7	12.2	3.17	65	79
Probstdorfer Extrem	38.5	20.0	12.1	2.98	107	87
Marimp 3	37.6	19.6	13.3	3.17	80	71
Dacia	37.3	19.5	13.1	3.02	97	82
Sava	35.8	18.5	12.5	3.24	68	87
Hokuei	35.5	19.7	12.2	3.15	92	94
Atlas 66	34.7	19.6	15.2	3.16	107	82
Bezostaya 1	34.2	20.0	12.9	3.05	86	95
Jyva	33.9	17.5	12.3	3.27	108	82
Diplomat	32.8	17.1	12.5	3.21	91	89
Clarion	32.2	17.2	12.9	3.21	85	84
Moldova	31.7	19.4	14.3	3.13	100	84
Vakka	31.2	17.8	13.3	3.24	107	87
C.I.15074	30.7	19.9	13.4	3.20	99	89
Centurk	30.0	19.4	13.2	3.22	94	92
Strampelli	29.6	18.9	12.5	3.08	72	70
Tam 102	28.1	17.9	12.7	3.16	81	89
Starke	28.0	16.9	12.8	3.29	108	86
Rousalka	27.7	19.2	14.7	3.13	68	87
Lancota (NE701132)	26.8	19.8	14.5	3.11	100	88
Carifen 12	26.7	15.3	12.1	3.45	63	81
Victor I	25.1	18.1	13.8	3.27	63	50
Kirac 66	21.7	18.9	13.9	3.23	102	74
Lilifen	21.2	17.8	14.0	3.17	77	48
Lerma Rojo 64	4.7	17.9	16.0	3.17	65	8
Mean	32.0	18.6	13.1	3.18	87.2	79.7
Coefficient of variation (%)	13.8	--	--	--	4.0	7.3
L.S.D. of cultivar means (.05)	6.2	--	--	--	4.9	8.2

a) One rep only.

UNITED STATES

North Carolina

COOPERATOR(S): C. F. Murphy.

DATE OF PLANTING: October 11, 1972.

PRECIPITATION DURING CYCLE OF TEST: 1090 mm, October 1, 1972 - June 30, 1973.

AMOUNT OF IRRIGATION APPLIED: Not reported.

FERTILIZER USED: N = 101 kg/ha; P_2O_5 = 101 kg/ha; K_2O = 101 kg/ha.

GENERAL DESCRIPTION OF CLIMATIC CONDITIONS DURING TEST: Heavy fall and early spring growth with severe cold damage. Yield and quality hurt badly by successive days of rain at maturity.

DISEASE DEVELOPMENT: Some mildew, rust and barley yellow dwarf virus (BYDV).

INSECT, WEED OR PEST PROBLEMS: None reported.

DATE OF HARVEST: June 25, 1973.

AREA HARVESTED FOR YIELD: 1.48 square meters.

DATES WHEN DIFFERENT NOTES WERE TAKEN:
Mildew - May 1, 1973
Height - May 29, 1973
Lodging - May 29, 1973

Correlation coefficients for agronomic and grain quality traits of 30 cultivars in the Fifth International Winter Wheat Performance Nursery grown at Rowan County, North Carolina, USA, 1973.

	Yield
Winter survival	.58**

**Significant at the 1% level.

Table 41. Agronomic, grain quality, and disease data for the 30 cultivars in the Fifth International Winter Wheat Performance Nursery grown at Rowan County, North Carolina, U.S.A., 1973.

Cultivar	Yield q/ha	Test weight[a] kg/hl	Protein %	Lysine[a] % of protein	Plant height cm	Lodging %	Winter survival %	Mildew[b] Sev. %
Dacia	32.8	69.4	15.9	3.28	105	24	98	40
Centurk	29.8	68.2	15.1	3.22	106	50	94	30
Tam 102	27.1	58.2	14.4	3.30	98	30	96	40
Bezostaya 1	26.3	69.3	15.2	3.07	89	16	95	40
Sava	24.8	64.9	15.3	3.26	75	3	71	5
C.I.15074	24.3	69.1	16.9	3.15	109	43	96	40
Blueboy	21.6	61.1	13.8	3.31	98	11	89	40
Maris Nimrod	19.5	54.6	14.1	3.45	93	4	73	13
Atlas 66	19.1	66.0	18.1	3.00	98	28	29	30
Lancota (NE701132)	18.0	64.1	16.0	3.12	98	48	96	40
Caribo	16.9	54.6	16.9	3.26	93	5	74	40
Zlatna dolina	16.8	65.8	16.2	2.91	72	3	78	13
Rousalka	15.3	66.7	15.8	3.11	72	1	79	13
Carifen 12	14.6	35.3	15.7	3.39	72	5	70	23
Moldova	14.5	65.9	17.8	3.14	92	33	89	40
Probstdorfer Extrem	14.0	58.8	17.5	3.14	97	40	98	20
Hokuei	13.6	57.3	14.7	3.16	99	80	95	23
Kirac 66	13.5	61.4	14.7	3.31	110	8	50	40
Zenith	12.8	50.1	18.8	3.16	90	16	93	23
Diplomat	11.5	51.2	19.6	3.31	92	1	90	30
Clarion	10.2	43.1	19.8	3.26	86	0	71	40
Vakka	9.0	56.1	18.1	3.16	99	50	96	30
Jyva	8.7	55.5	18.9	3.28	100	24	96	30
Backa	8.6	64.5	15.8	3.26	61	0	16	5
Starke	4.8	42.6	19.4	3.46	97	5	91	5
Marimp 3	4.1	--	15.1	3.30	68	0	7	--
Lilifen	2.3	--	17.2	3.45	72	0	4	--
Strampelli	0.8	--	17.8	3.30	66	0	3	--
Victor I	0.0	--	--	--	--	--	0	--
Lerma Rojo 64	0.0	--	--	--	--	--	0	--
Mean	14.5	59.0	16.6	3.23	89.5	18.9	67.8	29.3
Coefficient of variation (%)	22.0	--	--	--	--	--	9.9	--
L.S.D. of cultivar means (.05)	4.5	--	--	--	--	--	9.4	--

a) One rep only.
b) Two reps only.

UNITED STATES

Oklahoma

COOPERATOR(S): E. L. Smith; L. H. Edwards.

DATE OF PLANTING: October 2, 1972.

PRECIPITATION DURING CYCLE OF TEST: 997 mm July 1, 1972 - June 30, 1973.

AMOUNT OF IRRIGATION APPLIED: None.

FERTILIZER USED: N = 20 kg/ha of NH_4NO_3; P_2O_5 = 50 kg/ha. Topdressed with nitrogen at 45 kg/ha on February 9, 1973.

GENERAL DESCRIPTION OF CLIMATIC CONDITIONS DURING TEST: Cool, wet conditions during fall and winter with excellent growing conditions later.

DISEASE DEVELOPMENT: Leaf rust, powdery mildew and septoria. Leaf rust severe on some entries.

INSECT, WEED OR PEST PROBLEMS: None.

DATE OF HARVEST: June 13, 1973.

AREA HARVESTED FOR YIELD: 1.48 square meters.

DATES WHEN DIFFERENT NOTES WERE TAKEN:
Heading - April-May, 1973
Height - June 10, 1973
Disease notes - May 16-21, 1973
Ripening - June, 1973
Lodging - at ripening date

Correlation coefficients for agronomic and grain quality traits of 30 cultivars in the Fifth International Winter Wheat Performance Nursery grown at Stillwater, Oklahoma, USA, 1973.

	Yield	Protein	Flowering	Ripening	Plant height	Lodging
Protein	-.64**					
Flowering	-.82**	.59**				
Ripening	-.78**	.55**	.96**			
Plant height	-.00	.21*	.15	.16		
Lodging	.06	.06	-.30**	-.30**	.21*	
Winter survival	-.15	.22*	.26**	.17	.29**	-.04

**Significant at the 1% level. *Significant at the 5% level.

Table 42. Agronomic, grain quality, and disease data for the 30 cultivars in the Fifth International Winter Wheat Performance Nursery grown at Stillwater, Oklahoma, U.S.A., 1973.

Cultivar	Yield q/ha	Test[a] weight kg/hl	Protein %	Lysine[a] % of protein	Date of Flowering days from Jan. 1	Date of Ripening days from Jan. 1	Plant height cm	Lodging %	Winter survival %	Leaf rust Sev. %	Leaf rust Resp.	Mildew Sev. %	Tillers/ sq. ft.	Kernels/[b] spike	1000-[c] kernel weight gm
Zlatna dolina	50.6	75.8	12.5	3.08	116	152	89	2	100	0	0-S	2	45	42	34
Sava	50.4	76.8	12.7	3.18	115	153	94	1	100	1	0-S	0	42	44	31
Bezostaya 1	48.5	81.0	13.6	2.96	119	156	105	8	100	0	0-S	22	52	32	40
Backa	48.3	78.0	14.8	2.89	116	153	98	2	98	20	0-S	0	32	38	40
Blueboy	47.7	72.5	13.3	3.00	119	159	112	7	100	6	0-S	13	65	39	32
Rousalka	47.6	78.3	14.8	3.00	110	151	88	0	100	0	0-S	2	45	29	41
Strampelli	46.4	77.9	13.1	3.04	114	151	97	50	93	7	0-S	2	45	42	35
Probstdorfer Extrem	43.3	80.5	15.5	2.79	130	163	121	4	100	5	0-S	0	59	29	34
Marimp 3	43.2	75.7	13.5	3.09	115	153	104	4	99	15	0-S	0	41	44	32
Victor I	43.2	75.3	13.9	3.06	113	151	77	0	89	20	0-S	0	41	43	32
Lancota (NE701132)	41.8	80.5	15.0	2.95	124	159	118	8	100	0	0-S	2	65	31	34
Centurk	41.4	78.9	14.1	3.14	119	155	112	18	100	12	0-S	0	77	31	30
Dacia	40.4	77.4	16.0	3.02	123	158	118	7	100	0	0-S	1	50	30	39
Tam 102	38.0	73.0	14.8	3.05	123	157	109	1	100	6	0-S	22	58	37	26
Lilifen	35.9	73.9	14.6	3.05	126	166	99	0	88	0	0-S	17	41	40	32
Hokuei	34.7	73.6	13.3	3.02	126	163	110	19	100	5	0-S	36	68	31	28
Moldova	33.1	76.8	16.4	2.93	112	150	109	60	100	10	0-S	0	46	30	41
Kirac 66	33.1	78.6	14.6	3.07	125	163	119	7	98	39	0-S	3	61	29	34
C.I.15074	33.1	80.6	15.5	3.08	127	160	121	2	100	17	0-S	12	90	27	29
Atlas 66	32.1	77.6	17.4	2.99	124	160	120	30	98	5	0-S	0	56	31	32
Clarion	30.9	70.5	16.2	3.06	137	169	98	1	100	1	0-S	12	52	38	24
Zenith	30.4	74.7	16.4	2.97	134	167	102	4	100	25	0-S	0	54	36	25
Caribo	30.1	72.3	16.7	2.94	134	167	103	1	100	10	0-S	31	52	34	28
Carifen 12	24.8	58.2	14.1	3.24	130	163	80	0	100	25	0-S	2	68	31	25
Vakka	24.6	71.4	16.1	2.95	136	166	109	7	100	25	0-S	3	53	33	26
Maris Nimrod	21.4	63.1	14.8	3.12	134	167	99	2	100	40	0-S	0	51	32	25
Jyva	20.0	72.6	16.7	2.98	138	168	110	4	100	25	0-S	3	54	31	25
Diplomat	17.0	71.6	17.4	3.14	138	168	97	1	100	30	0-S	31	55	27	25
Starke	9.8	66.8	17.3	3.20	141	172	95	2	100	10	0-S	0	34	32	19
Lerma Rojo 64	0.0	--	--	--	--	--	--	--	5	--	--	--	--	--	--
Mean	35.9	74.6	15.0	3.03	124.8	160.0	103.9	8.7	95.6	12.4		7.4	53.6	34.2	30.9
Coefficient of variation (%)	9.4	--	5.4	--	0.5	0.5	3.6	112.3	1.5	--		--	16.9	8.0	6.5
L S.D. of cultivar means (.05)	4.8	--	1.1	--	0.9	1.1	5.3	13.6	2.1	--		--	--	--	--

a) One rep only.
b) Average of 10 primary spikes.
c) Based on seed obtained from 10 spikes.

UNITED STATES

Oregon

COOPERATOR(S): W. F. Kronstad; M. L. Powelson.

DATE OF PLANTING: November 15, 1972.

PRECIPITATION DURING CYCLE OF TEST: 673 mm.

AMOUNT OF IRRIGATION APPLIED: None.

FERTILIZER USED: N = 56 kg/ha (NH_4NO_3) applied in the fall with 168 kg/ha applied in the spring.

GENERAL DESCRIPTION OF CLIMATIC CONDITIONS DURING TEST: Dry and periods of coolness in late spring.

DISEASE DEVELOPMENT: Low level.

INSECT, WEED OR PEST PROBLEMS: Not reported.

DATE OF HARVEST: July 17, 1973.

AREA HARVESTED FOR YIELD: 2.88 square meters.

DATES WHEN DIFFERENT NOTES WERE TAKEN:
Diseases - May 23, 1973
Height - May 28, 1973
Lodging - May 28, 1973
Winter survival - February 16, 1973

Correlation coefficients for agronomic and grain quality traits of 30 cultivars in the Fifth International Winter Wheat Performance Nursery grown at Corvallis, Oregon, USA, 1973.

	Yield	Test weight	Protein	Flowering	Plant height	Lodging
Test weight	.09					
Protein	-.07	.55**				
Flowering	-.44*	-.10	.08			
Plant height	-.22*	.35	.73**	.25		
Lodging	-.23*	.27	.39*	-.21	.45**	
Winter survival	.52**	-.05	.18	.01	.20*	.07

**Significant at the 1% level. *Significant at the 5% level.

Table 43. Agronomic, grain quality, and disease data for the 30 cultivars in the Fifth International Winter Wheat Performance Nursery grown at Corvallis, Oregon, U.S.A., 1973.

Cultivar	Yield q/ha	Test[a] weight kg/hl	Protein[a] %	Lysine[a] % of protein	Date of flowering[a] days from Jan. 1	Plant height cm	Lodging %	Winter survival %
Lerma Rojo 64	37.6	80.5	12.9	2.99	131	112	6	100
Rousalka	37.6	78.9	14.2	3.09	133	97	0	99
Strampelli	37.4	77.9	12.0	2.98	131	108	3	100
Maris Nimrod	35.6	76.9	13.0	3.10	147	117	29	100
Bezostaya 1	35.6	81.8	13.6	2.96	138	121	0	93
Caribo	34.5	77.1	13.7	3.07	148	126	3	100
Carifen 12	34.1	71.6	11.6	3.16	145	89	0	100
Blueboy	33.1	73.4	11.5	3.10	138	122	3	100
Centurk	32.7	80.6	14.1	2.90	138	127	85	100
Dacia	32.4	80.0	15.0	2.89	138	127	14	100
Lilifen	32.3	77.4	12.3	2.95	139	110	0	88
Moldova	30.6	78.0	14.1	3.05	132	128	15	100
Marimp 3	30.2	76.8	13.3	3.09	131	109	0	80
Diplomat	30.2	79.6	14.0	3.02	150	125	0	100
Backa	29.2	75.2	12.4	3.01	137	104	0	75
Victor I	29.1	76.8	11.8	3.13	136	96	0	82
Zlatna dolina	28.9	74.0	11.7	3.10	137	87	0	100
Probstdorfer Extrem	27.7	78.9	14.9	2.83	145	138	67	100
Clarion	27.4	76.4	12.4	3.15	150	113	0	100
Zenith	27.1	80.8	12.9	3.04	149	113	0	90
Sava	25.2	76.9	12.3	3.02	135	92	0	70
Tam 102	25.2	74.9	12.8	3.22	138	107	37	100
Starke	24.0	76.2	13.7	3.02	150	128	6	100
Atlas 66	23.2	78.4	16.9	2.88	138	150	36	93
Lancota (NE701132)	23.2	79.9	15.5	2.82	138	126	63	77
Vakka	22.8	77.5	14.4	2.97	150	130	3	88
Kirac 66	22.5	77.5	15.5	2.89	138	137	74	98
Hokuei	22.4	77.4	12.8	2.93	140	113	15	95
C.I.15074	18.7	79.7	14.1	3.02	140	131	46	90
Jyva	16.6	76.2	13.9	2.94	150	125	3	60
Mean	28.9	77.6	13.4	3.01	140.3	116.8	16.9	92.5
Coefficient of variation (%)	18.1	--	--	--	--	5.8	127.0	17.1
L.S.D. of cultivar means (.05)	7.4	--	--	--	--	9.4	30.1	22.2

a) One rep only.

UNITED STATES

Washington

COOPERATOR(S): R. E. Allan; C. J. Peterson.

DATE OF PLANTING: September 16, 1972.

PRECIPITATION DURING CYCLE OF TEST: 358 mm.

AMOUNT OF IRRIGATION APPLIED: None.

FERTILIZER USED: N = 67 kg/ha (NH_4NO_3).

GENERAL DESCRIPTION OF CLIMATIC CONDITIONS DURING TEST: The season was extremely dry.

DISEASE DEVELOPMENT: Light infestation of stripe and leaf rusts.

INSECT, WEED OR PEST PROBLEMS: None.

DATE OF HARVEST: August 10, 1973.

AREA HARVESTED FOR YIELD: 3.0 square meters.

DATES WHEN DIFFERENT NOTES WERE TAKEN:
Stripe rust - June 15, 1973

Correlation coefficients for agronomic and grain quality traits of 30 cultivars in the Fifth International Winter Wheat Performance Nursery grown at Pullman, Washington, USA, 1973.

	Yield	Flowering
Flowering	.19	
Winter survival	.71**	-.04

**Significant at the 1% level.

Table 44. Agronomic, grain quality, and disease data for the 30 cultivars in the Fifth International Winter Wheat Performance Nursery grown at Pullman, Washington, U.S.A., 1973.

Cultivar	Yield g/ha	Test[a] weight kg/hl	Protein %	Lysine[a] % of protein	Date of flowering[a] days from Jan. 1	Lodging %	Winter survival %	Stripe rust[b] Sev. %	Stripe rust[b] Resp.
Maris Nimrod	52.8	59.5	13.6	3.10	158	10	86	1	0-VS
Clarion	48.3	58.7	15.2	2.84	157	0	89	0	0
Sava	47.7	61.7	13.9	3.17	149	0	75	0	0-R
Caribo	46.6	60.1	14.9	3.10	157	8	88	25	VS
Tam 102	46.4	60.4	15.3	3.13	149	78	94	40	VS
Starke	44.3	59.8	16.1	3.05	158	3	86	1	0-MR
Probstdorfer Extrem	44.2	62.1	15.4	2.91	151	24	91	0	0-VS
Diplomat	44.0	61.9	15.8	2.95	158	0	90	1	R-VS
Carifen 12	43.6	56.9	13.7	3.13	152	0	88	0	0-VR
Zenith	43.0	60.3	16.5	2.88	158	3	89	0	0
Kirac 66	38.8	62.7	16.4	3.15	155	64	73	1	0-VR
Hokuei	38.4	61.0	14.9	3.05	152	94	91	5	VS
Zlatna dolina	38.4	61.1	14.7	3.08	150	5	86	15	VS
Blueboy	38.4	59.3	14.1	3.06	155	38	86	0	0-MS
Rousalka	37.6	62.7	16.4	3.03	147	3	80	1	VR
Centurk	37.3	61.7	15.9	2.95	153	54	89	1	M-MS
Bezostaya 1	36.8	63.2	16.4	2.90	153	21	93	0	0
C.I.15074	36.2	63.0	16.6	3.11	149	28	90	20	VS
Lancota (NE701132)	35.4	62.1	17.3	2.90	149	69	89	0	0-R
Atlas 66	33.8	60.1	17.9	2.98	154	13	31	0	0-VS
Jyva	32.2	58.7	15.7	3.11	157	19	84	1	VR-MR
Backa	31.7	59.9	17.0	3.00	155	0	73	1	R
Marimp 3	31.6	62.2	16.7	3.05	155	3	38	8	M-VS
Dacia	28.8	61.2	17.6	3.07	149	61	88	2	0-MS
Moldova	23.4	61.2	17.5	3.00	149	59	85	0	0-MS
Vakka	17.3	58.9	16.4	3.08	157	66	88	0	0-R
Strampelli	13.6	62.3	16.5	2.98	150	0	11	3	S-VS
Lilifen	2.3	--	16.2	3.04	--	--	0	--	--
Victor I	0.0	--	--	--	--	--	0	--	--
Lerma Rojo 64	0.0	--	--	--	--	--	0	--	--
Mean	33.8	60.8	15.9	3.03	153.2	26.8	71.7	4.2	
Coefficient of variation (%)	23.0	--	--	--	--	--	10.4	--	
L.S.D. of cultivar means (.05)	10.9	--	--	--	--	--	10.5	--	
Local cultivars									
Nugain	50.4	62.6			156	5	91	1	VR
Luke	50.4	61.3			157	25	84	1	0-R

a) One rep only.
b) Two reps only.

USSR

Krasnodar

COOPERATOR(S): P. P. Lukyanenko.

DATE OF PLANTING: October 13, 1972.

PRECIPITATION DURING CYCLE OF TEST: 436 mm from October 1, 1972 - July 1, 1973.

AMOUNT OF IRRIGATION APPLIED: None.

FERTILIZER USED: N = 120 kg/ha; P - 90 kg/ha; K - 45 kg/ha.

GENERAL DESCRIPTION OF CLIMATIC CONDITIONS DURING TEST: Minimum temperature was -20.5°C and the maximum 31.7°C with low mean temperature and high moisture during the test.

DISEASE DEVELOPMENT: Heavy attack of leaf rust.

INSECT, WEED OR PEST PROBLEMS: Eurygaster integriceps Put., Lema melanopus L.

DATE OF HARVEST: July 7, 1973.

AREA HARVESTED FOR YIELD: 6.6 square meters.

DATES WHEN DIFFERENT NOTES WERE TAKEN:
Winter hardiness - March 17, 1973
Lodging - May 25, June 1, June 20, 1973
Mildew - April 10, 20, May 5, 1973
Leaf rust - May 28, June 9, June 19, 1973
Stripe rust - June 19, 1973
Stem rust - June 19, 1973

Correlation coefficients for agronomic and grain quality traits of 30 cultivars in the Fifth International Winter Wheat Performance Nursery grown at Krasnodar, Russia, 1973.

	Yield
Winter survival	.52**

**Significant at the 1% level

Table 45. Agronomic, grain quality, and disease data for the 30 cultivars in the Fifth International Winter Wheat Performance Nursery grown at Krasnodar, U.S.S.R., 1973.

Cultivar	Yield g/ha	Test weight kg/hl	Protein %	Lysine[a] % of protein	Date of[a] Flowering (days from Jan. 1)	Date of[a] Ripening (days from Jan. 1)	Plant height[c] cm	Lodging %	Shattering[b] %	Winter survival %	1000-Kernel weight gm	Leaf Rust Sev. %	Leaf Rust Resp.
Sava	47.6	79.5	15.5	3.16	132	173	92	38	0	100	30	9	VR
Rousalka	47.5	79.2	16.0	3.03	129	172	85	0	0	100	39	2	VR
Strampelli	46.7	77.7	15.1	3.13	127	172	90	66	0	100	32	50	S
Zlatna dolina	46.7	78.2	14.2	3.14	133	175	86	36	0	100	33	6	MS
Backa	37.9	77.6	17.1	3.17	132	174	99	46	0	100	37	37	R-S
Dacia	37.4	77.6	17.6	2.99	134	177	118	65	1	100	34	19	VR-S
Marimp 3	37.1	75.5	16.5	3.07	132	174	101	46	0	100	31	17	MS
Centurk	34.8	77.7	17.3	3.19	134	175	106	69	5	100	31	2	VR-R
Lancota (NE701132)	34.2	77.6	18.4	2.87	137	181	107	69	0	100	33	1	VR
Moldova	33.8	78.1	18.8	3.00	131	174	111	54	4	100	34	3	VR
Probstdorfer Extrem	29.0	74.9	17.0	2.97	141	181	113	76	0	100	27	26	VR-S
Blueboy	28.5	70.6	14.1	3.21	137	179	106	48	0	100	29	34	MR-MS
Atlas 66	26.2	74.8	18.8	2.84	136	177	115	62	0	100	29	9	VR
Diplomat	25.0	76.4	15.1	3.14	151	188	105	6	1	100	31	23	S
Zenith	24.2	--	17.6	2.93	145	186	105	49	0	100	26	31	MS-S
Tam 102	23.9	71.7	15.9	3.12	135	175	94	59	0	100	25	53	MS-S
Clarion	23.7	71.3	17.7	3.16	148	188	105	45	0	100	29	9	VR
Bezostaya 1	23.3	76.2	16.1	3.00	135	182	104	63	0	100	33	34	S
Maris Nimrod	23.2	64.5	16.6	3.17	148	186	95	71	0	100	25	32	MS
Carifen 12	21.1	59.0	14.9	3.33	142	184	82	5	0	100	21	94	VS
Vakka	20.0	69.7	16.2	3.21	134	183	110	49	0	100	25	67	VS
Hokuei	18.6	69.3	16.2	3.25	138	186	96	85	0	100	26	55	S
Caribo	17.4	66.2	17.5	3.13	146	187	107	41	0	100	26	41	S
Kirac 66	14.8	69.9	16.7	3.14	135	177	107	81	0	100	25	85	S-VS
Lilifen	14.7	72.0	16.4	3.20	--	--	84	0	0	30	34	26	VR-S
Jyva	12.7	67.3	17.3	3.11	150	186	116	53	0	100	21	94	S-VS
C.I.15074	10.9	75.7	17.6	3.10	139	179	103	72	0	100	23	1	MS
Starke	9.5	--	15.8	3.29	134	189	113	13	0	100	21	80	S
Victor I	3.1	--	15.4	3.25	134	181	75	0	0	5	29	45	MR-S
Lerma Rojo 64	--	--	--	--	--	--	75	0	0	1	28	--	--
Mean	25.8	70.7	16.5	3.11	137.5	180.0	100.2	45.6	0.4	91.2	28.9	34.0	
Coefficient of variation (%)	17.7	--	--	--	--	--	--	--	--	3.8	--	--	
L.S.D. of cultivar means (.05)	6.4	--	--	--	--	--	--	--	--	4.8	--	--	

a) One rep only.
b) Two reps only.
c) Three reps only.

WEST GERMANY

Mönsheim

COOPERATOR(S): Alfred Lein.

DATE OF PLANTING: October 25, 1972.

PRECIPITATION DURING CYCLE OF TEST: 254 mm - October 1972 - June 1973.

AMOUNT OF IRRIGATION APPLIED: None.

FERTILIZER USED: N = 160 kg/ha; P_2O_5 = 120 kg/ha; K_2O = 200 kg/ha.

GENERAL DESCRIPTION OF CLIMATIC CONDITIONS DURING TEST: No winter kill. The season was dry.

DISEASE DEVELOPMENT: Heavy pressure from mildew in May and June. Replications two and three were sprayed on May 23, 1973 with 750 g/ha of Calixin and 500 g/ha Cercobin - M for mildew control.

INSECT, WEED OR PEST PROBLEMS: None.

DATE OF HARVEST: August 15, 1973.

AREA HARVESTED FOR YIELD: 4.75 square meters.

DATES WHEN DIFFERENT NOTES WERE TAKEN:
Lodging - July 16, 1973
Mildew - June 7, 1973

Correlation coefficients for agronomic and grain quality traits of 30 cultivars in the Fifth International Winter Wheat Performance Nursery grown at Monsheim, West Germany, 1973.

	Yield	Flowering	Ripening	Plant height
Flowering	-.34**			
Ripening	-.29**	.80**		
Plant height	-.00	.25**	.23*	
Lodging	-.06	-.13	-.05	.11

**Significant at the 1% level. *Significant at the 5% level.

Table 46. Agronomic, grain quality, and disease data for the 30 cultivars in the Fifth International Winter Wheat Performance Nursery grown at Monsheim, West Germany, 1973.

Cultivar	Yield g/ha	Protein[b] %	Lysine[a] % of protein	Date of Flowering days from Jan. 1	Date of Ripening days from Jan. 1	Plant height cm	Lodging %	Mildew sev. %
Sava	43.8	15.8	3.22	146	188	62	0	22
Centurk	43.1	16.2	3.05	148	187	72	4	27
Maris Nimrod	42.6	16.4	3.09	154	195	72	1	10
Probstdorfer Extrem	41.0	17.3	2.77	150	195	87	4	25
Zlatna dolina	40.1	14.5	3.16	146	191	59	0	45
Backa	39.8	15.9	3.20	145	191	65	0	27
Dacia	39.0	17.2	3.03	147	187	77	0	52
Rousalka	38.6	15.3	3.06	142	187	60	0	45
Bezostaya 1	38.6	14.9	3.07	149	193	68	1	55
Lancota (NE701132)	37.3	18.0	2.87	148	190	73	0	55
Blueboy	36.5	13.7	3.35	148	191	72	3	62
Moldova	36.2	16.6	3.11	144	187	80	0	42
Strampelli	34.7	14.3	3.00	143	187	67	5	37
C.I.15074	34.4	17.8	2.96	148	187	77	1	52
Marimp 3	34.2	15.6	3.16	147	189	66	0	35
Atlas 66	33.7	18.5	2.94	148	192	89	0	27
Zenith	33.1	16.1	2.98	156	197	71	0	45
Carifen 12	32.9	14.9	3.27	150	189	57	0	60
Tam 102	32.7	15.8	3.10	144	187	63	1	82
Vakka	31.5	16.3	3.04	157	196	83	0	25
Caribo	30.7	15.1	3.08	154	198	71	0	57
Clarion	30.6	16.3	3.14	156	199	67	0	72
Lerma Rojo 64	29.5	15.9	3.03	142	186	69	0	80
Jyva	29.4	17.2	2.97	159	196	79	0	25
Lilifen	29.3	15.7	3.17	150	192	64	0	77
Victor I	29.2	15.5	3.08	147	188	57	1	52
Hokuei	29.0	13.9	3.14	148	192	75	18	30
Starke	27.4	18.0	2.98	164	200	71	0	17
Diplomat	25.8	15.9	3.10	157	198	69	0	70
Kirac 66	25.7	16.5	3.17	149	191	79	1	77
Mean	34.4	16.0	3.08	149.4	191.4	70.5	1.3	46.2
Coefficient of variation (%)	7.5	--	--	0.8	1.1	4.0	125.4	--
L.S.D. of cultivar means (.05)	3.6	--	--	1.7	2.9	4.0	2.4	--

a) One rep only.
b) Two reps only.

WEST GERMANY

Weihenstephan

COOPERATOR(S): G. Fischbeck.

DATE OF PLANTING: October 4, 1972.

PRECIPITATION DURING CYCLE OF TEST: 633 mm.

AMOUNT OF IRRIGATION APPLIED: None.

FERTILIZER USED: N = 20 kg/ha; P_2O_5 = 80 kg/ha; K_2O - 160 kg/ha.

GENERAL DESCRIPTION OF CLIMATIC CONDITIONS DURING TEST: December had a long period of freezing temperatures. Precipitation and temperature in May, June and July were well under normal.

DISEASE DEVELOPMENT: High infestation of mildew and septoria. The plots were sprayed on April 30, 1972 with a mixture of 4ℓ/ha Banwell-M, 0.5ℓ/ha of CCC and 0.5ℓ/ha of Cercobin-M for disease control.

INSECT, WEED OR PEST PROBLEMS: None.

DATE OF HARVEST: August 9-17, 1973.

AREA HARVESTED FOR YIELD: 1.52 square meters.

DATES WHEN DIFFERENT NOTES WERE TAKEN:
Mildew - June 12 and 26, 1973
Septoria - June 26, 1973

Correlation coefficients for agronomic and grain quality traits of 30 cultivars in the Fifth International Winter Wheat Performance Nursery grown at Weihenstephan, West Germany, 1973.

	Yield	Test weight	Protein	Flowering	Plant height	Lodging
Test weight	.56**					
Protein	-.36**	.11				
Flowering	.13	.14	-.33**			
Plant height	-.15	.29**	.16	.49**		
Lodging	-.46**	-.17	.29**	-.15	.36**	
Winter survival	.09	.18*	.05	.32**	.43**	.12

**Significant at the 1% level. *Significant at the 5% level.

Table 47. Agronomic, grain quality, and disease data for the 30 cultivars in the Fifth International Winter Wheat Performance Nursery grown at Weihenstephan, West Germany, 1973.

Cultivar	Yield q/ha	Test weight kg/hl	Protein %	Lysine[a] % of protein	Date of Flowering[b] days from Jan. 1	Date of Ripening[b] days from Jan. 1	Plant height cm	Lodging %	Winter survival %	Mildew Sev. %	Spike[c] discoloration 1-9	Type of growth[d] 1-9	Artificial winter hardiness % survival	Spikes/ m^2
Maris Nimrod	84.0	74.0	13.1	3.08	165	226	99	0	88	11	5	2	85	656
Zenith	77.8	78.8	14.3	2.82	166	226	104	0	89	30	4	3	70	815
Sava	77.0	74.7	14.1	3.02	156	221	80	3	76	11	4	4	70	754
Caribo	76.2	75.3	13.4	2.94	165	226	106	0	89	50	4	5	85	744
Zlatna dolina	72.9	74.5	14.0	2.98	156	221	76	6	83	13	4	4	75	709
Atlas 66	72.2	79.6	16.8	2.89	156	226	118	41	85	30	2	8	65	764
Clarion	71.8	72.9	14.0	3.16	167	226	98	0	93	47	6	3	80	812
Moldova	71.6	72.5	15.6	3.05	153	221	107	28	90	57	5	7	85	816
Backa	71.2	74.4	15.5	2.90	156	221	82	0	74	10	4	8	90	672
Starke	71.2	77.8	13.2	3.07	171	229	123	8	95	17	3	2	80	701
Bezostaya 1	71.1	79.6	14.6	2.80	162	226	105	3	90	42	4	7	80	747
Centurk	70.6	75.3	14.8	2.99	162	221	105	63	93	13	2	4	75	948
Strampelli	70.5	76.8	13.2	3.00	152	221	83	23	66	30	3	8	35	636
Dacia	70.5	73.8	15.5	2.94	156	221	104	21	90	62	4	7	85	687
Probstdorfer Extrem	70.2	79.8	15.6	2.85	162	226	116	13	100	25	2	4	90	661
Jyva	70.2	76.8	14.2	2.87	168	226	120	28	90	35	4	5	90	711
Hokuei	69.3	77.4	14.4	2.79	157	226	103	58	93	40	3	4	90	905
Lilifen	67.6	74.1	14.7	3.08	162	224	83	0	60	62	6	6	30	619
Diplomat	67.0	80.4	13.9	2.96	167	226	105	0	93	65	4	4	80	708
Victor I	66.5	73.1	14.9	3.00	157	221	76	0	64	32	5	5	35	679
Marimp 3	64.7	73.5	15.8	3.11	156	221	85	3	70	18	4	6	35	625
Blueboy	64.2	73.9	13.1	3.09	163	226	111	3	90	67	6	5	85	933
Rousalka	63.9	73.7	15.2	3.04	151	221	76	11	100	30	5	7	90	755
Carifen 12	60.1	64.8	14.2	2.99	163	221	77	10	85	52	6	4	70	880
C.I.15074	59.7	78.6	18.4	2.71	157	221	109	15	95	20	4	5	90	966
Lancota (NE701132)	58.8	77.2	17.5	2.78	157	221	105	28	93	18	4	6	90	930
Vakka	58.5	74.9	16.1	3.00	166	226	117	51	93	32	5	5	90	763
Lerma Rojo 64	50.7	72.6	15.1	3.01	151	221	95	41	58	72	8	8	20	954
Tam 102	47.6	66.2	14.1	3.17	156	221	97	33	98	70	6	5	80	856
Kirac 66	37.7	69.3	16.2	2.99	164	224	121	58	81	67	6	3	70	919
Mean	66.9	74.9	14.9	2.77	159.8	223.5	99.4	18.1	85.3	37.6	4.3	5.0	73.2	983.6
Coefficient of variation (%)	11.6	2.5	3.3	--	0.4	--	6.9	58.4	5.9	--	--	--	--	--
L.S.D. of cultivar means (.05)	10.9	2.6	0.7	--	0.8	--	9.6	14.9	7.1	--	--	--	--	--

a) One rep only.
b) Two reps only.
c) 1-little mildew, 9-severe mildew.
d) 1-prostrate, 9-erect.

YUGOSLAVIA

Novi Sad

COOPERATOR(S): S. Borojevic; I. Mihaljev.

DATE OF PLANTING: October 26, 1972.

PRECIPITATION DURING CYCLE OF TEST: 466.9 mm

AMOUNT OF IRRIGATION APPLIED: None reported.

FERTILIZER USED: N = 83 kg/ha; P_2O_5 = 104 kg/ha; K_2O = 88 kg/ha.

GENERAL DESCRIPTION OF CLIMATIC CONDITIONS DURING TEST: Not reported.

DISEASE DEVELOPMENT: Not reported.

INSECT, WEED OR PEST PROBLEMS: None reported.

DATE OF HARVEST: July 21, 1973.

AREA HARVESTED FOR YIELD: 4 square meters.

DATES WHEN DIFFERENT NOTES WERE TAKEN: None reported.

Correlation coefficients for agronomic and grain quality traits of 30 cultivars in the Fifth International Winter Wheat Performance Nursery grown at Novi Sad, Yugoslavia, 1973.

	Yield	Test weight	Protein	Flowering	Ripening	Plant height
Test weight	.21*					
Protein	-.40**	.13				
Flowering	-.38**	-.21*	.30**			
Ripening	-.39**	-.15	.35**	.90**		
Plant height	-.40**	.37**	.47**	.37**	.32**	
Lodging	-.18*	-.18*	.19*	-.09	-.17	.04

**Significant at the 1% level. *Significant at the 5% level.

Table 48. Agronomic, grain quality, and disease data for the 30 cultivars in the Fifth International Winter Wheat Performance Nursery grown at Novi Sad, Yugoslavia, 1973.

Cultivar	Yield q/ha	Test weight kg/hl	Protein %	Lysine[a] % of protein	Date of Flowering (days from Jan. 1)	Date of Ripening (days from Jan. 1)	Plant height cm	Lodging %	Leaf rust Sev. %	Leaf rust Resp.
Sava	61.2	80.9	15.0	3.26	142	185	93	85	1	0-MS
Zlatna dolina	57.5	80.2	13.8	3.20	142	185	88	58	10	0-R
Probstdorfer Extrem	49.8	83.9	16.0	2.99	149	189	121	90	33	S
Rousalka	47.7	79.2	15.1	3.10	141	185	86	97	0	0
Marimp 3	43.4	79.7	15.5	3.22	142	185	98	68	46	S-VS
Victor I	43.2	76.9	15.4	3.15	142	185	92	92	29	S
Atlas 66	40.1	82.3	18.1	2.97	145	187	109	83	15	0-S
Carifen 12	39.6	70.9	14.8	3.35	152	190	84	95	51	S-VS
Strampelli	39.5	74.9	15.7	2.97	142	185	93	99	1	0-S
Backa	38.8	79.5	15.9	3.09	142	185	94	82	43	S-VS
Bezostaya 1	37.6	81.8	16.2	3.12	143	186	104	95	10	0-S
Centurk	36.3	82.5	15.9	3.03	146	187	100	99	6	0-S
Lancota (NE701132)	36.0	82.6	16.6	2.96	145	187	105	99	2	0-VR
Maris Nimrod	35.6	76.0	16.0	3.24	157	192	102	92	17	S
Dacia	35.3	81.0	16.8	3.01	143	186	107	99	2	0-MS
Moldova	35.1	76.9	17.2	3.15	142	185	106	99	12	0-MS
Vakka	35.1	78.1	17.1	3.00	152	190	106	97	40	MS-VS
Blueboy	34.9	78.8	14.6	3.26	148	188	110	90	10	0-S
Caribo	33.4	77.8	15.8	3.05	156	191	106	97	22	MS-S
Lilifen	29.9	78.3	16.4	3.26	150	189	106	65	1	0-MS
Tam 102	29.4	74.3	14.5	3.23	143	186	98	99	11	MS-S
Zenith	29.3	79.6	17.5	2.92	158	204	102	97	37	S-VS
Jyva	28.7	77.2	17.3	3.01	160	207	111	97	36	S-VS
Diplomat	27.7	82.4	15.6	3.08	157	205	108	43	2	S
Hokuei	27.6	79.1	15.2	3.09	147	188	104	99	33	S
Clarion	26.8	75.6	17.1	3.16	159	204	100	92	8	0-S
C.I.15074	25.9	83.1	16.9	3.12	148	188	108	94	13	MS-S
Kirac 66	24.5	80.6	15.4	3.18	148	188	109	99	67	S-VS
Starke	22.2	74.5	16.6	3.12	159	204	111	80	30	S-VS
Lerma Rojo 64	19.2	77.1	16.7	2.87	138	183	103	99	0	0
Mean	35.7	78.9	16.0	3.11	147.9	190.0	102.0	89.2	19.6	
Coefficient of variation (%)	16.8	1.5	2.5	--	0.0	0.1	3.0	13.7	--	
L.S.D. of cultivar means (.05)	8.4	1.6	0.6	--	0.0	0.1	4.3	17.1	--	

a) One rep only.

YUGOSLAVIA

Zagreb

COOPERATOR(S): J. Potocanac; P. Javor.

DATE OF PLANTING: October 24, 1972.

PRECIPITATION DURING CYCLE OF TEST: Not reported.

AMOUNT OF IRRIGATION APPLIED: Not reported.

FERTILIZER USED: 500 kg/ha fertilizing material containing N, P_2O_5, K_2O as (9-18-18) applied preplant. Nitrogen in the form of KAN was applied as topdressing February 20 (11 kg/ha), March 23 (14 kg/ha) and May 7 (8 kg/ha).

GENERAL DESCRIPTION OF CLIMATIC CONDITIONS DURING TEST: Autumn was warm and dry. Later it was rainy and cold followed by a mild winter with little snow. The spring was cold and rainy followed by a dry May and a lot of rain at harvest time.

DISEASE DEVELOPMENT: Rather slight attack of leaf rust and a moderate attack of stem rust.

INSECT, WEED OR PEST PROBLEMS: None.

DATE OF HARVEST: June 24, 1973.

AREA HARVESTED FOR YIELD: 4.0 square meters.

DATES WHEN DIFFERENT NOTES WERE TAKEN:
Germination - November 8, 1972

Correlation coefficients for agronomic and grain quality traits of 30 cultivars in the Fifth International Winter Wheat Performance Nursery grown at Zagreb, Yugoslavia, 1973.

	Yield	Protein	Flowering	Plant height	Lodging
Protein	-.18*				
Flowering	-.53**	.09			
Plant height	-.06	.28**	.03		
Lodging	-.10	.24**	-.28**	.65**	
Winter survival	.13	.04	-.10	.11	.17

**Significant at the 1% level. *Significant at the 5% level.

Table 49. Agronomic, grain quality, and disease data for the 30 cultivars in the Fifth International Winter Wheat Performance Nursery grown at Zagreb, Yugoslavia, 1973.

Cultivar	Yield q/ha	Protein %	Lysine[a] % of protein	Date of flowering[c] days from Jan. 1	Plant height cm	Lodging %	Winter survival %	Stem rust[d] Sev. %	Stem rust[d] Resp.	Mildew[b] Sev. %	Mildew[b] Resp.
Sava	58.5	13.0	3.03	146	85	0	100	5	R	10	R-MR
Zlatna dolina	51.5	13.5	3.05	146	78	0	100	5	R	80	MS-S
Backa	49.6	13.8	3.06	146	87	0	100	10	MR	33	MR-MS
Victor I	47.0	13.5	3.15	148	82	0	99	0	R	65	S
Dacia	46.7	14.7	3.05	147	106	64	100	5	R	63	S
Rousalka	46.1	15.2	3.00	143	81	0	100	1	R	58	S
Maris Nimrod	45.5	12.9	2.96	155	87	0	100	30	R	20	MR-MS
Bezostaya 1	45.0	14.5	2.99	149	95	6	100	10	MR	45	MS-S
Moldova	43.6	15.5	2.97	145	101	70	100	30	R	38	M-S
Centurk	43.2	12.9	3.10	149	98	91	100	2	R	45	MR-MS
Probstdorfer Extrem	43.0	13.8	2.88	153	110	59	100	40	MS	10	MR
Marimp 3	42.7	13.7	3.02	146	91	4	100	2	R	63	S
Strampelli	42.7	12.7	2.99	143	81	38	100	5	R	40	MS
Lilifen	42.6	14.1	3.13	152	90	0	99	1	R	80	S
Blueboy	41.0	11.3	3.01	150	96	36	100	25	X	80	S
Lancota (NE701132)	40.0	14.9	2.88	150	99	90	100	10	MS	43	MR-S
Caribo	39.4	12.5	3.11	156	97	1	100	15	MS	70	S
Tam 102	38.6	12.7	3.06	147	87	6	100	2	R	80	S
Zenith	38.0	14.2	2.99	156	88	0	100	20	MS	50	MS-S
Clarion	34.8	14.3	3.19	157	86	0	100	40	S	70	S
Atlas 66	34.2	17.0	2.83	150	112	87	100	15	MR	15	MR
Lerma Rojo 64	33.8	13.4	3.05	140	90	50	99	0	R	80	S
Vakka	33.6	13.2	3.09	156	99	5	100	40	S	63	S
Hokuei	33.5	13.2	2.96	151	88	46	100	20	MS	45	MS-S
Carifen 12	33.1	12.9	3.18	153	74	0	100	10	MR	75	S
C.I.15074	32.6	15.7	2.95	151	97	76	100	10	MR	33	MS
Kirac 66	32.1	13.4	2.96	150	100	71	100	7	MR	78	S
Jyva	31.6	13.4	3.11	157	94	0	98	50	S	50	S
Diplomat	30.3	15.4	3.03	158	85	0	100	20	MR	78	S
Starke	25.5	15.2	3.14	163	84	0	100	40	S	23	MR
Mean	40.0	13.9	3.03	150.5	92.5	27.6	99.8	14.8		52.8	
Coefficient of variation (%)	9.6	4.3	--	0.4	4.3	60.5	0.6	--		--	
L.S.D. of cultivar means (.05)	5.4	0.8	--	1.0	5.5	22.6	0.8	--		--	
Local cultivar											
Sanja	45.2	--	--	146	71	0	100	--		--	

a) One rep only. b) Two reps only. c) Three reps only.

Table 50. Summary of average "Yield" in quintals per hectare for cultivars grown in the Fifth International Winter Wheat Performance Nursery, 1973. (Northern Hemisphere).*

Cultivar	Kabul, Afghanistan	Kunduz, Afghanistan	Vienna, Austria	Tolbukhin, Bulgaria	Male Ripnany, Czechoslovakia	Sedlec, Czechoslovakia	Cambridge, England	Jokioinen, Finland	Martonvasar, Hungary	Szeged, Hungary	Shalimar, India
Sava	45.1	51.3	75.6	79.2	81.8	55.2	56.0	12.3	95.7	64.6	20.6
Centurk	43.6	51.8	68.1	61.0	75.4	61.5	50.5	50.8	101.0	55.0	31.0
Rousalka	50.6	55.4	53.8	72.9	63.5	44.3	47.2	30.0	88.9	62.0	35.7
Zlatna dolina	50.1	53.4	65.1	58.9	66.5	43.1	53.4	16.1	87.8	69.3	27.1
Blueboy	30.9	47.4	56.3	48.7	69.0	47.2	50.5	48.3	88.2	55.9	12.7
Probstdorfer Extrem	42.1	41.7	61.7	56.4	74.2	47.4	49.5	50.9	103.6	63.2	19.8
Bezostaya 1	55.3	50.4	50.3	53.7	64.4	44.5	52.9	46.5	96.8	51.0	27.4
Dacia	46.2	54.0	53.8	56.7	61.0	49.5	49.5	29.5	96.8	56.5	37.6
Maris Nimrod	23.9	35.6	59.5	47.7	64.3	63.7	65.7	48.5	91.5	64.6	14.9
Backa	42.6	43.7	62.1	63.2	61.1	45.0	51.8	1.3	80.6	49.0	35.0
Moldova	50.9	51.6	56.3	64.4	57.0	45.6	42.8	39.4	82.6	48.1	21.6
Lancota (NE701132)	43.6	45.4	57.5	55.7	60.6	33.5	43.1	19.9	96.7	56.4	26.4
Marimp 3	53.7	54.6	54.2	61.9	44.9	37.4	48.5	0.0	72.2	53.9	39.3
Tam 102	47.1	48.3	50.5	62.6	59.0	49.6	44.0	35.5	81.8	46.1	34.2
Caribo	31.4	35.9	47.9	44.1	64.7	59.1	52.5	47.1	81.5	46.5	8.1
Clarion	24.8	39.7	52.7	42.4	67.8	63.1	52.0	53.8	84.7	60.1	12.1
Strampelli	56.4	57.6	56.2	69.4	45.1	32.7	46.3	0.0	71.8	45.7	28.6
Zenith	31.4	29.5	54.3	49.9	68.0	59.9	49.2	44.5	89.6	41.8	13.7
Hokuei	27.7	39.2	57.5	48.4	63.4	46.9	36.8	49.4	88.5	57.1	15.3
Victor I	51.6	51.3	45.0	64.2	40.1	27.4	47.6	0.0	71.8	50.8	32.1
Atlas 66	36.9	37.7	59.3	54.9	60.8	34.7	41.8	10.5	78.3	57.6	25.7
C.I.15074	35.7	39.7	53.9	44.4	57.2	28.3	36.9	30.5	80.3	55.0	23.4
Carifen 12	15.5	31.9	59.4	37.7	63.9	52.4	51.0	23.6	96.8	56.3	14.1
Lilifen	55.1	46.5	44.9	49.9	39.2	23.2	49.2	0.0	73.7	56.8	24.0
Diplomat	31.5	23.0	44.8	38.0	53.4	49.9	45.3	44.5	70.1	49.8	14.7
Vakka	20.9	24.4	47.7	31.3	61.5	53.7	34.5	44.7	80.4	39.6	16.5
Kirac 66	37.2	28.1	38.3	38.7	56.4	34.1	31.3	14.5	71.9	41.3	14.7
Jyva	16.6	19.6	48.7	28.4	67.6	51.6	36.1	46.8	82.4	45.0	3.6
Lerma Rojo 64	57.8	57.7	27.8	60.2	11.6	25.7	39.6	0.0	59.4	45.5	37.8
Starke	7.3	14.9	46.9	20.8	57.3	62.5	57.4	48.7	75.0	42.6	3.2
Mean	38.8	42.1	53.1	52.2	59.4	45.8	47.1	29.6	84.0	52.9	22.4

*The Orgerus, France location was not included because of many missing data.

Table 50. Summary of average "Yield" in quintals per hectare for cultivars grown in the Fifth International Winter Wheat Performance Nursery, 1973. (Northern Hemisphere). Continued.

Cultivar	Simla, India	Hamadan, Iran	Karaj, Iran	Sulaimaniya, Iraq	Florence, Italy	Milano, Italy	Rieti, Italy	Morioka, Japan	Amman, Jordan	Suwon, Korea	Rayak, Lebanon	Toluca, Mexico	Wageningen, Netherlands
Sava	12.9	40.6	40.8	28.4	37.3	31.1	47.6	60.4	32.2	62.9	24.3	40.9	52.6
Centurk	15.7	36.6	40.5	27.2	26.2	27.2	40.3	48.1	31.7	51.2	22.8	29.4	46.7
Rousalka	15.0	37.3	35.9	36.6	29.0	46.9	53.5	43.2	38.1	55.0	33.1	53.4	53.3
Zlatna dolina	18.4	33.8	32.9	29.2	32.3	38.3	53.7	51.9	27.3	55.8	26.7	32.0	57.9
Blueboy	16.6	44.8	42.7	26.9	30.6	36.5	43.2	47.3	48.4	58.4	28.8	42.6	47.0
Probstdorfer Extrem	4.1	33.5	31.8	23.9	35.6	31.9	38.5	50.1	36.8	43.7	21.3	19.1	52.1
Bezostaya 1	15.2	39.5	36.9	27.8	30.1	34.8	52.8	39.9	34.9	55.5	29.3	30.0	49.3
Dacia	12.2	36.0	36.9	29.2	28.3	30.9	51.0	42.8	35.5	61.0	27.6	39.9	46.0
Maris Nimrod	4.1	41.2	37.8	29.4	49.0	27.1	45.0	50.2	19.3	37.5	7.9	39.7	68.0
Backa	16.2	37.5	36.4	35.7	30.2	31.5	45.3	50.8	33.0	57.2	24.8	44.3	56.8
Moldova	15.1	37.2	35.9	26.6	30.6	33.0	48.3	39.7	31.7	60.2	31.8	42.6	40.7
Lancota (NE701132)	12.0	35.9	35.1	25.3	25.9	25.2	45.4	35.0	36.2	63.6	24.9	23.2	40.5
Marimp 3	20.4	35.5	33.5	29.0	32.1	27.3	54.3	48.1	33.3	50.8	23.1	28.4	52.3
Tam 102	7.5	41.5	41.2	29.4	20.4	26.7	36.2	58.5	42.7	48.4	25.1	18.7	37.2
Caribo	4.2	41.1	33.0	25.7	35.6	24.1	35.1	51.3	29.8	37.2	9.9	31.8	54.9
Clarion	3.6	38.2	37.1	27.8	48.0	18.3	40.4	58.1	9.9	36.3	10.1	21.6	59.4
Strampelli	16.1	35.0	43.7	35.0	39.4	30.3	48.7	42.8	37.7	48.1	40.7	22.7	56.2
Zenith	5.1	36.3	32.1	28.9	42.5	27.1	34.1	52.6	19.9	32.6	9.8	28.7	51.7
Hokuei	4.1	46.0	35.9	24.3	25.3	26.8	41.0	48.0	24.2	41.0	16.9	30.8	43.0
Victor I	18.2	33.8	34.3	33.0	38.1	29.4	47.7	39.7	29.0	53.5	32.2	23.4	55.3
Atlas 66	13.6	29.5	28.8	20.4	26.9	24.1	41.8	44.5	27.2	60.8	24.0	23.0	40.0
C.I.15074	10.3	36.1	33.4	24.3	28.6	24.7	33.0	44.1	32.8	46.8	18.6	20.3	35.0
Carifen 12	5.3	40.0	38.2	23.1	37.3	28.4	37.1	38.1	23.8	30.5	17.2	26.3	51.2
Lilifen	7.3	37.9	34.9	29.[illegible]	38.4	30.1	50.3	35.6	34.9	31.7	27.8	32.9	49.0
Diplomat	1.4	35.7	21.6	25.3	34.6	13.6	40.6	49.1	17.0	26.2	4.0	32.2	46.4
Vakka	3.3	35.4	29.8	19.8	24.3	26.9	24.1	39.6	19.4	31.0	2.5	8.8	44.0
Kirac 66	10.2	38.1	35.1	30.6	16.0	16.6	28.1	28.5	37.7	48.1	12.2	15.7	33.7
Jyva	1.7	35.0	25.4	18.3	28.3	21.5	17.9	32.3	15.5	22.7	6.8	9.3	44.2
Lerma Rojo 64	17.9	35.1	38.4	23.9	23.5	27.6	54.0	0.0	50.0	20.1	35.1	16.1	48.4
Starke	0.4	34.8	24.7	10.4	26.4	19.5	21.6	33.9	10.2	14.5	0.4	8.7	50.6
Mean	10.3	37.3	34.8	26.9	31.7	27.9	41.7	43.9	30.0	44.8	20.7	27.9	48.8

Table 50. Summary of average "Yield" in quintals per hectare for cultivars grown in the Fifth International Winter Wheat Performance Nursery, 1973. (Northern Hemisphere). Continued.

Cultivar	Islamabad, Pakistan	Warsaw, Poland	Fundulea, Romania	Svalof, Sweden	Zurich, Switzerland	Ankara, Turkey	Erzurum, Turkey	Eskisehir, Turkey	Fort Collins, Colorado U.S.A.	Lincoln, Nebraska U.S.A.	Ithaca, New York U.S.A.
Sava	51.9	24.9	46.4	50.7	50.8	12.4	26.7	29.9	72.4	0.0	35.8
Centurk	32.6	37.2	46.3	57.2	42.8	20.0	42.8	30.8	64.4	41.0	30.0
Rousalka	52.8	15.1	35.8	50.3	42.7	18.0	28.1	26.5	65.8	0.2	27.7
Zlatna dolina	45.5	24.0	41.0	63.6	38.2	19.0	20.4	25.3	59.4	0.0	39.0
Blueboy	39.0	49.9	42.5	63.9	42.9	19.9	35.7	28.5	49.9	16.6	45.9
Probstdorfer Extrem	33.5	45.3	48.1	67.3	47.5	24.2	37.0	26.9	57.3	20.2	38.5
Bezostaya 1	38.3	34.5	33.2	56.2	51.4	20.8	36.9	28.1	48.5	19.8	34.3
Dacia	43.7	28.1	41.1	54.3	45.7	17.0	31.0	26.5	58.2	2.2	37.3
Maris Nimrod	31.0	43.4	44.9	74.0	56.8	18.5	37.0	32.6	41.6	0.0	39.2
Backa	52.1	27.2	40.7	62.5	51.1	19.1	23.7	25.8	53.2	0.0	39.2
Moldova	47.0	20.7	37.5	47.9	41.5	20.8	23.2	26.8	55.7	12.8	31.7
Lancota (NE701132)	37.0	24.6	44.2	56.7	36.4	18.6	36.4	26.3	66.4	39.4	26.8
Marimp 3	48.6	0.9	40.0	60.7	42.9	14.1	17.5	26.3	55.4	0.0	37.6
Tam 102	30.0	33.2	35.8	41.1	20.7	15.6	32.8	29.4	69.2	14.8	28.1
Caribo	25.6	36.5	35.1	74.8	51.5	18.3	40.2	26.8	39.2	0.4	40.8
Clarion	28.8	38.0	41.9	71.9	44.3	20.8	38.4	27.4	37.4	0.0	32.2
Strampelli	53.3	0.0	29.7	43.1	38.2	15.1	16.0	18.4	61.5	0.0	29.6
Zenith	30.1	38.1	35.6	64.2	43.3	14.7	37.6	26.8	44.2	0.1	40.7
Hokuei	30.8	34.2	38.9	48.1	35.5	19.8	38.8	26.4	41.9	19.1	35.5
Victor I	47.2	0.0	37.0	64.2	41.9	20.8	14.1	25.2	52.5	0.0	25.1
Atlas 66	26.9	7.6	37.3	48.9	43.4	17.3	28.8	23.8	53.8	0.0	34.7
C.I.15074	25.8	27.5	38.1	50.5	35.6	22.8	35.3	23.4	61.6	36.2	30.7
Carifen 12	20.5	19.8	39.0	60.5	27.4	19.0	37.4	29.5	36.2	0.0	26.7
Lilifen	34.1	1.3	38.8	65.7	37.9	11.7	23.4	24.7	56.7	0.0	21.2
Diplomat	24.6	37.9	40.2	62.5	40.9	16.1	30.7	24.3	34.8	0.0	32.8
Vakka	19.9	34.8	35.7	52.0	40.1	15.6	25.4	25.2	30.2	21.5	31.2
Kirac 66	34.2	20.5	37.5	49.5	26.0	22.4	38.3	27.9	54.5	0.4	21.7
Jyva	15.8	42.5	30.6	52.5	43.0	11.3	33.3	21.3	26.2	19.3	33.9
Lerma Rojo 64	51.1	0.0	32.7	35.7	25.5	18.3	18.6	23.5	46.4	0.0	4.7
Starke	9.2	39.5	24.8	55.2	39.4	15.1	23.0	25.1	22.7	0.0	28.0
Mean	35.4	26.5	38.4	56.9	41.2	17.9	30.4	26.3	50.6	8.8	32.0

Table 50. Summary of average "Yield" in quintals per hectare for cultivars grown in the Fifth International Winter Wheat Performance Nursery, 1973. (Northern Hemisphere). Concluded.

Cultivar	Rowan County, North Carolina U.S.A.	Stillwater, Oklahoma U.S.A.	Corvallis, Oregon- U.S.A.	Pullman, Washington U.S.A.	Krasnodar, U.S.S.R.	Monsheim, West Germany	Weihenstephan, West Germany	Novi Sad, Yugoslavia	Zagreb, Yugoslavia	Mean for 44 locations q/ha
Sava	24.8	50.4	25.2	47.7	47.6	43.8	77.0	61.2	58.5	45.2
Centurk	29.8	41.4	32.7	37.3	34.8	43.1	70.6	36.3	43.2	43.4
Rousalka	15.3	47.6	37.6	37.6	47.5	38.6	63.9	47.7	46.1	42.7
Zlatna dolina	16.8	50.6	28.9	38.4	46.7	40.1	72.9	57.5	51.5	42.3
Blueboy	21.6	47.7	33.1	38.4	28.5	36.5	64.2	34.9	41.0	42.1
Probstdorfer Extrem	14.0	43.3	27.7	44.2	29.0	41.0	70.2	49.8	43.0	41.8
Bezostaya 1	26.3	48.5	35.6	36.8	23.3	38.6	71.1	37.6	45.0	41.7
Dacia	32.8	40.4	32.4	28.8	37.4	39.0	70.5	35.3	46.7	41.3
Maris Nimrod	19.5	21.4	35.6	52.8	23.2	42.6	84.0	35.6	45.5	41.3
Backa	8.6	48.3	29.2	31.7	37.9	39.8	71.2	38.3	49.6	40.6
Moldova	14.5	33.1	30.6	23.4	33.8	36.2	71.6	35.1	43.6	39.1
Lancota (NE701132)	18.0	41.8	23.2	35.4	34.2	37.3	58.8	36.0	40.0	38.7
Marimp 3	4.1	43.2	30.2	31.6	37.1	34.2	64.7	43.4	42.7	37.8
Tam 102	27.1	38.0	25.2	46.4	23.9	32.7	47.6	29.4	38.6	37.8
Caribo	16.9	30.1	[illegible]	46.6	17.4	30.7	76.2	33.4	39.4	37.4
Clarion	10.2	30.9	[illegible]	48.3	23.7	30.6	71.8	26.8	34.8	37.4
Strampelli	0.8	46.4	37.4	13.6	46.7	34.7	70.5	39.5	42.7	37.4
Zenith	12.8	30.4	27.1	43.0	24.2	33.1	77.8	29.3	38.0	36.9
Hokuei	13.6	34.7	22.4	38.4	18.6	29.0	69.3	27.6	33.5	36.2
Victor I	[illegible]	43.2	29.1	0.0	3.1	29.2	66.5	43.2	47.0	35.0
Atlas 66	19.1	32.1	23.2	33.8	26.2	33.7	72.2	40.1	34.2	35.0
C.I.15074	24.3	33.1	18.7	36.2	10.9	34.4	59.7	25.9	32.6	34.9
Carifen 12	14.6	24.8	34.1	43.6	21.1	32.9	60.1	39.6	33.1	34.5
Lilifen	2.3	35.9	32.3	2.3	14.7	29.3	67.6	29.9	42.6	33.5
Diplomat	11.5	17.0	30.2	44.0	25.0	25.8	67.0	27.7	30.3	32.6
Vakka	9.0	24.6	22.8	17.3	20.0	31.5	58.5	35.1	33.6	30.6
Kirac 66	13.5	33.1	22.5	38.8	14.8	25.7	37.7	24.5	32.1	30.3
Jyva	8.7	20.0	16.6	32.2	12.7	29.4	70.2	28.7	31.6	29.7
Lerma Rojo 64	0.0	0.0	37.6	0.0	0.0	29.5	50.7	19.2	33.8	28.2
Starke	4.8	9.8	24.0	44.3	9.5	27.4	71.2	22.2	25.5	27.6
Mean	14.5	35.9	28.9	33.8	25.8	34.4	66.9	35.7	40.0	37.1

Table 51. Summary of "Yield" rankings for cultivars grown in the Fifth International Winter Wheat Performance Nursery, 1973. (Northern Hemisphere).*

Cultivar	Kabul, Afghanistan	Kunduz, Afghanistan	Vienna, Austria	Tolbukhin, Bulgaria	Male Ripnany, Czechoslovakia	Sedlec, Czechoslovakia	Cambridge, England	Jokioinen, Finland	Martonvasar, Hungary	Szeged, Hungary	Shalimar, India
Sava	12	10	1	1	1	15	3	23	7	3	17
Centurk	14	7	2	9	2	1	11	3	2	14	8
Rousalka	8	3	18	2	13	14	18	17	10	5	4
Zlatna dolina	9	6	3	11	8	23	4	21	13	1	11
Blueboy	23	13	12	19	4	21	10	7	12	13	26
Probstdorfer Extrem	16	17	5	13	3	20	13	2	1	4	18
Bezostaya 1	3	11	21	16	10	2	5	10	4	17	10
Dacia	11	5	17	12	17	5	12	18	5	10	3
Maris Nimrod	26	23	6	21	11	10	1	6	8	2	21
Backa	15	16	4	6	16	16	8	25	19	20	5
Moldova	7	8	11	4	23	9	23	14	15	21	16
Lancota (NE701132)	13	15	10	14	19	12	22	20	6	11	12
Marimp 3	5	4	15	8	27	24	16	28	25	16	1
Tam 102	10	27	20	7	20	2	21	15	17	23	6
Caribo	22	22	23	23	9	17	6	8	18	22	28
Clarion	25	19	19	24	6	8	7	1	14	6	27
Strampelli	2	2	13	3	26	26	19	26	28	24	9
Zenith	21	25	14	17	5	11	14	13	9	28	25
Hokuei	24	20	9	20	14	22	27	4	11	8	20
Victor I	6	9	26	5	28	29	17	27	27	18	7
Atlas 66	18	21	8	15	18	25	24	24	22	7	13
C.I.15074	19	19	16	22	22	28	26	16	21	15	15
Carifen 12	29	24	7	27	12	18	9	19	3	12	24
Lilifen	4	14	27	18	29	30	15	29	24	9	14
Diplomat	20	28	28	26	25	19	20	12	29	19	23
Kirac 66	17	26	29	25	24	13	30	22	26	29	22
Vakka	27	27	24	28	15	7	29	11	20	30	19
Jyva	28	29	22	29	7	6	28	9	16	26	29
Lerma Rojo 64	1	1	30	10	30	27	25	30	30	25	2
Starke	30	30	25	30	21	4	2	5	23	27	30

*The Orgerus, France location was not included because of many missing data.

Table 51. Summary of "Yield" rankings for cultivars grown in the Fifth International Winter Wheat Performance Nursery, 1973. (Northern Hemisphere). Continued.

Cultivar	Simla, India	Hamadan, Iran	Karaj, Iran	Sulaimaniya, Iraq	Florence, Italy	Milano, Italy	Rieti, Italy	Morioka, Japan	Amman, Jordan	Suwon, Korea	Rayak, Lebanon	Toluca, Mexico	Wageningen, Netherlands
Sava	13	6	4	13	7	8	11	1	15	2	14	5	9
Centurk	8	5	5	16	24	16	20	12	17	12	17	14	19
Rousalka	11	3	13	1	18	1	4	17	4	10	3	1	8
Zlatna dolina	2	8	23	10	12	2	3	5	20	8	10	10	3
Blueboy	5	2	2	17	15	3	15	14	2	6	7	4	18
Probstdorfer Extrem	23	9	25	25	10	6	21	9	7	18	18	24	11
Bezostaya 1	9	8	11	14	17	4	5	20	10	9	6	13	15
Dacia	14	18	10	9	21	9	6	18	9	3	9	6	21
Maris Nimrod	24	4	8	7	1	17	14	8	26	20	26	7	1
Backa	6	12	12	2	16	7	13	7	13	7	13	2	4
Moldova	10	14	15	18	14	5	9	21	16	5	5	3	25
Lancota (NE701132)	15	19	16	21	25	22	12	26	8	1	12	19	26
Marimp 3	1	21	20	11	13	15	1	11	12	13	16	16	10
Tam 102	18	3	3	8	29	21	23	2	3	14	11	25	28
Carito	22	5	22	19	9	24	24	6	18	21	24	11	7
Clarion	26	9	9	15	2	28	19	3	30	22	23	22	2
Strampelli	7	25	1	3	4	10	8	19	5	15	1	21	5
Zenith	21	16	24	12	3	18	25	4	24	23	25	15	12
Hokuei	25	1	14	22	26	20	17	12	22	19	21	12	24
Victor I	3	27	19	4	6	12	10	22	19	11	4	18	6
Atlas 66	12	30	27	27	22	25	16	15	21	4	15	20	27
C.I.15074	16	17	21	23	19	23	26	16	14	17	19	23	29
Carifen 12	20	7	7	26	8	13	22	24	23	26	20	17	13
Lilifen	19	11	18	6	5	11	7	25	11	24	8	8	16
Diplomat	29	20	30	20	11	30	18	10	27	27	28	9	20
Kirac 66	17	10	17	5	30	29	27	29	6	16	22	27	30
Vakka	27	22	26	28	27	19	28	23	25	25	29	29	23
Jyva	28	24	28	29	20	26	30	28	28	28	27	28	22
Lerma Rojo 64	4	23	6	24	28	14	2	30	1	29	2	26	17
Starke	30	26	29	30	23	27	29	27	29	30	30	30	14

Table 51. Summary of "Yield" rankings for cultivars grown in the Fifth International Winter Wheat Performance Nursery, 1973. (Northern Hemisphere). Continued

Cultivar	Islamabad, Pakistan	Warsaw, Poland	Fundulea, Romania	Svalof, Sweden	Zurich, Switzerland	Ankara, Turkey	Erzurum, Turkey	Eskisehir, Turkey	Fort Collins Colorado U.S.A.	Lincoln, Nebraska U.S.A.	Ithaca, New York U.S.A.
Sava	4	18	2	21	5	28	20	3	1	26	10
Centurk	17	9	3	14	14	8	1	2	5	1	20
Rousalka	2	24	22	23	22	18	19	14	4	15	24
Zlatna dolina	9	20	9	9	15	12	26	20	8	21	6
Blueboy	11	1	6	8	13	9	3	6	18	9	1
Probstdorfer Extrem	16	2	1	4	6	1	9	10	10	5	7
Bezostaya 1	12	12	26	16	3	5	11	7	19	6	13
Dacia	10	15	8	18	7	20	16	15	9	12	9
Maris Nimrod	18	3	4	2	1	15	10	1	23	24	4
Backa	3	17	10	11	4	11	22	19	16	30	5
Moldova	8	21	18	27	17	6	24	11	12	11	17
Lancota (NE7u132)	13	19	5	15	24	14	12	18	3	2	25
Marimo 3	6	27	12	13	9	27	28	17	13	25	8
Tam 102	21	14	21	29	27	23	15	5	2	10	22
Caribo	25	10	25	1	2	17	2	13	24	13	2
Clarion	22	7	7	3	8	4	6	9	25	28	16
Strampelli	1	29	29	28	21	24	29	30	7	18	21
Zenith	20	6	24	7	11	26	7	12	21	16	3
Hokuei	19	13	14	26	26	10	4	16	22	8	11
Victor I	7	30	20	6	16	7	30	22	17	19	27
Atlas 66	23	25	19	25	10	19	18	26	15	22	12
C.I.15074	24	16	16	22	25	2	13	28	6	3	19
Carifen 12	27	23	13	13	28	13	8	4	26	20	26
Lilifen	15	26	15	5	23	29	23	24	11	27	29
Diplomat	26	8	11	10	18	21	17	25	27	23	15
Kirac 66	14	22	17	24	29	3	5	8	14	14	28
Vakka	28	11	23	20	19	22	21	21	28	4	18
Jyva	29	4	28	19	12	30	14	29	29	7	14
Lerma Rojo 64	5	28	27	30	30	16	27	27	20	29	30
Starke	30	5	30	17	20	25	25	23	30	17	23

Table 51. Summary of "Yield" rankings for cultivars grown in the Fifth International Winter Wheat Performance Nursery, 1973. (Northern Hemisphere). Concluded.

Cultivar	Rowan County, North Carolina U.S.A.	Stillwater, Oklahoma U.S.A.	Corvallis, Oregon U.S.A.	Pullmen, Washington U.S.A.	Krasnodar, U.S.S.R.	Ponsheim, West Germany	Weihenstephan, West Germany	Novi Sad, Yugoslavia	Zagreb, Yugoslavia
Sava	5	2	21	3	1	1	3	1	1
Centurk	2	12	9	16	8	2	12	12	10
Rousalka	13	6	2	15	2	8	23	4	6
Zlatna dolina	12	1	17	13	4	5	5	2	2
Blueboy	7	5	8	14	12	11	22	18	15
Probstdorfer Extrem	16	8	18	7	11	4	15	3	11
Bezostaya 1	4	3	5	17	18	9	11	11	8
Dacia	1	13	10	24	6	7	14	15	5
Maris Nimrod	8	26	4	1	19	3	1	14	7
Backa	24	4	15	22	5	6	9	10	3
Moldova	15	17	12	25	10	12	8	16	9
Lancota (NE701132)	10	11	25	19	9	10	26	13	16
Marimp 3	26	9	13	23	7	15	21	5	12
Tam 102	3	14	22	5	16	19	29	21	18
Caribo	11	23	6	4	23	21	4	19	17
Clarion	21	21	19	2	17	22	7	26	20
Strampelli	28	7	13	27	3	13	13	9	13
Zenith	19	22	20	10	15	17	2	22	19
Hokuei	17	16	28	12	22	27	17	25	24
Victor I	29	10	16	29	29	26	20	6	4
Atlas 66	9	20	24	20	13	16	6	7	21
C.I.15074	6	19	29	18	27	14	25	27	26
Carifen 12	14	24	7	9	20	18	24	8	25
Lilifen	27	15	11	28	25	25	18	20	14
Diplomat	20	28	14	8	14	29	19	24	29
Kirac 66	18	18	27	11	24	30	30	28	27
Vakka	22	25	26	26	21	20	27	17	23
Jyva	23	27	30	21	26	24	16	23	28
Lerma Rojo 64	30	30	1	30	30	23	28	30	22
Starke	25	29	23	6	28	28	10	29	30

Table 52. Summary of agronomic, quality and yield data for 30 cultivars grown in the Fifth International Winter Wheat Performance Nursery, 1973. (Northern Hemisphere).

Cultivar	Test weight		Date of Flowering		Date of Ripening		Plant height		Lodging		Shattering	
	kg/hl	rank	days from Jan. 1	rank	days from Jan. 1	rank	cm	rank	%	rank	%	rank
Number of sites	18		31		25		33		28		10	
Sava	77.7	15	144.0	8	181.3	11	83.9	5	11.2	8	6.0	13
Centurk	79.6	4	147.2	16	182.0	14	103.1	19	53.5	29	7.0	17
Rousalka	78.8	7	139.5	2	179.1	4	79.6	4	7.6	4	8.2	19
Zlatna dolina	77.8	13	143.8	7	180.7	7	77.2	2	7.6	5	8.8	22
Blueboy	75.0	23	147.1	15	184.4	19	103.0	18	19.4	14	5.3	10
Bezostaya 1	80.8	1	146.9	12	184.3	17	97.8	14	23.4	17	5.6	11
Dacia	78.4	11	145.0	11	181.6	13	105.8	21	32.3	20	6.6	16
Probstdorfer Extrem	80.7	2	151.1	21	184.2	16	116.7	29	37.6	24	2.8	1
Backa	78.6	9	144.3	10	181.3	19	87.0	6	10.7	7	12.3	28
Maris Nimrod	73.2	29	154.5	23	190.1	24	94.7	12	24.8	18	3.6	4
Moldova	77.6	17	141.1	4	178.5	1	106.3	22	35.3	22	9.4	25
Lancota (NE701132)	79.9	3	146.9	13	184.3	18	107.9	25	44.3	26	4.3	6
Strampelli	77.8	12	140.4	3	178.9	2	88.5	7	33.6	21	8.6	21
Marimp 3	78.6	8	143.3	6	181.1	8	92.7	11	16.8	13	14.5	30
Tam 102	75.1	22	144.3	9	180.2	5	92.5	10	19.6	16	4.0	5
Caribo	74.7	24	155.0	25	189.8	23	103.1	20	16.5	12	4.9	8
Clarion	73.9	26	156.7	27	193.1	28	94.9	13	13.4	10	9.5	26
Zenith	77.0	20	154.8	24	190.6	26	99.5	15	13.3	9	7.2	18
Holuei	77.1	19	148.4	19	186.7	21	98.3	16	46.3	27	3.0	2
Victor I	77.6	16	142.4	5	180.3	6	79.4	3	7.7	6	9.3	24
Atlas 66	79.1	6	147.0	14	186.0	18	118.1	30	46.7	28	5.1	9
C.I.15074	79.5	5	147.6	17	183.5	15	109.2	27	37.9	25	5.6	12
Carifen 12	67.7	30	152.7	22	186.0	19	76.5	1	5.8	3	3.1	3
Lilifen	75.3	21	149.6	20	190.3	25	89.4	8	4.5	1	4.7	7
Diplomat	78.5	10	156.8	28	193.4	29	99.5	17	5.7	2	12.3	29
Kirac 66	77.5	18	147.7	18	186.6	20	114.0	28	62.8	30	6.6	15
Vakka	73.8	27	155.6	26	188.3	22	108.0	26	29.3	19	9.8	27
Jyva	73.6	28	157.4	29	191.7	27	106.3	23	21.2	15	9.2	23
Lerma Rojo 64	77.8	14	137.2	1	179.0	3	91.0	9	37.1	23	6.4	14
Starke	74.3	25	161.3	30	196.6	30	106.7	24	14.2	11	8.5	20
Mean	76.9		148.3		185.1		97.7		24.6		7.1	
Coefficient of variation (%)	2.1		1.2		1.5		5.0		58.7		97.6	
L.S.D. of cultivar means (.05)	1.7		2.1		2.4		2.9		8.8		7.2	

Table 52. Summary of agronomic, quality and yield data for 30 cultivars grown in the Fifth International Winter Wheat Performance Nursery, 1973. (Northern Hemisphere). Concluded.

Cultivar	Winter survival		Frost damage		1000-kernel weight		Protein		Yield	
	%	rank	0-9	rank	gm	rank	%	rank	q/ha	% of Bezostaya 1
Number of sites	22		4		7		31		43	
Sava	82.1	23	2.0	22	31.6	22	13.5	23	45.0	110.6
Centurk	94.1	1	1.5	13	29.6	29	14.0	19	42.2	103.7
Rousalka	87.0	19	1.3	4	40.6	1	14.0	20	42.1	103.4
Zlatna dolina	85.0	20	1.5	17	34.6	12	13.3	26	41.9	102.9
Blueboy	89.6	10	1.5	15	33.6	17	12.4	30	40.8	100.2
Bezostaya 1	92.4	6	1.3	6	40.4	2	14.1	16	40.7	100.0
Dacia	89.0	14	1.3	3	39.9	4	14.9	5	40.7	100.0
Probstdorfer Extrem	92.8	4	1.3	8	35.1	11	14.7	6	40.4	99.3
Backa	73.9	24	2.3	24	40.4	3	14.6	9	40.4	99.3
Maris Nimrod	88.0	17	2.1	23	35.3	10	13.4	24	40.0	98.3
Moldova	89.1	13	1.5	12	38.0	5	15.2	4	38.3	94.1
Lancota (NE701132)	92.5	5	1.2	2	36.0	8	15.5	3	38.2	93.9
Strampelli	64.1	27	3.4	27	33.7	15	13.0	28	37.7	92.6
Marimp 3	65.7	26	3.6	30	33.9	14	14.3	14	37.7	92.6
Tam 102	92.2	7	1.2	1	26.9	30	13.4	25	37.0	90.9
Caribo	89.3	11	1.3	7	33.6	16	13.6	22	35.9	88.2
Clarion	88.6	15	1.5	14	33.0	18	14.1	17	35.9	88.2
Zenith	87.6	18	1.4	10	30.6	27	14.5	11	35.7	87.7
Hokuei	90.3	8	1.4	11	32.2	21	13.3	27	35.1	86.2
Victor I	54.1	28	3.5	29	32.2	20	13.7	21	34.7	85.3
Atlas 66	73.8	25	2.5	25	33.9	13	16.7	1	34.7	85.3
C.I.15074	93.8	2	1.5	18	30.9	24	15.7	2	34.1	83.8
Carifen 12	93.3	21	1.6	20	30.2	28	12.9	29	33.7	82.8
Lilifen	53.0	29	2.9	26	37.4	6	14.4	13	33.2	81.6
Diplomat	89.3	12	1.5	16	36.4	7	14.4	12	31.3	76.9
Kirac 66	82.3	22	1.9	21	33.0	19	14.6	10	29.7	73.0
Vakka	93.3	3	1.3	5	30.9	25	14.7	7	29.4	72.2
Jyva	90.0	9	1.6	19	31.2	23	14.6	8	28.4	69.8
Lerma Rojo 64	37.1	30	3.5	28	35.5	9	14.0	18	27.7	68.1
Starke	88.6	16	1.4	9	30.9	26	14.2	15	26.1	64.1
Mean	82.4		1.9		34.1		14.2		36.3	89.1
Coefficient of variation (%)	8.3		20.7		6.0		6.6		15.0	--
L.S.D. of cultivar means (.05)	9.9		1.1		3.3		0.6		3.6	--

SOUTHERN HEMISPHERE

ARGENTINA

Balcarce

COOPERATOR(S): R. Bedogni; V. Pereira; L. Delmagro; E. F. Godoy.

DATE OF PLANTING (effective germination): June 12, 1973.

PRECIPITATION DURING CYCLE OF TEST: 484.5 mm.

AMOUNT OF IRRIGATION APPLIED: None.

FERTILIZER USED: 100 kg/ha of Diammonium Phosphate (18-47-0).

GENERAL DESCRIPTION OF CLIMATIC CONDITIONS DURING TEST: A series of severe frosts occurred at the end of October and the beginning of November.

DISEASE DEVELOPMENT: Severe septoria infection occurred during July and August.

INSECT, WEED OR PEST PROBLEMS: None.

DATE OF HARVEST: January 5, 1974.

AREA HARVESTED FOR YIELD: 3.0 square meters.

DATES WHEN DIFFERENT NOTES WERE TAKEN:
Septoria tritici - August 10, September 10-11, 1973
Stripe rust - August 25, September 25, October 25, November 25, 1973
Leaf rust - October 25, November 30, 1973

Correlation coefficients for agronomic and grain quality traits of 30 cultivars in the Fifth International Winter Wheat Performance Nursery grown at Balcarce, Argentina, 1973.

	Yield	Protein	Flowering	Ripening	Plant height
Protein	-.67**				
Flowering	.65**	-.48**			
Ripening	.59**	-.43**	.79**		
Plant height	.56**	-.32**	.40**	.27**	
Winter survival	-.88**	.63**	-.57**	-.49**	-.48**

**Significant at the 1% level.

Table 53. Agronomic, grain quality, and disease data for the 30 cultivars in the Fifth International Winter Wheat Performance Nursery grown at Balcarce, Argentina, 1973.

Cultivar	Yield q/ha	Test weight[a] kg/hl	Protein %	Lysine % of protein	Date of Flowering days from Jan. 1	Date of Ripening days from Jan. 1	Plant height cm	Winter survival %	Rust Stripe Sev. %	Rust Stripe Resp.	Rust Leaf Sev. %	Rust Leaf Resp.	Septoria tritici %
Lilifen	41.6	72.2	12.3	3.09	305	360	106	18	62	MS	0	0	40
Carifen 12	40.4	64.5	12.4	3.21	315	368	88	10	17	MS	80	S	40
Maris Nimrod	36.4	68.7	11.0	3.37	316	362	105	10	15	MR	80	S	30
Lancota (NE701132)	35.8	75.2	13.7	2.91	302	349	109	10	12	MR	12	MS	72
Clarion	34.3	72.9	12.7	3.23	320	360	101	13	0	0	20	MR	70
Caribo	34.1	70.2	13.0	3.01	319	368	110	18	20	MR-MS	80	MS-S	40
Zenith	31.9	70.7	15.9	2.68	316	360	100	13	27	MS	70	MR	20
Probstdorfer Extrem	29.8	77.5	13.2	2.81	317	365	120	20	12	MR-S	30	MR-MS	40
Hokuei	29.7	70.0	13.3	3.02	304	368	100	30	85	MS	0	0	20
Diplomat	28.9	76.5	13.0	3.01	322	368	101	23	0	0	80	S	20
Blueboy	27.3	66.8	14.8	2.94	297	345	105	28	40	MR	60	MR	30
Bezostaya 1	25.3	67.8	14.0	2.98	300	349	106	30	45	MR-MS	20	MR	60
Jyva	24.0	72.3	13.4	3.07	320	353	98	30	0	0	67	MS-S	60
Vakka	22.2	69.7	13.6	2.80	319	360	116	38	10	MS	80	MR	30
Kirac 66	22.1	72.4	15.2	3.00	297	348	116	40	0	0	85	S	42
Centurk	21.9	75.2	13.3	3.05	298	350	101	40	50	0-MS	20	0-MS	60
Atlas 66	21.4	70.9	17.4	2.67	304	348	119	43	17	MS	25	MR	40
C.I.15074	20.1	74.0	16.6	2.86	310	368	104	40	85	MS	0	0	20
Dacia	20.1	72.2	15.2	2.88	301	353	105	30	0	0	32	MS	50
Starke	19.9	67.0	14.3	3.12	330	368	98	45	0	0	90	S	50
Tam 102	12.1	64.5	15.3	2.99	302	346	100	63	90	S	0	0	50
Backa	11.8	67.6	16.8	2.81	298	350	85	73	0	0	27	MS-S	75
Sava	8.2	--	16.0	3.14	296	345	86	73	47	0-MS	15	0-S	60
Moldova	6.7	--	16.1	2.75	291	346	110	75	30	MS	32	MR-MS	70
Lerma Rojo 64	5.6	--	14.7	3.00	280	342	85	45	0	0	10	0-MS	90
Zlatna dolina	5.5	73.2	15.2	2.93	296	344	76	58	90	MS	0	0	45
Marimp 3	4.5	--	17.0	3.13	296	345	90	80	90	S	10	MS	60
Victor I	3.6	--	17.0	2.94	290	345	81	80	40	MS	30	MS	90
Strampelli	2.9	--	17.4	2.81	298	364	85	80	22	MS	22	MS	80
Rousalka	0.9	--	18.6	2.81	290	344	81	50	0	0	0	0	90
Mean	21.0	71.0	14.7	2.97	305.0	354.7	99.6	40.2	30.2		35.9		51.5
Coefficient of variation (%)	10.5	--	--	--	7.6	0.1	2.1	17.7	--		--		--
L.S.D. of cultivar means (.05)	3.1	--	--	--	3.3	0.5	2.9	10.0	--		--		--

a) Based on four reps or less.

ARGENTINA

Bordenave

COOPERATOR(S): S. E. Garbini; E. F. Godoy.

DATE OF PLANTING: May 28, 1973; effective germination June 9, 1973.

PRECIPITATION DURING CYCLE OF TEST: 540 mm.

AMOUNT OF IRRIGATION APPLIED: None.

FERTILIZER USED: None.

GENERAL DESCRIPTION OF CLIMATIC CONDITIONS DURING TEST: Favorable humidity and temperature in June and July. The weather was dry and frost occurred in August and September. October had abundant rain. There was some frost at flowering in November followed by high temperatures in December.

DISEASE DEVELOPMENT: Heavy attack of stripe and leaf rusts.

INSECT, WEED OR PEST PROBLEMS: None.

DATE OF HARVEST: December 13, 1973 - January 6, 1974.

AREA HARVESTED FOR YIELD: 3.0 square meters.

DATES WHEN DIFFERENT NOTES WERE TAKEN:
Height - October 17 - December 6, 1973
Lodging - December 11, 1973 - January 4, 1974
Shattering - December 12, 1973 - January 6, 1974
Stripe rust - November 17, 1973
Leaf rust - December 3, 1973
Frost damage - September 13, 1973

Correlation coefficients for agronomic and grain quality traits of 30 cultivars in the Fifth International Winter Wheat Performance Nursery grown at Bordenave, Argentina, 1973.

	Yield	Test weight	Protein	Flowering	Ripening	Plant height	Lodging
Test weight	.15						
Protein	-.72**	.15					
Flowering	.12	-.44**	-.25**				
Ripening	.08	-.41**	-.24**	.87**			
Plant height	.25**	.33**	-.09	.27**	.23*		
Lodging	-.01	.39**	.08	-.04	-.01	.60**	
Frost	-.32**	.07	.38**	-.54**	-.49**	-.38**	-.09

**Significant at the 1% level. *Significant at the 5% level.

Table 54. Agronomic, grain quality, and disease data for the 30 cultivars in the Fifth International Winter Wheat Performance Nursery grown at Bordenave, Argentina, 1973.

Cultivar	Yield q/ha	Test weight kg/hl	Protein %	Lysine[a] % of protein	Date of Flowering days from Jan. 1	Date of Ripening days from Jan. 1	Plant height cm	Lodging %	Rust Stripe Sev. %	Rust Stripe Resp.	Rust Leaf Sev. %	Rust Leaf Resp.	Frost damage 0-9 9/13/73	Frost damage 0-9 at Flowering
Blueboy	48.2	74.6	13.0	3.13	302	354	116	8	6	MR	30	S	0	1
Carifen 12	45.9	66.6	12.0	3.21	314	360	90	0	0	0	72	S	0	1
Dacia	43.8	78.4	14.9	3.06	303	356	120	3	0	0	7	R	0	1
Lilifen	39.1	76.4	14.7	3.15	310	361	111	3	15	MS	0	0-R	1	1
Hokuei	36.3	79.1	12.7	3.01	314	360	115	0	25	S	15	S	0	2
Probstdorfer Extrem	36.2	79.8	15.0	2.90	316	358	130	15	1	0-R	7	MR	0	1
Zenith	34.0	75.1	14.7	3.03	324	361	115	0	0	0	57	S	0	1
Tam 102	33.6	73.3	13.4	3.20	306	357	114	0	72	S	20	S	0	1
Centurk	32.7	80.9	13.9	3.08	305	354	119	33	15	MS	2	R	0	1
Lancota (NE701132)	31.8	79.2	14.5	2.87	309	356	131	50	17	MS	4	R-MR	0	1
Zlatna dolina	31.2	75.4	13.4	3.09	298	351	90	0	65	S	0	0	2	4
Caribo	31.1	71.0	13.2	3.10	327	366	115	0	0	0	47	S	0	1
Maris Nimrod	29.9	66.1	12.5	3.25	324	362	113	0	0	0	67	S	0	1
Marimp 3	29.8	76.0	15.4	3.05	297	351	98	0	17	MS-S	6	R	5	5
Backa	29.8	76.6	16.1	3.01	306	357	98	0	8	MS	2	R	3	1
Kirac 66	28.4	78.0	15.9	3.00	302	355	125	38	0	0	82	S	0	1
Bezostaya 1	27.5	82.1	15.3	3.00	305	357	103	0	8	MS	2	R	0	2
C.I.15074	26.1	79.1	13.8	3.19	313	359	129	25	82	S	32	S	0	3
Clarion	26.0	72.3	14.7	3.20	328	366	104	0	0	0	5	R	0	1
Vakka	25.6	70.2	15.2	3.21	325	362	110	0	0	0	37	S	0	2
Diplomat	24.0	72.4	15.5	3.12	330	366	111	0	0	0	75	S	0	1
Jyva	23.2	70.0	14.8	3.08	327	364	119	0	0	0	57	S	0	1
Atlas 66	21.2	77.1	17.5	2.97	310	359	133	48	20	MS-S	4	R-MR	3	1
Victor I	20.8	73.6	14.8	3.10	295	353	93	0	0	0	10	MS	4	5
Sava	20.0	75.0	15.3	3.08	298	354	93	0	0	0	0	0	2	5
Rousalka	12.8	76.3	16.8	3.05	294	352	90	0	0	0	0	0-R	0	7
Moldova	10.7	74.9	18.6	2.83	295	351	103	0	0	0	6	R-MR	2	7
Starke	8.5	70.1	16.9	3.17	334	367	100	0	0	0	75	S	0	7
Lerma Rojo 64	6.8	--	17.6	3.02	288	348	108	0	0	0	35	S	3	8
Strampelli	5.5	--	16.7	2.91	294	352	101	0	10	MS	1	0-R	3	7
Mean	27.4	75.1	15.0	3.07	309.6	357.5	109.8	7.3	11.8		25.2		0.9	2.7
Coefficient of variation (%)	25.0	2.0	6.1	--	1.2	0.8	3.4	121.9	--		--		--	--
L.S.D. of cultivar means (.05)	9.6	2.1	1.3	--	5.0	3.8	5.2	12.6	--		--		--	--

a) One rep only.

BRAZIL

Pelotas

COOPERATOR(S): M. A. B. Rocha.

DATE OF PLANTING: July 1 - 2. Effective germination July 12, 1973.

PRECIPITATION DURING CYCLE OF TEST: Not reported.

AMOUNT OF IRRIGATION APPLIED: None.

FERTILIZER USED: N = 36 kg/ha; P_2O_5 = 92 kg/ha. Fertilizer applied as diammonium phosphate at 200 kg/ha with the seed.

GENERAL DESCRIPTION OF CLIMATIC CONDITIONS DURING TEST: Very rainy in July with some damage to plant development. Normal rains in the spring. Temperatures were cooler than normal in September and October. Normal dry period in late November and December.

DISEASE DEVELOPMENT: Abnormally low this year, especially for stem rust which was practically absent.

INSECT, WEED OR PEST PROBLEMS: Bird damage to the early entries (Lerma Rojo 64 and Victor I).

DATE OF HARVEST: December 31, 1973 - January 5, 1974.

AREA HARVESTED FOR YIELD: 3.0 square meters.

DATES WHEN DIFFERENT NOTES WERE TAKEN:
Height - December 31, 1973.

Table 55. Agronomic, grain quality, and disease data for the 30 cultivars in the Fifth International Winter Wheat Performance Nursery grown at Pelotas, Brazil, 1973.

Cultivar	Yield q/ha	Date of flowering[a] days from Jan. 1	Plant height[a] cm
Blueboy	29.0	308	75
Lancota (NE701132)	26.0	320	100
Centurk	25.8	319	95
Backa	23.3	319	75
Rousalka	22.7	308	75
Strampelli	22.5	306	85
Bezostaya 1	22.3	319	80
Tam 102	22.3	319	70
Marimp 3	22.2	308	80
Caribo	21.9	332	75
Atlas 66	21.6	318	100
Sava	20.6	313	75
C.I.15074	20.0	321	90
Lilifen	19.9	319	85
Moldova	19.8	316	100
Dacia	19.0	319	100
Kirac 66	18.8	306	70
Maris Nimrod	18.5	333	85
Clarion	18.1	322	75
Probstdorfer Extrem	18.1	329	90
Zlatna dolina	17.9	320	80
Hokuei	17.5	324	90
Carifen 12	17.4	330	60
Zenith	15.9	332	75
Diplomat	10.9	334	75
Vakka	7.6	337	80
Starke	3.2	--	--
Victor I	0.0	283	65
Lerma Rojo 64	0.0	268	75
Jyva	--	--	--
Mean	18.0	318	84
Coefficient of variation (%)	--	--	--
L.S.D. of cultivar means (.05)	--	--	--
Local cultivars			
Arthur	17.6	321	70
Benhur	18.6	322	70
B. Manant	25.2	306	90
Cinquent	27.3	306	110

a) One rep only.

CHILE

Chillan

COOPERATOR(S): L. Aguayo; I. Ramirez; E. Hacke; M. Mellado.

DATE OF PLANTING: June 22, 1973.

PRECIPITATION DURING CYCLE OF TEST: Not reported.

AMOUNT OF IRRIGATION APPLIED: Not reported.

FERTILIZER USED: N = 150 kg/ha (KNO_3); P_2O_5 = 150 kg/ha (triple superphosphate).

GENERAL DESCRIPTION OF CLIMATIC CONDITIONS DURING TEST: Rainfall lower than average of 1000 mm. Light drought in November (late spring).

DISEASE DEVELOPMENT: Good development of stripe rust but poor development of leaf rust.

INSECT, WEED OR PEST PROBLEMS: None.

DATE OF HARVEST: February 15, 1974.

AREA HARVESTED FOR YIELD: 3.0 square meters.

DATES WHEN DIFFERENT NOTES WERE TAKEN:
Plant height - January 25, 1974

Correlation coefficients for agronomic traits of 30 cultivars in the Fifth International Winter Wheat Performance Nursery grown at Chillan, Chile, 1973.

	Yield	Flowering
Flowering	.30**	
Plant height	.09	.42**

**Significant at the 1% level.

Table 56. Agronomic data for the 30 cultivars in the Fifth International Winter Wheat Performance Nursery grown at Chillan, Chile, 1973.

Cultivar	Yield q/ha	Date of flowering days from Jan. 1	Plant height cm
Carifen 12	54.1	166	94
Rousalka	52.5	141	91
Caribo	51.6	172	125
Maris Nimrod	50.1	171	114
Diplomat	47.9	176	121
Clarion	47.2	174	109
Bezostaya 1	43.7	155	115
Blueboy	40.4	155	119
Zenith	40.0	171	111
Probstdorfer Extrem	39.9	167	128
Lerma Rojo 64	39.7	134	101
Starke	39.0	181	136
Dacia	38.7	155	136
Lancota (NE701132)	30.8	158	134
Kirac 66	30.0	151	133
Sava	29.5	151	90
Hokuei	29.0	160	111
Lilifen	28.6	160	115
Jyva	24.8	174	130
Zlatna dolina	23.6	151	85
Moldova	23.2	144	134
Centura	22.7	157	113
Vakka	22.3	172	138
Backa	18.2	153	104
Tam 102	17.9	158	101
Strampelli	16.6	144	99
Marimp 3	16.2	150	109
Atlas 66	15.6	159	133
Victor I	11.0	145	88
C.I.15074	9.6	163	101
Mean	31.8	158.9	113.9
Coefficient of variation (%)	19.0	0.5	5.4
L.S.D. of cultivar means (.05)	8.5	1.1	8.6

CHILE

Temuco

COOPERATOR(S): F. Acevedo, C. Hewstone, I. Ramirez.

DATE OF PLANTING: June 3, 1973.

PRECIPITATION DURING CYCLE OF TEST: Not reported.

AMOUNT OF IRRIGATION APPLIED: None.

FERTILIZER USED: N = 100 kg/ha (NNO_3); P_2O_5 = 200 kg/ha (Triple superphosphate).

GENERAL DESCRIPTION OF CLIMATIC CONDITIONS DURING TEST: Rainfall provided good moisture conditions throughout the cycle except for light drought period during early grain development. Heavy rains occurred at ripening.

DISEASE DEVELOPMENT: Good development of stripe rust. Leaf rust appeared late and was without significance.

INSECT, WEED OR PEST PROBLEMS: Some aphids were present but damage was of no consequence.

DATE OF HARVEST: February 20, 1974.

AREA HARVESTED FOR YIELD: 3.0 square meters.

DATES WHEN DIFFERENT NOTES WERE TAKEN:
Stripe rust - December 17, 1973
Lodging - February 20, 1974
Height - February 20, 1974

Correlation coefficients for agronomic and grain quality traits of 30 cultivars in the Fifth International Winter Wheat Performance Nursery grown at Temuco, Chile, 1973.

	Yield	Protein	Flowering	Plant height
Protein	-.48**			
Flowering	.72**	-.65**		
Plant height	.50**	-.23**	.55**	
Lodging	.28**	-.09	.29**	.58**

**Significant at the 1% level.

Table 57. Agronomic, grain quality, and disease data for the 30 cultivars in the Fifth International Winter Wheat Performance Nursery grown at Temuco, Chile, 1973.

Cultivar	Yield q/ha	Protein %	Lysine[a] % of protein	Date of flowering days from Jan. 1	Plant height cm	Lodging %	Stripe rust Sev. %	Stripe rust Resp.
Caribo	67.9	11.2	0.84	184	131	19	22	MR-MS
Maris Nimrod	64.9	13.1	0.67	184	125	27	30	MS
Diplomat	61.2	13.4	0.75	185	134	1	4	R-MS
Carifen 12	59.3	11.0	0.88	183	100	13	27	MS
Blueboy	56.0	14.0	0.66	172	123	21	52	MS
Clarion	53.0	13.3	0.67	184	115	3	0	0
Starke	51.1	12.2	0.78	190	141	35	25	MR-MS
Lilifen	50.1	16.6	0.72	175	120	0	27	MS
Jyva	45.5	16.1	0.75	185	135	36	52	MS
Zenith	45.2	13.0	0.91	184	118	1	40	MS
Vakka	43.9	15.4	0.78	184	136	30	3	0-MR
Dacia	43.6	13.8	0.81	173	134	26	0	0
Kirac 66	40.8	14.2	0.82	176	140	78	0	0
Probstdorfer Extrem	39.1	12.2	0.75	179	138	45	65	MS-S
Bezostaya 1	36.8	13.6	0.65	172	114	6	52	MR-S
Lancota (NE701132)	35.2	15.0	0.77	177	128	30	40	MR-MS
Hokuei	25.1	13.2	0.78	177	116	44	72	MS-S
Atlas 66	22.9	14.2	0.82	176	154	33	84	S
Moldova	20.3	17.4	0.84	164	130	19	32	MR-MS
Rousalka	16.5	16.8	0.95	162	96	0	2	0-MR
Centurk	15.6	15.2	0.82	172	126	18	94	S-S
Backa	15.4	16.2	0.91	168	105	1	47	MS-S
Sava	13.4	16.2	0.80	168	96	0	84	MR-MS
C.I.15074	12.7	14.3	0.94	177	124	4	96	S
Strampelli	11.3	16.2	0.92	161	110	5	37	MS
Lerma Rojo 64	8.2	19.5	1.02	148	98	8	72	S
Zlatna dolina	7.8	14.2	0.88	168	95	0	87	S
Tam 102	5.4	14.9	0.95	173	105	1	96	MR-S
Karimp 3	5.0	13.9	1.00	167	111	0	77	S
Victor I	3.7	17.9	1.03	161	94	0	84	MS-S
Mean	32.6	14.6	0.83	174.2	119.7	16.7	46.8	
Coefficient of variation (%)	24.5	8.4	--	0.4	4.9	98.0		
L.S.D. of cultivar means (.05)	11.2	1.7	--	1.1	8.3	23.1		
Local cultivars								
Manella	65.6	--	--	183	118	4	0	0-MR
Melifen	69.9	--	--	186	108	1	0	0

a) One rep only.

Table 58. Summary of average Yield in quintals per hectare for cultivars grown in the Fifth International Winter Wheat Performance Nursery, 1973. (Southern Hemisphere).

Cultivar	Balcarce, Argentina	Bordenave, Argentina	Pelotas, Brazil	Chillan, Chile	Temuco, Chile	Cultivar mean yield over 5 locations	
						q/ha	% of Bezostaya 1
Carifen 12	40.4	45.9	17.4	54.1	59.3	43.4	139.6
Caribo	34.1	31.1	21.9	51.6	67.9	41.3	132.8
Blueboy	27.8	48.2	29.0	40.4	56.0	40.3	129.6
Maris Nimrod	36.4	29.9	18.5	50.1	64.9	40.0	128.6
Lilifen	41.6	39.1	19.9	28.6	50.1	35.9	115.4
Clarion	34.3	26.0	18.1	47.2	53.0	35.7	114.8
Diplomat	28.9	24.0	10.9	47.9	61.2	34.6	11.3
Zenith	31.9	34.0	15.9	40.0	45.2	33.4	07.4
Dacia	20.1	43.8	19.0	38.7	43.6	33.0	06.1
Probstdorfer Extrem	29.8	36.2	18.1	39.9	39.1	32.6	04.8
Lancota (NE701132)	35.8	31.8	26.0	30.8	35.2	31.9	02.6
Bezostaya 1	25.3	27.5	22.3	43.7	36.8	31.1	00.0
Jyve	24.0	23.2	--	24.8	45.5	29.4	94.5
Kirac 66	22.1	28.4	18.8	30.0	40.8	28.0	90.0
Hokuei	29.7	36.3	17.5	29.0	25.1	27.5	88.4
Starke	19.9	8.5	3.2	39.0	51.1	24.3	78.1
Vakka	22.2	25.6	7.6	22.3	43.9	24.3	78.1
Centurk	21.9	32.7	25.8	22.7	15.6	23.7	76.2
Rousalka	0.9	12.8	22.7	52.5	16.5	21.1	67.9
Atlas 66	21.4	21.2	21.6	15.6	22.9	20.5	65.9
Backa	11.8	29.8	23.3	18.2	15.4	19.7	63.3
Tam 102	12.1	33.6	22.3	17.9	5.4	18.3	58.8
Sava	8.2	20.0	20.6	29.5	13.4	18.3	58.8
C.I.15074	20.1	26.1	20.0	9.6	12.7	17.7	56.9
Zlatna dolina	5.5	31.2	17.9	23.6	7.8	17.2	55.3
Moldova	6.7	10.7	19.8	23.2	20.3	16.1	51.8
Marimp 3	4.5	29.8	22.2	16.2	5.0	15.5	49.8
Lerma Rojo 64	5.6	6.8	0.0	39.7	8.2	12.1	38.9
Strampelli	2.9	5.5	22.5	16.6	11.3	11.8	37.9
Victor I	3.6	20.8	0.0	11.0	3.7	7.8	25.1
Mean	21.0	27.4	18.0	31.8	32.6	26.2	--

Table 59. Summary of Yield rankings for cultivars grown in the Fifth International Winter Wheat Performance Nursery, 1973. (Southern Hemisphere).

Cultivar	Balcarce, Argentina	Bordenave, Argentina	Pelotas, Brazil	Chillan, Chile	Temuco, Chile
Strampelli	2	30	6	26	25
Probstdorfer Extrem	8	6	19	10	14
Victor I	28	24	28	29	30
Carifen 12	2	2	23	1	4
Caribo	6	12	10	3	1
C.I.15074	19	18	13	30	24
Zlatna dolina	26	11	21	20	27
Hokuei	9	5	22	17	17
Atlas 66	17	23	11	28	18
Diplomat	10	21	25	5	3
Blueboy	11	1	1	8	5
Maris Nimrod	3	13	18	4	2
Mariup 3	27	14	9	27	29
Jyva	13	22	--	19	9
Sava	23	25	12	16	23
Lancota (NE701132)	4	10	2	14	16
Bezostaya I	12	17	7	7	15
Lilifen	1	4	14	18	8
Vakka	14	20	26	23	11
Zenith	7	7	24	9	10
Clarion	5	19	20	6	6
Lerma Rojo 64	25	29	29	11	26
Centurk	16	9	3	22	21
Backa	22	15	4	24	22
Rousalka	30	26	5	2	20
Moldova	24	27	15	21	19
Tam 102	21	8	8	25	28
Dacia	18	3	16	13	12
Starke	20	28	27	12	7
Kirac 66	15	16	17	15	13

Table 60. Summary of agronomic, quality and yield data for 29 winter cultivars grown in the "Fourth and Fifth International Winter Wheat Performance Nurseries," 1972 and 1973. (Northern Hemisphere).

Cultivar	Test weight kg/hl	Test weight rank	Date of Flowering days from Jan. 1	Date of Flowering rank	Date of Ripening days from Jan. 1	Date of Ripening rank	Plant height cm	Plant height rank	Lodging %	Lodging rank	Winter survival %	Winter survival rank	Protein %	Protein rank	Yield q/ha	Yield % of Bezostaya 1
Number of sites	13		21		17		25		19		13		23		34	
Sava	76.9	14	145.4	5	187.9	7	84.4	5	8.0	7	81.8	22	13.3	21	46.3	106.7
Zlatna dolina	77.0	13	145.2	4	187.7	5	78.9	2	6.9	6	82.6	21	13.2	22	43.6	100.5
Bezostaya 1	79.8	2	148.2	11	190.5	13	98.4	13	19.8	14	91.5	6	13.5	20	43.4	100.0
Dacia	78.0	8	146.7	10	188.0	8	106.9	22	32.8	20	88.7	13	14.6	5	43.0	99.1
Centurk	77.9	10	149.4	14	189.0	11	104.1	18	55.7	27	94.1	2	13.8	19	42.9	98.8
Probstdorfer Extrem	79.9	1	151.6	19	192.2	18	118.7	29	44.3	23	93.1	3	14.1	13	42.9	98.8
Maris Nimrod	71.7	28	156.1	23	195.4	24	95.6	11	26.4	17	88.5	15	12.9	25	42.[illegible]	98.2
Blueboy	73.9	23	149.0	13	190.7	15	104.9	19	23.9	15	89.3	12	12.2	29	42.0	96.8
Rousalka	78.3	6	141.9	1	185.8	1	80.7	4	6.0	3	84.7	18	14.0	15	42.0	96.8
Backa	77.9	9	146.3	9	188.9	10	86.7	6	9.8	8	74.1	24	14.4	8	40.2	92.6
Caribo	74.1	21	156.9	25	195.3	22	104.9	20	17.2	13	88.6	14	12.9	24	39.8	91.7
Moldova	77.3	11	143.0	2	186.0	2	106.2	21	35.6	21	87.6	16	14.8	4	39.4	90.8
Lancota (NE701132)	78.8	4	148.8	12	190.6	14	107.6	23	48.7	25	93.0	5	15.5	2	39.3	90.[illegible]
Zenith	76.4	17	156.1	22	195.6	25	100.2	14	15.7	12	85.8	17	14.0	14	39.0	89.9
Tam 102	74.0	22	146.0	8	187.0	3	92.9	10	26.3	16	91.3	7	13.2	23	38.4	88.5
Clarion	72.6	27	157.9	27	197.7	27	96.4	12	14.3	10	82.7	20	13.9	18	38.1	87.8
Hokuei	75.9	18	149.9	18	191.9	17	100.9	16	57.9	28	91.1	9	12.7	28	36.8	84.8
Marimp 3	77.2	12	146.0	7	188.7	9	92.9	9	13.8	9	59.3	26	14.3	10	36.8	84.7
Atlas 66	78.4	5	149.6	16	192.3	20	116.3	28	50.4	26	74.1	25	16.6	1	35.8	82.5
Strampelli	76.8	15	143.7	3	187.1	4	88.5	7	30.3	19	56.6	27	12.8	27	35.4	81.6
Carifen 12	66.0	29	153.9	21	191.5	16	78.1	1	6.0	2	83.4	19	12.9	26	35.0	80.6
C.I.15074	78.9	3	149.6	15	189.6	12	110.0	24	45.3	24	95.3	1	15.5	3	34.4	79.3
Diplomat	78.2	7	158.2	28	199.0	28	103.1	17	6.9	5	90.2	10	14.0	17	34.4	79.3
Liliffen	74.7	20	151.7	20	195.4	23	89.7	8	4.7	1	47.9	28	14.6	7	33.8	77.6
Victor I	76.4	16	145.9	6	187.8	6	79.1	3	6.8	4	41.2	29	14.0	16	32.7	75.3
Vakka	73.1	26	156.1	24	194.0	21	111.2	26	38.0	22	93.1	4	14.1	12	31.3	72.1
Kirac 66	75.7	19	149.6	17	192.2	19	114.1	27	68.0	29	78.0	23	14.6	6	31.0	71.4
Jyva	73.4	25	157.6	26	195.9	26	110.5	15	30.1	18	91.1	8	14.3	9	29.0	66.8
Starke	73.7	24	161.6	29	200.4	29	110.9	25	15.4	11	90.1	11	14.1	11	28.8	66.4
Mean	76.0		150.4		191.5		99.1		26.4		82.4		14.0		37.9	87.3
Coefficient of variation (%)	2.1		1.4		1.5		4.8		55.5		6.2		5.0		13.7	--
L.S.D. of cultivar means (.05)	1.7		1.9		2.0		[illegible]		10.3		10.2		0.7		4.4	--

Table 61. Two-year mean yields and ranks for winter cultivars grown in the International Winter Wheat Performance Nurseries at nine locations in the Northern European region, together with regional means, 1972-1973.

Cultivar	Vienna, Austria		Male Ripnany, Czechoslovakia		Sedlec, Czechoslovakia		Cambridge,[a] England		Wageningen, Netherlands		Svalof, Sweden		Zurich, Switzerland		Monsheim, West Germany		Weihenstephan, West Germany		Cultivar mean over 9 locations[b]
	q/ha	rank	q/ha	rank	q/ha	rank	q/ha	rank	q/ha	rank	q/ha	rank	q/ha	rank	q/ha	rank	q/ha	rank	
Maris Nimrod	56.7	4	58.2	5	64.3	1	69.1	1	59.0	1	70.8	1	57.8	1	47.6	1	86.3	1	63.3
Sava	60.4	2	68.7	1	60.3	4	56.3	4	50.3	5	51.9	12	47.1	7	39.4	8	80.8	3	57.2
Caribo	45.6	15	57.5	6	58.6	6	56.9	3	49.6	6	69.9	2	51.7	2	34.9	18	80.2	4	56.1
Zenith	52.9	7	61.7	3	60.9	2	51.9	9	48.1	11	56.1	16	42.9	11	37.7	10	82.4	2	55.0
Probstdorfer Extrem	57.9	3	55.8	11	53.7	8	50.0	13	45.7	12	64.0	5	43.5	10	42.3	2	74.5	7	54.2
Clarion	46.9	13	55.8	10	60.8	3	55.1	5	50.4	4	66.1	4	42.6	12	31.0	23	75.9	6	53.8
Centurk	60.7	1	59.5	4	59.7	5	44.0	22	40.0	20	59.4	7	39.4	15	42.1	3	76.1	5	53.4
Zlatna dolina	49.3	11	57.3	7	48.6	16	47.9	16	54.3	2	57.7	9	47.4	6	41.0	5	73.2	9	53.0
Bezostaya 1	45.6	14	63.9	2	50.8	11	50.4	11	44.5	14	54.8	10	47.0	8	40.2	7	71.0	12	52.0
Dacia	51.9	9	56.4	8	53.3	9	48.7	15	43.4	18	52.8	14	45.8	9	39.3	9	72.2	10	51.5
Blueboy	48.7	12	50.9	17	49.7	14	52.1	8	43.8	17	57.6	11	38.3	18	40.5	6	69.3	18	50.1
Backa	53.3	6	45.9	19	37.4	23	47.8	17	49.3	7	51.8	18	49.7	3	33.5	20	71.4	11	48.9
Starke	37.8	25	44.1	22	56.6	7	58.2	2	44.1	16	58.2	8	37.2	20	28.4	27	73.3	8	48.7
Diplomat	44.4	18	51.7	15	48.7	15	50.4	12	41.6	19	65.2	3	40.5	14	26.6	29	67.9	21	48.6
Carifen 12	49.9	10	52.0	13	51.1	10	54.1	6	45.2	13	43.6	25	27.8	27	36.1	13	61.5	25	46.8
Moldova	44.8	17	51.4	16	46.7	18	44.4	21	36.8	24	45.0	19	41.1	13	36.8	12	70.3	15	46.3
Rousalka	39.1	23	52.0	14	45.3	20	46.7	18	48.5	8	41.3	24	36.7	21	41.0	4	65.3	23	46.2
Atlas 66	52.2	8	53.1	12	37.3	24	41.8	24	35.2	25	46.9	17	37.6	19	35.7	14	69.6	17	45.5
Hokuei	54.0	5	45.8	21	46.5	19	42.0	23	39.7	21	50.2	15	30.2	25	33.0	21	68.1	20	45.5
Marimp 3	40.9	22	36.6	26	27.1	27	50.6	10	48.4	9	47.4	22	48.7	4	35.0	17	67.9	22	44.7
Jyva	35.8	27	43.5	24	46.8	17	37.5	26	38.7	22	57.9	6	38.9	17	28.5	26	70.8	13	44.3
Vakka	43.4	19	39.5	25	50.2	12	45.4	20	37.6	23	52.3	13	36.0	22	29.2	25	62.4	24	44.0
Lancota (NE701132)	45.3	16	55.9	9	42.8	21	39.8	25	32.1	27	47.3	20	30.4	24	32.9	22	61.3	26	43.1
Lilifen	41.5	21	30.6	27	27.7	26	52.8	7	44.2	15	41.4	27	34.4	23	36.8	11	70.3	14	42.2
Tam 102	43.1	20	46.0	18	50.1	13	36.6	27	35.2	26	39.0	23	25.4	28	34.7	19	54.5	28	40.5
Strampelli	38.3	24	26.9	28	23.9	28	49.1	14	51.6	3	28.4	28	39.1	16	35.4	15	70.2	16	40.3
C.I.15074	36.1	26	45.8	20	38.1	22	31.2	29	25.9	28	44.3	21	29.4	26	35.3	16	59.2	27	38.4
Victor I	31.2	29	21.8	29	17.4	29	46.1	19	48.3	10	32.7	29	48.1	5	29.9	24	68.8	19	38.3
Kirac 66	34.0	28	43.9	23	32.4	25	35.8	28	25.9	29	38.1	26	22.6	29	27.9	28	46.3	29	34.1
Mean	46.3		49.4		46.4		48.0		43.4		52.5		39.9		35.6		69.7		47.8

a) Based on 3 reps only.
b) L.S.D. (.05) of a cultivar mean over locations is 7.0.

Table 62. Two-year mean Protein values (%) for winter cultivars grown in the International Winter Wheat Performance Nurseries at nine locations in the Northern European region, together with regional means, 1972-1973.

Cultivar	Vienna, Austria	Male Ripnany, Czechoslovakia	Sedlec, Czechoslogakia	Cambridge England	Wageningen, Netherlands	Svalof, Sweden	Zurich, Switzerland	Monsheim, West Germany	Weihenstephan, West Germany	Cultivar mean over 9 locations[a]
Atlas 66	17.8	17.7	19.2	16.5	14.6	15.1	16.7	15.9	15.2	16.5
Lancota (NE701132)	17.2	16.4	18.1	17.2	13.9	15.3	16.1	17.0	14.9	16.2
C.I.15074	17.4	16.7	18.1	15.1	14.0	16.0	15.9	16.4	15.7	16.1
Moldova	16.5	15.4	16.7	15.5	13.2	15.0	15.9	14.2	13.7	15.1
Kirac 66	15.4	15.4	16.0	14.3	13.6	14.3	15.6	15.1	14.3	14.9
Backz	14.6	15.1	16.6	14.9	13.1	14.2	15.9	14.7	14.3	14.8
Dacia	15.7	15.1	16.9	15.3	12.4	15.0	15.4	14.1	13.6	14.8
Rousalka	15.9	14.9	15.0	14.4	12.6	15.1	15.0	13.6	13.9	14.5
Lilifen	15.2	16.1	15.5	14.2	12.1	14.5	15.0	13.5	13.2	14.4
Marimp 3	13.5	14.7	16.4	14.4	12.5	14.4	15.5	13.7	14.1	14.4
Jyva	13.2	15.0	16.3	15.1	12.9	12.9	14.9	14.7	13.0	14.2
Probstdorfer Extrem	14.5	14.1	16.0	14.5	12.6	12.8	15.1	14.0	13.6	14.1
Vakka	13.0	14.8	15.5	14.9	12.7	12.8	15.6	13.8	14.0	14.1
Victor I	15.0	15.5	15.9	13.3	12.4	12.8	14.5	13.5	13.3	14.1
Centurk	15.3	14.5	15.0	13.9	12.1	12.3	14.6	14.9	12.9	13.9
Sava	15.0	14.3	14.7	13.8	12.0	13.3	14.5	14.2	12.7	13.8
Zenith	12.5	14.5	14.8	14.6	12.6	12.7	15.4	14.1	12.8	13.8
Bezostaya 1	14.6	14.4	15.4	14.0	11.9	12.4	14.8	12.9	13.1	13.7
Tam 102	14.0	14.9	13.7	12.8	11.8	14.1	14.2	13.4	12.6	13.5
Diplomat	13.0	14.2	14.1	14.4	12.5	12.5	13.8	13.9	12.5	13.4
Clarion	12.9	14.7	14.0	13.0	11.5	12.7	14.3	14.0	12.8	13.3
Starke	13.3	13.9	14.3	13.6	10.8	12.5	14.0	15.3	12.4	13.3
Carifen 12	12.8	14.0	13.5	12.4	11.3	13.6	14.2	12.8	13.3	13.1
Strampelli	13.0	14.1	14.6	13.0	10.9	1[illegible].3	13.5	12.4	12.1	13.1
Zlatna dolina	14.5	14.0	15.1	12.8	11.0	12.[illegible]	13.2	12.7	12.3	13.1
Hokuei	13.0	12.9	14.2	13.4	11.5	12.1	13.9	12.6	13.2	13.0
Maris Nimrod	12.9	13.0	13.7	12.2	11.4	12.1	13.5	13.1	11.8	12.6
Caribo	12.2	13.1	12.8	12.4	11.5	11.4	13.0	12.7	11.7	12.3
Blueboy	12.2	12.4	13.5	12.5	10.9	11.3	13.3	12.2	11.8	12.2
Mean	14.3	14.7	15.4	14.1	12.3	13.5	14.7	14.0	13.3	14.0

a) L.S.D. (.05) of a cultivar mean over locations is 1.1.

Table 63. Two-year means for Days to Flowering (days from January 1) of winter cultivars grown in the International Winter Wheat Performance Nurseries at nine locations in the Northern European region, together with regional means, 1972-1973.

Cultivar	Vienna,[a] Austria	Male Ripnany, Czechoslovakia	Sedlec, Czechoslovakia	Cambridge,[b] England	Wageningen, Netherlands	Svalof, Sweden	Zurich, Switzerland	Monsheim, West Germany	Weihenstephan, West Germany	Cultivar mean over 9 locations[c]
Rousalka	142.6	144.5	159.0	153.7	154.5	161.0	157.4	143.1	148.4	151.5
Moldova	144.7	147.0	161.4	156.0	155.6	164.5	159.3	145.0	151.6	153.9
Strampelli	147.7	148.9	161.0	155.7	155.9	165.4	158.8	144.0	151.6	154.3
Tam 102	144.7	148.5	160.6	157.7	158.8	164.5	162.0	145.3	154.4	155.1
Sava	145.9	148.5	161.5	158.7	157.1	164.9	160.9	146.0	153.8	155.1
Zlatna dolina	145.1	147.5	162.1	159.7	159.4	165.5	160.9	145.8	153.8	155.4
Backa	146.3	148.0	165.3	157.3	158.1	165.3	161.0	145.8	154.4	155.7
Victor I	150.1	150.1	164.9	157.3	159.0	166.6	161.4	146.8	155.5	156.5
Marimp 3	149.3	149.0	164.6	159.0	158.8	166.4	160.9	147.3	155.1	156.6
Dacia	147.6	150.0	164.3	162.3	158.9	165.0	161.4	148.3	154.6	156.7
Lancota (NE701132)	149.0	151.0	167.6	163.3	160.5	165.0	165.1	149.0	156.5	158.3
Bezostaya 1	149.3	149.1	164.3	161.7	161.3	168.8	164.8	149.5	159.9	158.6
C.I.15074	150.0	150.0	166.3	164.7	163.4	167.0	165.1	148.9	156.8	158.8
Centurk	149.6	150.5	165.8	162.3	162.3	167.3	166.9	149.0	159.6	159.2
Hokuei	150.9	151.5	166.0	163.7	162.4	168.5	167.4	148.8	157.4	159.4
Atlas 66	152.1	152.5	169.0	162.0	161.6	167.6	166.0	149.0	156.1	159.5
Blueboy	150.1	151.6	167.1	163.0	161.9	169.0	165.9	149.1	160.3	159.7
Probstdorfer Extrem	152.3	153.5	166.9	163.0	155.4	169.5	167.0	153.0	160.1	160.0
Kirac 66	151.4	152.0	167.3	163.3	163.5	169.5	166.1	149.4	160.8	160.3
Lilifen	154.3	152.5	174.3	163.0	163.3	168.6	167.1	150.0	159.1	161.3
Carifen 12	154.3	155.1	170.0	164.7	166.1	170.1	169.0	153.0	161.3	162.6
Maris Nimrod	157.6	158.0	171.4	168.0	167.5	172.9	170.6	156.6	162.8	164.9
Vakka	157.6	158.5	171.1	168.3	166.5	171.4	171.5	158.6	164.8	165.3
Zenith	158.0	158.0	172.6	170.7	168.8	171.4	171.8	158.6	163.8	165.7
Caribo	158.7	157.5	172.5	170.3	169.3	173.4	173.1	157.5	164.8	166.2
Jyva	158.3	159.0	173.0	170.7	168.6	172.3	172.9	158.3	166.5	166.4
Clarion	158.3	158.9	173.1	174.7	169.8	173.8	172.5	158.8	165.6	166.8
Diplomat	160.3	159.5	174.0	171.3	169.6	174.4	173.0	158.6	166.1	167.2
Starke	163.1	161.4	175.9	174.3	172.9	177.5	175.9	163.0	170.4	170.3
Mean	151.7	152.5	167.3	163.5	162.4	168.5	166.1	150.9	158.8	160.1

a) Based on 7 reps only.
b) Based on 3 reps only.
c) L.S.D. (.05) of a cultivar mean over locations is 1.9.

Table 64. Two-year means for Days to Ripening (days from January 1) of winter cultivars grown in the International Winter Wheat Performance Nurseries at nine locations in the Northern European region, together with regional means, 1972-1973.

Cultivar	Vienna,[b] Austria	Male Ripnany, Czechoslovakia	Sedlec,[a] Czechoslovakia	Cambridge,[c] England	Wageningen, Netherlands	Svalof, Sweden	Zurich,[b] Switzerland	Monsheim, West Germany	Weihenstephan,[a] West Germany	Cultivar mean over 9 locations[d]
Rousalka	187.3	180.4	204.3	206.0	203.5	208.5	171.0	191.8	219.0	197.4
Tam 102	186.3	182.5	203.3	204.5	205.4	208.5	193.0	191.5	221.0	199.5
Moldova	189.8	184.5	209.2	205.5	202.8	209.5	180.0	191.5	220.3	199.5
Dacia	191.5	186.5	208.5	207.5	205.3	208.9	185.0	192.4	221.0	200.8
Strampelli	191.8	188.0	210.0	209.0	204.5	211.0	185.0	191.3	220.3	201.2
Sava	191.0	190.0	206.0	202.0	209.3	209.8	184.0	192.4	220.3	201.4
Centurk	192.3	188.0	207.7	204.5	209.4	210.0	185.0	192.1	223.0	201.8
Zlatna dolina	189.3	186.0	210.0	205.5	208.9	210.5	187.0	194.4	220.3	201.8
Victor I	195.0	190.0	213.5	206.0	212.3	208.6	182.0	193.3	221.0	202.6
C.I.15074	193.0	187.0	212.5	209.0	209.0	210.3	192.0	191.8	223.0	202.9
Marimp 3	192.8	188.9	213.3	205.5	212.3	211.5	182.0	193.3	221.0	203.0
Carifen 12	194.3	186.1	211.3	207.0	211.5	213.1	190.0	195.9	223.7	204.0
Lancota (NE701132)	193.8	187.5	216.3	211.0	211.5	211.3	185.0	196.3	222.3	204.1
Backa	193.0	187.0	213.3	214.5	212.0	212.6	192.0	197.3	222.3	204.7
Blueboy	194.0	189.8	218.2	217.0	209.6	215.6	189.0	194.8	225.3	205.7
Kirac 66	194.5	190.0	218.0	216.0	212.5	211.4	185.0	198.6	224.6	205.7
Probstdorfer Extrem	193.0	191.5	212.0	210.0	208.9	214.9	196.0	198.8	226.7	205.9
Bezostaya 1	191.8	187.4	211.2	212.0	217.4	216.5	195.0	198.1	226.0	206.5
Vakka	194.0	192.5	211.8	218.5	213.6	215.4	187.0	199.4	226.7	206.7
Hokuei	196.3	190.4	217.7	216.0	212.5	216.5	195.0	198.0	226.0	207.4
Atlas 66	195.0	190.5	225.2	217.5	218.0	217.5	192.0	197.1	224.0	208.6
Zenith	196.0	193.0	214.3	218.0	219.5	218.1	187.0	201.9	226.0	208.7
Maris Nimrod	197.8	182.0	218.7	224.0	224.5	217.5	195.0	200.4	226.0	208.9
Caribo	197.0	193.0	214.7	218.5	217.0	219.5	190.0	202.8	226.7	209.1
Jyva	198.8	193.8	220.0	223.0	213.4	219.6	190.0	201.9	227.3	209.5
Lilifen	198.8	195.0	226.8	219.5	221.5	215.5	187.0	196.9	224.0	209.6
Clarion	196.8	195.5	218.0	222.5	222.4	216.9	197.0	203.4	226.7	210.2
Diplomat	199.0	196.0	223.5	224.5	229.4	219.5	193.0	202.9	227.3	213.0
Starke	198.8	197.0	225.7	232.0	229.3	223.5	190.0	204.3	229.7	214.5
Mean	193.9	169.3	214.3	213.3	213.4	213.9	188.0	196.7	223.8	205.3

a) Based on 6 reps only.
b) Based on 4 reps only.
c) Based on 2 reps only.
d) L.S.D. (.05) of a cultivar mean over locations is 3.9.

Table 65. Two-year means for Plant Height (cm) of winter cultivars grown in the International Winter Wheat Performance Nurseries at nine locations in the Northern European region, together with regional means, 1972-1973.

Cultivar	Vienna,[a] Austria	Kale Ripnany, Czechoslovakia	Sedlec, Czechoslovakia	Cambridge,[a] England	Wageningen, Netherlands	Svalof, Sweden	Zurich, Switzerland	Monsheim, West Germany	Weihenstephan, West Germany	Cultivar mean over 9 locations[b]
Victor I	77.6	68.8	64.1	89.7	90.9	81.6	85.6	60.8	80.0	77.3
Carifen 12	78.6	80.4	75.3	87.3	89.1	76.8	80.0	59.3	79.3	78.3
Rousalka	81.4	80.8	66.9	86.0	92.4	76.8	78.1	64.8	81.8	78.6
Zlatna dolina	80.7	74.8	70.0	88.1	94.3	81.9	84.4	62.5	81.8	79.7
Sava	85.7	83.6	73.0	89.3	94.9	81.5	85.6	62.8	82.5	81.9
Backa	83.6	82.6	66.9	93.6	100.6	78.1	90.6	66.4	85.1	82.9
Strampelli	83.6	81.8	74.9	104.7	106.8	78.9	96.9	68.5	92.1	87.4
Lilifen	88.6	84.1	75.6	96.9	103.9	87.4	98.8	66.0	88.4	87.6
Marimp 3	91.4	89.0	75.0	105.6	108.6	87.4	98.8	68.6	90.5	90.3
Tam 102	94.3	96.8	82.1	98.3	103.5	92.1	95.6	64.5	99.8	91.8
Bezostaya 1	94.3	97.4	89.5	106.0	107.8	97.1	103.1	69.0	103.1	96.3
Maris Nimrod	98.6	97.1	95.1	102.6	106.4	95.3	103.1	70.4	101.0	96.5
Clarion	98.6	93.5	97.4	106.0	116.1	97.9	106.3	69.4	102.6	98.5
Zenith	105.0	103.5	100.0	107.6	116.9	99.0	108.1	70.6	106.5	101.8
Hokuei	104.3	106.1	98.4	110.4	122.5	100.0	102.5	76.8	108.8	103.2
Moldova	106.4	109.0	97.3	113.6	116.0	101.1	111.3	77.4	110.3	104.5
Dacia	105.0	108.4	98.3	114.0	119.9	106.6	113.1	76.9	108.0	105.3
Blueboy	103.6	108.6	101.9	109.3	124.6	106.0	110.6	71.4	112.8	105.4
Caribo	103.6	103.5	105.9	113.4	121.5	107.1	113.1	72.3	110.5	105.6
Centurk	106.4	114.9	99.5	116.1	117.3	106.1	112.5	71.0	109.4	105.8
Diplomat	106.4	109.5	106.5	115.6	119.5	104.3	111.3	76.4	109.3	106.4
Lancota (NE701132)	112.9	116.1	108.2	117.1	120.4	104.0	120.0	73.4	110.3	109.0
C.I.15074	116.4	122.8	106.5	117.9	117.6	109.8	119.4	75.6	113.0	110.8
Kirac 66	112.9	121.1	112.1	123.3	130.8	105.9	122.5	78.0	123.8	114.4
Atlas 66	120.7	122.6	110.8	130.7	121.0	108.3	120.6	88.6	122.8	116.0
Starke	117.9	115.8	119.8	125.6	125.4	114.4	123.1	81.0	124.0	116.2
Vakka	119.3	111.1	116.5	128.6	135.9	114.0	120.0	80.6	125.0	116.6
Jyva	122.1	117.5	117.0	129.4	133.8	113.6	124.4	87.0	124.5	118.6
Probstdorfer Extrem	123.6	131.8	120.8	129.4	140.3	116.5	130.0	83.8	122.9	122.0
Mean	100.8	101.1	94.0	108.8	113.7	97.6	105.8	72.2	103.8	99.6

a) Based on 7 reps only.
b) L.S.D. (.05) of a cultivar mean over locations is 5.0.

Table 66. Two-year means for Lodging score (%) of winter cultivars grown in the International Winter Wheat Performance Nurseries at nine locations in the Northern European region, together with regional means, 1972-1973.

Cultivar	Vienna,[a] Austria	Male Ripnany, Czechoslovakia	Sedlec, Czechoslovakia	Cambridge, England	Wageningen, Netherlands	Svalof, Sweden	Zurich, Switzerland	Monsheim, West Germany	Weihenstephan, West Germany	Cultivar mean over[b] 9 locations
Lilifen	0.0	0.5	0.0	13.6	0.0	0.0	1.3	0.0	0.0	1.6
Carifen 12	0.0	0.5	1.3	12.1	0.0	0.0	10.0	0.0	5.0	3.1
Rousalka	10.0	0.4	1.3	11.4	0.0	1.3	5.0	0.0	5.6	3.7
Victor I	6.0	2.4	1.9	25.7	0.0	0.0	0.0	0.6	0.0	3.8
Zlatna dolina	8.1	0.0	3.8	12.9	0.0	1.5	8.1	0.6	5.6	4.4
Diplomat	1.7	0.0	13.1	28.3	0.0	0.0	1.3	0.0	0.0	4.6
Sava	26.9	0.0	5.6	12.9	0.0	0.0	5.6	0.0	1.3	5.4
Backa	12.3	11.1	3.1	12.9	8.1	2.5	4.4	0.0	0.0	5.9
Caribo	2.1	17.6	16.3	25.6	0.0	0.0	7.5	0.0	0.0	7.5
Marimp 3	26.9	20.0	1.9	14.1	0.0	1.9	8.8	5.6	1.3	8.6
Clarion	10.3	24.3	16.9	28.3	0.0	0.0	0.0	0.0	0.0	8.6
Zenith	13.7	29.4	25.0	21.3	0.0	0.6	9.4	0.0	0.0	10.9
Bezostaya 1	31.9	12.1	30.0	14.1	0.0	1.9	11.9	1.3	1.3	11.3
Blueboy	22.0	26.1	25.6	24.1	0.0	11.3	27.5	1.3	5.0	15.7
Starke	12.4	33.3	46.9	34.1	0.6	4.4	17.5	0.0	6.3	17.1
Tam 102	26.0	20.0	64.4	0.7	17.5	9.4	8.1	0.6	21.3	18.8
Maris Nimrod	34.7	25.0	48.8	54.7	0.0	0.0	18.1	1.3	0.0	19.6
Dacia	31.4	16.4	25.0	17.0	36.9	18.8	20.0	3.8	14.4	20.3
/ Strampelli	68.3	31.0	34.4	20.7	0.6	27.5	31.9	16.3	25.0	26.1
Moldova	36.0	17.3	53.1	26.3	45.0	33.1	23.8	3.1	20.0	28.6
Lancota (NE701132)	42.6	30.8	51.3	28.4	40.6	10.9	42.5	0.0	22.5	29.8
Jyva	35.7	50.9	55.0	31.3	26.3	10.6	38.8	5.0	21.3	30.4
Probstdorfer Extrem	43.4	36.1	33.1	36.4	6.9	41.3	62.5	7.5	20.0	31.7
C.I.15074	34.1	62.8	53.1	22.1	41.3	20.0	43.1	1.3	11.3	32.2
Atlas 66	46.0	35.9	49.4	51.3	67.5	28.8	65.0	1.3	37.5	42.3
Vakka	42.6	50.4	63.1	62.0	26.3	31.9	51.9	13.1	46.3	42.8
Centurk	36.3	51.3	70.6	63.4	42.5	25.6	61.9	2.5	50.0	44.8
Hokuei	56.7	55.0	63.8	79.0	15.0	51.3	62.5	28.1	60.6	52.0
Kirac 66	54.0	74.4	66.9	94.0	50.0	63.8	88.3	7.5	54.4	61.1
Mean	26.7	25.3	31.9	30.3	14.7	13.7	25.4	3.5	15.0	20.5

a) Based on 7 reps only.
b) L.S.D. (.05) of a cultivar mean over locations is 11.4.

Table 67. Two-year means for Winter Survival (%) of winter cultivars grown in the International Winter Wheat Performance Nurseries at seven locations in the Northern European region, together with regional means, 1972-1973.

Cultivar	Vienna,[b] Austria	Male Ripnany, Czechoslovakia	Sedlec, Czechoslovakia	Wageningen, Netherlands	Svalof,[a] Sweden	Monsheim,[a] West Germany	Weihenstephan, West Germany	Cultivar mean over 7 locations[c]
Probstdorfer Extrem	98.4	93.4	97.3	89.4	100.0	100.0	98.8	96.2
Starke	98.3	94.5	97.6	90.0	100.0	100.0	95.0	95.9
Diplomat	96.6	93.6	98.1	88.8	100.0	100.0	95.0	95.3
Bezostaya 1	97.3	95.3	98.0	88.1	100.0	100.0	92.5	95.2
Centurk	96.0	93.4	98.9	87.5	100.0	100.0	95.0	95.1
Maris Nimrod	97.4	92.4	96.5	91.9	100.0	100.0	91.3	94.9
C.I.15074	97.0	87.3	96.5	91.9	98.8	100.0	96.3	94.7
Tam 102	97.3	92.4	98.1	85.0	95.0	100.0	97.5	94.6
Caribo	94.9	86.3	95.0	91.9	100.0	100.0	92.5	93.4
Blueboy	96.3	94.1	88.1	91.3	96.3	100.0	91.9	93.2
Hokuei	95.6	88.8	97.9	85.0	95.0	100.0	93.8	93.0
Lancota (NE701132)	97.3	80.0	95.9	85.4	100.0	100.0	95.6	92.9
Vakka	95.4	82.4	97.4	86.3	100.0	100.0	95.6	92.8
Dacia	92.1	93.3	89.4	86.3	98.8	100.0	93.1	92.3
Jyva	93.7	88.6	89.3	88.1	100.0	100.0	92.5	92.0
Zenith	95.1	81.9	96.1	88.8	98.8	100.0	90.6	91.9
Clarion	97.3	80.3	86.9	90.0	100.0	100.0	95.0	91.4
Moldova	89.7	81.9	87.0	93.6	97.5	100.0	92.5	90.1
Carifen 12	93.6	83.3	76.5	91.9	92.5	100.0	90.0	88.5
Kirac 66	94.0	84.8	82.5	89.4	85.0	100.0	87.5	88.3
Sava	97.6	83.8	79.5	85.6	95.0	100.0	82.5	87.5
Rousalka	92.6	82.3	67.1	81.9	100.0	100.0	98.8	86.6
Zlatna dolina	94.1	82.8	67.4	89.4	93.8	100.0	86.3	86.0
Backa	87.7	76.5	48.9	86.9	78.8	100.0	81.3	78.2
Atlas 66	76.4	65.1	41.8	89.4	68.8	100.0	88.8	74.3
Marimp 3	50.0	40.3	25.8	83.1	62.5	100.0	78.8	60.1
Lilifen	38.6	16.6	16.0	80.0	57.5	100.0	72.5	50.7
Strampelli	37.9	12.4	27.5	75.6	37.5	90.0	75.6	49.0
Victor I	25.7	20.0	11.8	67.5	1.8	90.0	74.4	41.2
Mean	86.7	77.5	77.5	87.4	88.0	99.3	90.0	85.3

a) Based on 4 reps only.
b) Based on 7 reps only.
c) L.S.D. (.05) of a cultivar mean over locations is 12.3.

Table 68. Two-year means for Test Weight (kg/hl) of winter cultivars grown in the International Winter Wheat Performance Nurseries at eight locations in the Northern European region, together with regional means, 1972-1973.

Cultivar	Vienna, Austria	Male Ripnany, Czechoslovakia	Sedlec, Czechoslovakia	Cambridge, England	Wageningen, Netherlands	Svalof, Sweden	Zurich, Switzerland	Weihenstephan, West Germany	Cultivar mean over 8 locations[a]
Probstdorfer Extrem	81.5	72.6	81.8	81.3	82.3	81.6	80.1	81.0	80.2
Diplomat	76.0	69.6	81.9	82.6	80.2	80.2	81.0	81.1	79.2
Bezostaya 1	75.3	72.5	80.5	80.2	81.2	80.7	79.7	79.7	78.9
C.I.15074	77.0	74.6	79.3	78.7	80.6	78.9	78.2	80.8	78.6
Zenith	75.8	68.8	81.1	80.2	81.4	78.5	79.1	80.1	78.2
Lancota (NE701132)	74.5	73.1	80.3	79.1	79.9	78.8	77.8	79.8	78.1
Atlas 66	77.0	69.5	79.6	80.5	80.3	78.8	76.8	81.3	78.0
Centurk	77.0	74.6	79.9	76.0	78.4	79.2	78.2	78.0	77.7
Victor I	73.5	79.2	77.1	78.2	77.6	78.6	78.3	76.7	77.4
Dacia	76.5	71.3	78.7	79.6	79.0	76.7	79.3	77.3	77.3
Hokuei	77.8	71.7	78.3	78.3	77.1	78.9	74.5	78.8	76.8
Rousalka	71.5	71.4	79.1	79.3	79.8	76.2	77.6	77.2	76.8
Starke	66.0	66.0	80.7	81.9	79.0	79.5	75.8	79.9	76.7
Backa	75.3	67.9	77.5	77.7	80.2	77.5	76.8	78.0	76.4
Moldova	74.5	70.8	77.6	78.8	78.7	76.9	75.7	76.1	76.2
Zlatna dolina	72.8	70.8	77.3	77.6	78.2	76.6	78.5	77.0	76.2
Sava	72.3	69.7	78.2	77.8	76.9	76.6	77.7	77.8	76.1
Strampelli	73.8	70.3	78.4	80.1	76.7	70.8	76.1	78.4	75.6
Marimp 3	70.3	67.2	78.7	78.7	76.4	76.4	77.4	77.0	75.5
Caribo	68.5	66.9	76.6	78.3	78.2	76.9	77.6	77.2	75.4
Kirac 66	73.8	73.1	77.1	77.8	75.4	75.7	73.6	71.7	74.8
Jyva	67.3	63.1	77.6	77.2	77.9	77.0	76.0	78.0	74.7
Vakka	71.3	66.6	76.0	78.5	76.9	75.8	74.6	76.5	74.7
Clarion	70.8	66.1	77.1	77.9	76.8	75.6	74.1	75.8	74.4
Blueboy	71.3	68.0	75.2	77.2	75.0	75.6	73.6	75.6	74.1
Maris Nimrod	70.5	65.3	75.3	78.2	74.1	73.3	74.4	75.0	73.4
Lilifen	71.8	62.5	74.7	77.9	75.4	72.3	74.8	76.9	73.3
Tam 102	73.5	69.0	75.2	75.2	74.9	73.6	73.1	72.0	73.3
Carifen 12	62.5	60.3	66.9	72.0	70.3	65.1	64.4	67.0	66.2
Mean	73.1	67.0	77.9	78.5	77.9	76.6	76.4	77.3	76.0

a) L.S.D. (.05) of a cultivar mean over locations is 2.1.

Table 69. Two-year mean yields and ranks for winter cultivars grown in the International Winter Wheat Performance Nurseries at nine locations in the South-Southeastern European region, together with regional means, 1972-1973.

Cultivar	Tolbukhin, Bulgaria		Martonvasar, Hungary		Szeged, Hungary		Milano, Italy		Rieti, Italy		Fundulea, Romania		Krasnodar,[b] U.S.S.R.		Novi Sad, Yugoslavia		Zagreb, Yugoslavia		Cultivar mean over 9 locations[a]
	q/ha	rank	q/ha	rank	q/ha	rank	q/ha	rank	q/ha	rank	q/ha	rank	q/ha	rank	q/ha	rank	q/ha	rank	
Sava	65.4	1	70.1	3	70.4	1	40.6	8	43.0	10	43.8	5	43.8	3	57.3	2	52.1	2	54.0
Zlatna dolina	54.8	5	60.2	9	69.5	2	41.2	6	48.1	3	41.9	6	44.8	2	60.6	1	52.7	1	52.6
Rousalka	58.1	2	58.8	12	64.7	4	49.0	2	48.4	2	39.3	12	45.6	1	51.1	4	43.7	5	51.0
Probstdorfer Extrem	45.8	14	73.4	2	67.6	3	36.9	15	36.9	17	47.3	1	34.0	8	53.1	3	31.8	16	47.4
Dacia	49.5	9	63.5	6	61.3	7	43.3	3	45.6	7	44.6	3	36.0	7	38.3	16	38.7	9	46.8
Bezostaya 1	46.7	12	67.2	4	59.1	10	40.0	9	49.0	1	39.4	11	31.7	12	43.4	9	42.5	6	46.6
Backa	54.8	3	48.1	23	55.0	12	41.5	5	41.5	12	31.5	20	41.9	5	48.8	5	46.1	3	45.4
Centurk	49.0	10	75.7	1	54.4	15	32.7	21	42.3	11	46.5	2	29.9	13	40.0	13	38.5	10	45.4
Lancota (NE701132)	46.0	13	67.1	5	60.3	8	31.5	22	41.2	13	44.4	4	32.2	10	41.4	11	31.9	15	44.0
Moldova	50.0	8	54.4	17	54.9	13	36.7	16	43.1	9	41.1	8	33.9	9	38.6	14	40.2	8	43.7
Blueboy	40.7	18	59.4	10	62.7	5	50.3	1	39.9	14	40.0	9	32.0	11	38.3	15	29.6	22	43.6
Marimp 3	51.1	7	39.0	28	52.1	19	38.5	11	47.8	4	20.6	26	38.0	6	47.7	6	37.9	11	41.4
Maris Nimrod	38.9	19	58.3	13	61.7	6	41.9	4	35.8	18	38.7	13	25.1	17	35.5	17	37.2	12	41.4
Strampelli	53.4	6	41.5	27	43.3	24	40.9	7	46.0	6	15.4	29	42.2	4	43.6	8	41.3	7	40.8
Tam 102	47.3	11	59.2	11	50.2	22	35.8	17	37.7	16	39.7	10	26.5	15	31.1	22	32.7	14	40.0
Atlas 66	44.6	15	55.9	16	53.2	17	28.4	27	38.9	15	31.5	19	26.1	16	44.8	7	30.9	20	39.4
Lilifen	44.3	16	41.7	26	56.9	11	35.0	19	46.3	5	23.6	25	22.4	23	34.2	18	36.2	13	38.1
Carifen 12	35.9	22	57.9	14	54.7	14	38.0	12	32.0	23	24.5	24	23.4	20	40.6	12	31.6	17	37.6
Victor I	54.8	4	37.0	29	40.5	29	37.3	14	43.3	8	19.0	27	16.6	27	43.1	10	46.0	4	37.5
Hokuei	36.5	21	60.6	8	53.3	16	34.9	20	34.0	19	37.3	14	18.7	25	30.8	23	30.5	21	37.4
Zenith	42.6	17	57.2	15	50.2	23	37.8	13	26.3	26	31.3	21	28.1	14	32.4	20	29.6	23	37.3
Clarion	35.5	24	51.8	19	60.1	9	35.0	18	32.1	21	35.8	15	24.2	18	29.1	26	27.4	24	36.8
Caribo	37.5	20	52.7	18	52.4	18	40.0	10	28.3	24	30.7	22	23.9	19	34.1	19	31.0	19	36.7
C.I.15074	35.9	23	61.5	7	52.0	20	30.4	25	32.3	20	41.1	7	12.3	29	29.6	25	26.3	25	35.7
Diplomat	30.7	25	46.5	25	51.5	21	31.1	24	32.1	22	34.8	16	23.3	21	27.7	28	31.4	18	34.3
Kirac 66	29.7	26	48.2	22	42.6	27	24.0	29	26.7	25	34.4	17	20.6	24	30.4	24	24.8	26	31.2
Vakka	29.1	27	49.4	20	42.8	25	31.5	23	18.5	27	31.7	18	22.8	22	31.7	21	21.5	27	31.0
Jyva	23.5	28	48.5	21	42.7	26	30.3	26	13.1	29	25.3	23	17.2	26	28.1	27	18.9	28	27.5
Starke	20.1	29	46.6	24	40.7	28	27.9	28	15.9	28	17.7	28	14.7	28	24.4	29	17.7	29	25.1
Mean	43.2		55.6		54.5		36.6		36.8		34.2		28.7		39.0		34.5		40.3

a) L.S.D. (.05) of a cultivar mean over locations is 5.8.
b) Krasnodar, U.S.S.R. has been included in the South-Southeastern European region for purposes of the regional analysis.

Table 70. Two-year mean Protein values (%) for winter cultivars grown in the International Winter Wheat Performance Nurseries at nine locations in the South-Southeastern European region, together with regional means, 1972-1973.

Cultivar	Tolbukhin, Bulgaria	Martonvasar, Hungary	Szeged, Hungary	Milano, Italy	Rieti, Italy	Fundulea, Romania	Krasnodar, U.S.S.R.	Novi Sad, Yugoslavia	Zagreb, Yugoslavia	Cultivar mean over 9 locations[b]
Atlas 66	17.1	17.3	16.2	17.6	14.7	17.9	19.7	18.1	15.9	17.2
Lancota (NE701132)	17.0	16.1	15.0	16.0	12.7	15.7	18.3	16.4	13.9	15.7
C.I.15074	15.7	15.7	15.2	16.7	12.8	16.1	17.7	16.8	14.0	15.6
Moldova	16.4	15.2	15.4	15.8	13.0	15.9	18.3	16.6	14.2	15.6
Lilifen	15.8	16.1	14.8	15.1	12.4	16.4	17.6	16.3	13.9	15.4
Jyva	15.6	14.6	15.6	15.1	10.9	14.5	18.7	16.3	14.5	15.1
Starke	16.4[a]	14.4	13.8	15.7	11.8	15.4	18.0	15.3	15.3	15.1
Clarion	15.4	14.4	13.6	15.6	11.1	15.1	18.8	15.9	14.0	14.9
Dacia	15.5	14.9	14.1	14.0	11.5	15.6	17.8	16.3	13.3	14.8
Marimp 3	15.9[a]	15.8	14.8	14.7	12.0	15.7	16.8	15.1	12.5	14.8
Backa	15.5	15.7	14.9	15.2	11.2	14.6	17.0	15.4	13.2	14.7
Kirac 66	15.1	13.5	15.0	15.1	12.4	14.6	17.2	15.3	14.1	14.7
Zenith	15.4	14.0	13.7	15.2	11.1	14.5	18.3	16.7	13.5	14.7
Rousalka	15.1[a]	14.9	14.2	13.6	12.5	15.3	16.2	14.9	14.3	14.6
Vakka	15.3	14.4	14.2	15.5	10.9	14.5	17.4	15.8	13.7	14.6
Centurk	15.1	13.7	15.6	14.4	11.8	13.6	17.6	15.5	13.0	14.5
Diplomat	15.8	13.9	13.6	15.4	11.0	14.7	17.2	15.0	14.3	14.5
Probstdorfer Extrem	15.4	13.3	14.6	15.2	11.8	14.5	17.3	16.6	13.1	14.5
Victor I	14.4	15.4	13.2	14.8	11.4	15.5	16.0	15.3	13.5	14.4
Bezostaya 1	15.0	13.5	14.4	13.9	11.6	14.0	16.1	15.2	12.7	14.0
Caribo	15.2	13.3	13.1	14.3	10.2	14.5	18.0	15.1	12.3	14.0
Maris Nimrod	14.9	13.1	14.1	14.8	10.0	13.3	17.6	14.9	12.7	13.9
Sava	14.6	13.9	13.8	14.5	10.6	13.7	15.7	14.8	12.7	13.8
Strampelli	14.1	14.7	14.7	12.6	10.8	14.7	15.0	14.7	12.4	13.7
Carifen 12	15.2[a]	12.9	13.9	13.2	9.7	13.5	16.9	14.0	12.9	13.6
Tam 102	14.5	13.1	13.3	13.4	10.7	13.4	16.5	14.8	13.0	13.6
Hokuei	14.4	12.1	14.2	13.5	10.4	12.8	16.9	14.4	12.1	13.4
Zlatna dolina	14.5	13.2	13.9	13.0	11.5	13.5	14.9	13.8	12.4	13.4
Blueboy	14.2	12.1	13.4	12.0	9.2	12.2	15.0	13.9	11.5	12.6
Mean	15.3	14.3	14.4	14.7	11.4	14.7	17.2	15.5	13.4	14.5

a) Based on 7 reps only.
b) L.S.D. (.05) of a cultivar mean over locations is 0.9.

Table 71 Two-year means for Days to Flowering (days from January 1) of winter cultivars grown in the International Winter Wheat Performance Nurseries at nine locations in the South-Southeastern European region, together with regional means, 1972-1973.

Cultivar	Tolbukhin, Bulgaria	Martonvasar, Hungary	Szeged, Hungary	Milano, Italy	Rieti, Italy	Fundulea, Romania	Krasnodar,[b] U.S.S.R.	Novi Sad, Yugoslavia	Zagreb,[a] Yugoslavia	Cultivar mean over 9 locations[c]
Rousalka	136.5	157.8	136.8	132.1	135.3	138.0	132.2	138.5	143.5	139.0
Moldova	140.5	161.0	138.1	133.9	134.9	140.0	133.4	137.0	145.3	140.5
Strampelli	140.0	162.3	137.9	133.5	135.4	144.0	131.8	140.0	144.0	141.2
Zlatna dolina	143.0	162.1	139.9	135.3	138.6	141.0	135.4	139.5	146.5	142.4
Sava	143.0	162.4	137.6	136.9	138.6	140.5	137.6	139.5	147.0	142.5
Marimp 3	143.5	165.4	141.6	136.3	138.5	143.0	138.6	140.5	147.0	143.9
Tam 102	143.5	162.6	139.0	140.0	140.4	142.5	136.6	141.5	148.3	143.9
Victor I	143.5	165.4	142.0	135.8	138.3	145.0	136.4	141.0	147.8	144.0
Backa	158.5	164.5	137.5	135.8	137.5	142.5	136.0	140.0	146.3	144.5
Dacia	143.5	164.0	141.0	139.8	141.5	143.5	136.4	141.5	147.8	144.5
Bezostaya 1	146.5	164.1	140.1	140.5	141.8	143.0	138.2	139.8	149.5	144.8
Blueboy	147.0	166.1	141.0	141.4	142.5	144.5	139.4	144.0	151.0	146.4
Lancota (NE701132)	146.5	165.1	144.6	141.8	143.0	146.0	139.2	145.0	151.3	147.0
Hokuei	147.0	166.1	142.1	142.6	145.0	145.5	140.8	144.5	152.8	147.4
Centurk	161.0	166.0	142.5	140.9	140.4	143.5	138.0	143.0	150.5	147.5
C.I.15074	147.5	165.1	142.9	143.8	144.0	144.5	141.0	146.5	152.5	147.5
Atlas 66	147.5	167.8	143.3	142.6	143.8	148.0	139.2	145.0	151.5	147.8
Kirac 66	147.5	167.0	145.3	141.9	145.0	146.5	138.2	146.5	152.5	148.0
Probstdorfer Extrem	148.5	167.0	143.9	148.6	146.8	147.0	141.8	147.0	154.0	149.5
Lilifen	147.0	168.6	146.1	143.9	146.4	152.0	141.0	149.0	153.8	150.0
Carifen 12	152.0	168.5	146.1	149.6	148.5	151.5	144.4	150.0	154.5	151.8
Vakka	154.0	172.6	150.4	151.8	149.3	152.0	143.6	150.0	157.5	153.7
Maris Nimrod	153.5	172.0	148.1	150.5	150.8	152.5	147.2	153.5	157.3	154.0
Zenith	153.5	172.1	147.5	152.0	151.0	151.5	146.4	155.0	158.0	154.2
Caribo	156.0	172.9	149.3	152.0	151.0	152.0	146.8	156.0	158.0	155.1
Clarion	158.5	171.5	149.8	152.4	151.8	153.5	148.0	155.5	159.3	155.7
Jyva	155.0	175.3	156.9	152.3	149.3	153.0	147.8	155.0	158.5	156.1
Diplomat	159.0	175.4	149.3	153.0	152.6	154.0	151.0	155.0	159.8	156.6
Starke	161.5	177.8	152.4	156.9	157.0	157.5	147.8	158.0	164.3	159.4
Mean	149.1	167.2	143.9	143.4	144.1	146.8	140.5	146.1	152.1	148.2

a) Based on 4 reps only.
b) Based on 5 reps only.
c) L.S.D. (.05) of a cultivar mean over locations is 2.5.

Table 72. Two-year means for Days to Ripening (days from January 1) of winter cultivars grown in the International Winter Wheat Performance Nurseries at nine locations in the South-Southeastern European region, together with regional means, 1972-1973.

Cultivar	Tolbukhin,[a] Bulgaria	Martonvasar, Hungary	Szeged,[a] Hungary	Milano, Italy	Rieti, Italy	Fundulea, Romania	Krasnodar,[c] U.S.S.R.	Novi Sad, Yugoslavia	Zagreb, Yugoslavia[b]	Cultivar mean over[d] 9 locations
Moldova	179.0	201.0	164.8	183.1	180.9	171.0	165.2	180.0	163.0	179.9
Rousalka	180.0	200.1	163.0	184.4	181.9	174.0	165.6	180.5	179.0	180.5
Sava	178.0	199.8	164.3	183.6	182.8	175.5	167.4	180.5	183.0	180.9
Zlatna dolina	178.0	199.5	164.8	184.3	183.5	175.0	167.8	180.6	181.0	181.0
Tam 102	178.0	200.0	164.8	184.4	184.3	173.5	167.8	181.4	179.0	181.1
Victor I	180.0	203.6	172.5	184.4	183.1	180.0	169.2	168.5	183.0	181.4
Strampelli	179.0	202.8	167.8	183.3	181.5	179.5	166.4	180.5	183.0	181.9
Dacia	179.0	201.0	166.8	184.4	185.5	176.0	168.2	181.5	182.0	182.1
Backa	181.0	203.9	163.0	183.1	185.5	179.0	168.4	181.0	182.0	182.6
Centurk	178.0	203.8	167.8	185.3	188.5	174.5	168.6	182.0	186.0	183.0
Marimp 3	180.0	203.9	169.0	185.0	183.5	180.5	169.4	181.0	185.0	183.3
Bezostaya 1	181.0	203.3	166.3	185.0	187.8	179.5	170.6	181.0	184.0	183.6
Blueboy	182.0	203.1	166.3	186.1	188.3	179.0	170.2	182.5	183.0	184.1
C.I.15074	178.0	203.5	171.0	186.8	190.5	175.5	169.4	185.5	186.0	184.5
Hokuei	180.5	204.3	170.3	186.8	189.0	178.5	170.8	184.5	165.0	184.9
Lancota (NE701132)	180.0	207.1	173.0	186.6	189.5	176.5	171.4	184.0	188.0	185.3
Carifen 12	185.0	201.4	172.3	185.8	187.4	182.5	171.2	187.0	185.0	185.6
Atlas 66	180.0	207.1	171.5	188.9	189.8	180.5	169.8	185.0	187.0	186.1
Kirac 66	183.0	206.9	172.3	188.5	189.1	178.0	172.2	185.5	187.0	186.2
Probstdorfer Extrem	183.0	204.8	172.8	189.1	191.0	180.5	171.4	186.0	186.0	186.6
Vakka	185.0	205.1	176.0	188.1	192.3	184.0	174.2	188.0	189.0	188.2
Lilifen	185.0	210.5	177.5	188.0	191.5	183.0	169.0	187.5	192.0	188.7
Zenith	185.0	206.1	174.8	191.3	192.0	183.0	173.2	197.0	191.0	189.8
Caribo	189.0	209.6	177.0	190.9	192.3	182.5	175.0	191.1	192.0	190.0
Maris Nimrod	189.0	207.4	177.0	190.9	194.5	184.0	174.8	189.5	190.0	190.0
Jyva	181.0	208.5	178.8	191.1	190.3	185.0	176.4	196.0	190.0	190.3
Clarion	191.0	207.5	180.5	191.0	193.9	184.0	180.0	196.5	192.0	191.9
Diplomat	191.0	212.4	179.8	191.0	199.0	184.0	181.6	198.0	189.0	193.6
Starke	197.0	215.4	183.0	191.6	195.8	187.0	179.4	199.5	196.0	194.9
Mean	182.6	204.9	171.3	187.0	188.4	179.5	171.2	185.6	186.1	185.6

a) Based on 4 reps only.
b) Based on 1 rep only.
c) Based on 5 reps only.
d) L.S.D. (.05) of a cultivar mean over locations is 2.4.

Table 73. Two-year means for Plant Height (cm) of winter cultivars grown in the International Winter Wheat Performance Nurseries at nine locations in the South-Southeastern European region, together with regional means, 1972-1973.

Cultivar	Tolbukhin, Bulgaria	Martonvasar, Hungary	Szeged, Hungary	Milano, Italy	Rieti, Italy	Fundulea, Romania	Krasnodar,[a] U.S.S.R.	Novi Sad, Yugoslavia	Zagreb, Yugoslavia	Cultivar mean over 9 locations[b]
Carifen 12	83.8	73.3	81.9	83.6	86.0	71.5	75.9	83.9	76.6	79.6
Victor I	89.6	61.4	76.9	84.6	95.3	63.6	78.0	87.6	82.1	79.9
Zlatna dolina	87.9	71.8	81.3	79.3	81.4	69.3	84.9	88.3	79.8	80.3
Rousalka	84.3	70.6	81.9	82.4	89.3	73.8	85.3	87.1	83.4	81.9
Sava	93.5	75.6	85.0	85.9	94.6	76.1	91.1	90.3	85.5	86.3
Strampelli	94.1	68.1	91.3	91.5	97.0	68.8	92.1	93.8	87.1	87.0
Backa	94.3	72.5	85.0	90.3	100.1	72.4	95.4	93.3	87.0	87.7
Tam 102	97.0	82.4	95.0	93.3	100.9	83.5	97.1	95.3	91.3	92.8
Lilifen	101.5	72.0	96.9	99.8	104.5	76.9	90.7	102.0	92.3	93.0
Marimp 3	102.9	71.0	91.9	95.1	106.5	77.1	100.1	99.4	95.0	93.1
Clarion	98.3	86.1	98.1	102.0	109.1	92.3	95.7	102.4	88.0	96.9
Maris Nimrod	97.4	90.1	96.3	102.9	107.8	91.5	94.1	100.5	91.9	97.0
Bezostaya 1	99.8	82.9	97.5	97.3	113.1	90.9	104.0	102.0	99.3	98.4
Hokuei	102.3	89.1	102.5	101.8	107.9	92.8	97.4	102.1	95.5	99.1
Zenith	107.9	90.0	106.3	103.9	109.5	93.8	99.6	102.0	94.6	100.8
Diplomat	104.5	97.4	107.5	101.6	112.6	96.0	97.6	110.3	91.0	102.1
Centurk	107 0	92.9	106.3	103.3	116.6	96.6	106.3	100.8	99.8	103.2
Blueboy	110.8	94.0	105.0	106.1	117.4	95.0	105.6	106.3	101.5	104.6
Moldova	109.3	86.6	106.3	104.8	118.6	97.5	116.0	106.6	102.6	105.2
Caribo	108.8	95.3	107.5	105.5	116.1	101.6	104.1	107.0	101.3	105.3
Lancota (NE701132)	108.9	93.9	106.3	106.9	123.0	99.4	106.0	105.1	101.4	105.6
Jyva	109.9	96.9	106.9	109.6	120.5	99.0	105.0	112.8	100.3	106.8
Starke	111.1	102.0	114.4	110.9	118.6	101.8	94.7	114.0	96.4	107.3
Vakka	111.0	94.5	110.6	115.3	124.6	99.3	101.0	107.5	105.8	107.8
Dacia	111.3	92.4	105.6	112.5	120.3	99.5	115.6	107.6	107.4	107.9
C.I.15074	112.0	97.6	108.8	113.9	127.9	105.5	104.0	106.9	103.5	109.0
Kirac 66	116.5	99.3	110.0	116.9	129.8	109.3	110.3	107.9	103.4	111.5
Atlas 66	113.6	100.9	113.1	112.0	132.5	108.4	112.0	110.1	111.1	112.6
Probstdorfer Extrem	118.6	105.9	127.5	116.3	130.0	112.1	116.9	120.5	111.4	117.7
Mean	103.0	86.4	100.1	101.0	110.7	90.2	99.2	101.8	95.4	98.6

a) Based on 7 reps only.
b) L.S.D. (.05) of a cultivar mean over locations is 10.8.

Table 74. Two-year means for Lodging score (%) of winter cultivars grown in the International Winter Wheat Performance Nurseries at nine locations in the South-Southeastern European region, together with regional means, 1972-1973.

Cultivar	Tolbukhin, Bulgaria	Martonvasar,[b] Hungary	Szeged,[a] Hungary	Milano, Italy	Rieti,[a] Italy	Fundulea,[a] Romania	Krasnodar, U.S.S.R.	Novi Sad, Yugoslavia	Zagreb, Yugoslavia	Cultivar mean over 9 locations[f]
Lilifen	0.6	0.0	2.5	26.1	0.0	0.0	0.0	40.0	0.0	9.2
Carifen 12	0.0	0.0	0.0	18.8	0.0	0.0	8.8	47.3	0.6	10.2
Diplomat	0.0	0.0	2.5	44.8	0.0	0.0	7.5	26.3	0.0	10.8
Rousalka	5.0	0.0	22.5	17.5	0.0	0.0	0.0	52.1	0.0	11.6
Zlatna dolina	3.1	0.0	7.5	35.0	0.0	0.0	18.1	31.9	0.0	12.5
Victor I	0.0	0.0	17.5	42.4	0.0	0.0	0.0	46.0	0.0	13.2
Sava	0.6	0.0	30.0	48.5	0.0	0.0	18.8	45.5	0.0	17.4
Starke	6.3	0.0	25.0	51.0	0.0	7.5	8.8	48.8	0.0	17.8
Backa	1.3	0.0	10.0	60.1	0.0	0.0	23.1	44.9	0.0	18.2
Clarion	26.9	0.0	5.0	49.6	0.0	0.0	22.5	72.4	0.0	23.6
Zenith	5.6	9.3	10.0	54.5	0.0	0.0	24.4	87.1	5.6	25.8
Marimp 3	38.6	2.9	77.0	62.0	0.0	0.0	23.1	42.5	1.9	28.4
Caribo	46.1	23.6	17.5	62.8	18.8	0.0	20.6	68.4	9.4	33.4
Tam 102	16.9	7.1	20.0	50.9	0.0	0.0[d]	69.4	78.3	18.8	33.9
Blueboy	34.9	25.7	7.5	82.0	12.5	0.0	23.8	57.3	38.8	36.5
Bezostaya 1	57.9	21.3	64.5	62.3	0.0	0.0	31.3	66.0	3.1	38.2
Jyva	71.5	14.3	50.0	62.5	0.0	0.0	26.3	65.9	31.3	40.0
Maris Nimrod	78.3	24.9	17.5	52.6	6.3	5.0	35.6	88.5	11.3	41.0
Vakka	56.8	20.7	57.3	93.1	18.8	5.0	24.4	88.4	42.9	49.4
Strampelli	74.0	37.1	79.5	73.3	18.8	0.0	33.1	68.3	35.6	49.6
Moldova	64.8	32.9	87.3	90.8	0.0	0.0	26.9	82.0	51.9	52.7
Dacia	60.5	46.3	59.8	64.0	31.3	0.0	63.8	82.0	58.8	56.3
C.I.15074	80.9	69.7	79.5	94.4	31.3	8.6[b]	36.1	90.9	77.8	65.0
Probstdorfer Extreme	80.8	73.3	55.0	88.3	37.5	12.5	70.6	74.9	74.4	68.5
Atlas 66	92.6	42.1	74.8	89.8	80.8	0.0	67.4	76.3	85.9	71.4
Hokuei	97.9	81.9	69.8	76.0	18.8	2.5	82.4	95.6	69.9	73.1
Centurk	84.5	68.1	89.5	89.5	80.8	10.0[c]	66.9	93.3	85.9	76.1
Lancota (NE701132)	80.8	88.0	86.8	96.8	43.8	25.8	63.1	89.5	88.6	76.1
Kirac 66	94.9	79.6	77.0	99.0	87.0	57.1[e]	80.5	92.0	83.3	83.6
Mean	43.9	26.5	41.5	63.4	16.8	4.6	33.7	67.0	30.2	39.6

a) Based on 4 reps only.
b) Based on 7 reps only.
c) Based on 5 reps only.
d) Based on 6 reps only.
e) Based on 8 reps only.
f) L.S.D. (.05) of a cultivar mean over locations is 18.4.

Table 75. Two-year means for Test Weight (kg/hl) of winter cultivars grown in the International Winter Wheat Performance Nurseries at nine locations in the South-Southeastern European region, together with regional means, 1972-1973.

Cultivar	Tolbukhin, Bulgaria	Martonvasar,[d] Hungary	Szeged, Hungary	Milano, Italy	Rieti, Italy	Fundulea, Romania	Krasnodar,[d] U.S.S.R.	Novi Sad, Yugoslavia	Zagreb,[b] Yugoslavia	Cultivar mean over 9 locations[g]
Bezostaya 1	78.5	79.1	81.1	76.5	81.1	81.8	75.6	80.0	62.4	79.1
Probstdorfer Extrem	76.2	78.4	82.2	76.5	78.5	81.8	75.2	79.6	55.0	78.3
C.I.15074	77.4	79.4	80.6	76.4	79.4	77.7	72.9[f]	79.4	66.9	78.1
Lancota (NE701132)	77.4	77.7	80.3	74.9	80.2	80.5	76.2	77.7	66.0	78.0
Rousalka	78.5	76.1	78.7	74.7	79.3	79.7	77.0	77.3	67.9	77.6
Centurk	76.6	78.3	79.1	73.8	78.0	80.9	76.1	78.7	66.4	77.5
Dacia	76.6	76.1	79.0	75.3	78.0	79.7	76.0	78.4	64.1	77.2
Atlas 66	77.1	76.3	78.9	75.5	78.5	78.6	73.7	75.9	65.7	76.8
Marimp 3	77.8	82.0[c]	77.4	72.7	77.8	80.8[a]	74.0	76.7	63.8	76.5
Moldova	76.7	74.5	78.0	72.6	78.8	79.4	76.8	76.0	66.4	76.5
Zlatna dolina	77.7	74.3	77.7	72.4	76.8	78.3	76.2	77.1	69.3	76.3
Sava	77.7	75.8	77.5	71.2	75.0	79.7	77.1	76.4	64.4	76.2
Diplomat	75.6	68.4	69.4	73.4	75.1	77.0	75.4	79.9	70.4	75.7
Strampelli	75.7	82.1[c]	74.8	72.8	77.7	80.8[a]	76.3	73.2	68.0	75.6
Backa	78.2	71.5	78.6	74.0	78.0	77.4	77.1	78.1	37.0[c]	75.5
Kirac 66	73.0	73.5	78.5	73.3	77.2	80.2	72.3[a]	75.6	59.8	75.5
Victor I	77.9	81.0[c]	74.0	70.8	77.4	80.7[a]	68.1[c]	73.9	66.2	75.1
Lilifen	74.9	78.4[c]	75.9	70.1	77.4	75.6	71.1[e]	76.7	62.6	74.6
Hokuei	73.1	74.1	75.1	71.9	73.0	78.5	68.2	74.8	55.0	73.4
Zenith	74.4	68.3	78.1	70.6	69.0	74.3	70.1[c]	76.9	55.7	72.8
Tam 102	72.3	71.9	75.8	68.8	74.4	77.4	70.6[e]	70.8	54.4	72.6
Blueboy	71.4	67.2	75.4	70.6	71.2	75.9	70.3	73.3	46.3	71.7
Caribo	70.2	63.4	76.6	79.7	68.0	70.3	67.8[e]	75.2	51.1	70.1
Jyva	68.3	62.8	74.3	70.8	66.5	71.2	67.7[a]	73.1	44.0	69.2
Vakka	69.3	62.3	74.2	67.9	67.1	72.2	68.4	73.2	39.7	69.1
Clarion	71.5	61.5	74.2	66.0	67.4	69.4	70.4	71.5	46.5	68.8
Starke	65.2	65.4	76.2	70.1	65.5	68.3	70.1[c]	71.7	40.2	68.6
Maris Nimrod	64.8	61.1	72.8	65.3	69.0	70.4	65.3	69.4	52.2	67.3
Carifen 12	61.6	57.6	66.7	63.4	66.2	63.6	59.8	65.4	46.8	63.1
Mean	74.0	72.4	76.9	71.8	74.6	76.6	72.3	75.4	57.7	74.1

a) Based on 4 reps only.
b) Based on 1 rep only.
c) Based on 2 reps only.
d) Based on 6 reps only.
e) Based on 5 reps only.
f) Based on 3 reps only.
g) L.S.D. (.05) of a cultivar mean over locations is 2.4.

Table 76. Two-year mean yields and ranks for winter cultivars grown in the International Winter Wheat Performance Nurseries at seven locations in the United States, together with regional means, 1972-1973.

Cultivar	Fort Collins, Colorado U.S.A.		Lincoln, Nebraska U.S.A.		Ithaca, New York U.S.A.		Rowan County, North Carolina U.S.A.		Stillwater, Oklahoma U.S.A.		Corvallis, Oregon U.S.A.		Pullman, Washington U.S.A.		Cultivar mean over 7 locations[a]
	q/ha	rank	q/ha	rank	q/ha	rank	q/ha	rank	q/ha	rank	q/ha	rank	q/ha	rank	
Blueboy	67.1	7	22.0	9	39.4	1	22.8	8	39.3	2	37.3	8	51.1	4	39.9
Probstdorfer Extrem	67.3	6	28.5	5	36.1	5	21.3	11	35.4	6	37.2	9	47.8	7	39.1
Bezostaya 1	67.3	6	28.5	5	36.1	5	21.3	11	35.4	6	37.2	9	47.8	7	39.1
Lancota (NE701132)	72.3	2	43.4	1	23.9	22	23.2	6	38.1	3	28.3	23	42.4	14	38.8
Centurk	64.6	11	42.1	2	24.0	21	30.5	2	36.2	5	35.8	11	37.0	19	38.6
Tam 102	72.0	3	27.2	6	23.8	24	30.0	3	36.5	4	28.1	25	49.3	5	38.1
Dacia	68.2	5	19.5	10	34.6	8	31.6	1	35.3	7	36.2	10	36.9	20	37.5
Caribo	63.8	13	8.4	16	38.4	3	21.9	9	25.5	20	43.3	1	53.7	3	36.4
Sava	73.4	1	4.3	21	35.2	6	22.9	7	35.2	8	30.9	20	43.6	12	35.1
C.I.15074	61.9	16	36.9	3	25.4	20	24.7	5	31.1	11	26.7	27	38.6	18	35.0
Rousalka	70.5	4	9.5	15	25.7	19	16.6	19	34.2	9	35.4	13	49.2	6	34.4
Clarion	66.3	10	6.7	18	28.5	15	17.0	18	28.0	15	34.1	14	58.7	1	34.2
Zenith	67.1	8	11.5	14	36.8	4	17.2	17	28.1	14	33.1	16	44.6	9	34.1
Maris Nimrod	62.5	15	4.8	20	35.0	7	21.2	12	19.5	25	40.4	3	54.0	2	33.9
Hokuei	54.9	24	24.7	7	27.9	17	21.4	10	33.2	10	30.6	21	42.8	13	33.6
Moldova	64.2	12	22.8	8	27.4	18	18.5	15	26.5	18	37.5	7	30.0	25	32.4
Zlatna dolina	67.0	9	7.4	17	31.1	10	19.2	13	30.8	12	28.2	24	41.7	16	32.2
Backa	60.3	20	0.0	27	38.5	2	9.9	24	30.3	13	35.7	12	36.7	21	30.2
Carifen 12	54.3	25	3.4	22	21.4	25	18.0	16	23.4	22	37.5	6	45.2	8	29.0
Kirac 66	56.4	23	12.2	13	18.4	27	15.6	20	25.8	19	31.4	19	40.8	17	28.7
Atlas 66	56.8	22	1.9	24	30.7	11	19.0	14	24.0	21	28.5	22	36.0	22	28.1
Diplomat	52.6	26	4.9	19	30.5	12	14.3	21	16.4	28	32.8	17	44.1	11	27.9
Marimp 3	61.2	19	0.0	28	28.2	16	2.7	28	27.8	17	33.5	15	32.5	24	26.6
Vakka	41.8	28	18.6	11	29.5	14	13.5	22	22.8	23	32.2	18	27.7	26	26.6
Jyva	41.0	29	16.0	12	30.2	13	11.0	23	18.1	26	26.5	28	34.7	23	25.3
Strampelli	61.8	17	0.0	29	19.6	26	4.6	26	27.9	16	39.8	4	21.4	27	25.0
Starke	41.9	27	2.7	23	23.9	23	8.4	25	12.2	29	27.9	26	44.4	10	23.1
Lilifen	63.5	14	0.3	26	11.3	29	4.1	27	18.0	27	38.4	5	18.1	29	22.0
Victor I	58.1	21	1.0	25	13.0	28	0.9	29	21.6	24	26.5	29	18.8	28	20.0
Mean	61.2		14.1		28.3		17.6		28.3		33.6		40.1		31.9

a) L.S.D. of a cultivar mean over locations is 9.5.

Table 77. Two-year means for Winter Survival (%) of winter cultivars grown in the International Winter Wheat Performance Nurseries at seven locations in the United States, together with regional means, 1972-1973.

Cultivar	Fort Collins,[b] Colorado U.S.A.	Lincoln, Nebraska U.S.A.	Ithaca, New York U.S.A.	Rowan County,[a] North Carolina U.S.A.	Stillwater,[a] Oklahoma U.S.A.	Corvallis,[b] Oregon U.S.A.	Pullman,[b] Washington U.S.A.	Cultivar mean over 7 locations[a]
C.I.15074	100.0	91.3	89.5	97.5	98.3	90.0	90.0	93.5
Centurk	100.0	80.6	90.8	95.8	98.3	100.0	88.8	92.3
Vakka	100.0	76.3	88.5	97.5	98.3	87.5	87.5	89.8
Lancota (NE701132)	100.0	75.6	88.8	97.5	98.3	76.8	88.8	88.9
Probstdorfer Extrem	100.0	57.5	88.3	98.3	98.3	100.0	91.3	87.8
Hokuei	100.0	51.0	92.0	96.7	98.3	95.0	91.3	86.5
Tam 102	100.0	41.8	89.5	96.7	98.3	100.0	93.8	84.9
Jyva	100.0	69.4	86.0	97.5	98.3	60.0	83.8	84.8
Bezostaya 1	100.0	43.8	92.5	93.3	98.3	92.5	92.5	84.5
Diplomat	100.0	31.4	89.3	91.7	98.3	100.0	90.0	81.6
Starke	100.0	32.3	88.0	93.3	98.3	100.0	86.3	81.4
Dacia	100.0	28.9	85.8	97.5	98.3	100.0	87.5	81.1
Blueboy	100.0	26.4	90.8	92.5	98.3	100.0	86.3	80.7
Moldova	90.0	30.3	86.8	91.7	98.3	100.0	85.0	79.4
Zenith	100.0	25.3	87.0	95.0	98.3	90.0	88.8	79.3
Caribo	100.0	27.9	89.0	80.8	98.3	100.0	87.5	79.0
Maris Nimrod	90.0	27.5	88.5	80.0	98.3	100.0	86.3	77.6
Clarion	100.0	22.6	86.8	80.0	98.3	100.0	88.8	77.5
Rousalka	100.0	20.1	88.3	83.3	98.3	98.8	80.0	76.8
Zlatna dolina	97.5	5.6	84.3	81.7	98.3	100.0	86.3	73.4
Carifen 12	97.5	4.6	85.5	80.0	98.3	100.0	87.5	73.3
Sava	82.5	3.4	88.3	72.5	98.3	70.0	75 0	66.7
Kirac 66	97.5	8.5	74.3	62.5	91.7	97.5	72.5	66.4
Atlas 66	82.5	0.6	77.3	50.0	91.7	92.5	31.3	57.5
Backa	75.0	0.0	85.5	22.5	96.7	75.0	72.5	57.2
Strampelli	70.0	0.0	56.0	20.3	78.3	100.0	11.3	45.3
Marimp 3	60.0	0.0	58.0	5.7	92.5	80.0	37.5	44.1
Lilifen	65.0	0.0	30.3	9.5	61.7	87.5	0.0	32.0
Victor I	55.0	0.0	25.5	1.2	59.2	82.3	0.0	27.9
Mean	91.8	30.4	81.1	74.6	94.3	92.3	74.1	73.5

a) Based on 6 reps only.
b) Based on 4 reps only.
c) LS.D. (.05) of a cultivar mean over locations is 14.6.

Table 78. Two-year mean yields for winter cultivars grown in the International Winter Wheat Performance Nurseries at six locations in the Near East, together with Near Eastern regional means, 1972-1973.

Cultivar	Kabul, Afghanistan		Hamadan, Iran		Karaj, Iran		Sulaimaniya, Iraq		Ankara, Turkey		Eskisehir,[a] Turkey		Cultivar mean over 6 locations[b]
	q/ha	rank	q/ha	rank	q/ha	rank	q/ha	rank	q/ha	rank	q/ha	rank	
Bezostaya 1	59.1	2	31.7	8	38.8	12	34.8	4	26.0	3	30.7	7	37.0
Centurk	50.1	10	30.9	11	49.2	1	31.9	7	21.7	12	32.4	3	36.1
Strampelli	64.8	1	27.0	23	46.1	2	35.9	3	16.9	21	23.7	28	36.0
Tam 102	52.5	9	32.9	6	46.1	3	31.2	9	18.9	17	30.0	11	35.4
Victor I	57.2	5	19.8	29	41.4	5	36.5	2	24.9	6	27.2	21	34.7
Dacia	54.7	8	28.1	20	39.4	10	31.4	8	23.5	8	27.9	15	34.3
Kirac 66	42.8	16	31.6	9	41.1	6	29.4	14	25.8	5	31.7	5	33.8
Blueboy	34.6	21	37.0	2	41.0	7	33.6	5	22.0	11	33.1	2	33.6
Lancota (NE701132)	48.8	12	29.3	18	42.2	4	27.0	18	24.7	7	27.5	17	33.4
Backa	47.4	14	27.1	24	36.5	17	36.8	1	21.4	14	29.4	12	33.2
Moldova	48.8	13	27.8	21	39.3	11	28.6	15	26.2	2	27.7	16	33.2
Zlatna dolina	58.3	3	23.4	27	38.2	13	30.7	12	21.6	13	26.1	24	33.2
Lilifen	57.1	6	27.7	22	40.4	9	29.7	13	16.1	24	26.7	22	33.1
Probstdorfer Extrem	46.0	15	30.8	13	36.2	19	26.0	20	27.4	1	30.9	6	32.9
Sava	48.9	11	30.9	12	40.8	8	30.8	11	16.2	23	29.1	13	32.9
Rousalka	56.6	7	21.9	28	37.3	14	30.8	10	21.1	15	27.2	20	32.6
Marimp 3	58.2	4	24.6	25	36.2	18	32.6	6	17.8	19	24.2	27	32.4
C.I.15074	41.6	17	29.6	17	36.6	16	24.6	24	26.0	4	26.2	23	30.9
Hchmei	32.3	23	38.6	1	34.3	20	27.1	17	22.1	10	30.5	8	30.8
Maris Nimrod	29.9	24	35.4	3	30.2	21	26.6	19	18.4	18	34.6	1	29.1
Caribo	38.2	20	33.0	4	27.8	24	25.9	21	17.0	20	29.0	14	28.5
Zenith	38.7	19	30.7	15	28.9	23	27.6	16	14.7	26	30.2	9	28.5
Atlas 66	39.3	18	23.5	26	36.6	15	22.1	26	22.3	9	26.0	25	28.3
Clarion	27.4	25	32.1	7	26.2	26	24.9	22	16.4	22	31.8	4	26.3
Diplomat	33.2	22	30.7	14	23.5	27	24.7	23	20.3	16	25.4	26	26.3
Carifen 12	26.4	26	33.0	5	28.9	22	23.4	25	16.0	25	30.1	10	26.2
Vakka	24.5	27	29.3	19	27.5	25	19.7	27	12.4	27	27.4	19	23.4
Jyva	20.8	28	29.8	16	20.7	29	16.6	28	11.1	29	23.6	29	20.4
Starke	15.1	29	31.6	10	21.8	28	12.7	29	11.9	28	27.4	18	19.9
Mean	43.2		29.6		35.6		28.1		20.0		28.5		30.9

a) Based on 7 reps only.
b) L.S.D. (.05) of a cultivar mean over six locations is 7.3.

Table 79. Two-year mean Protein values (%) for winter cultivars grown in the International Winter Wheat Performance Nurseries at six locations in the Near East, together with Near Eastern regional means, 1972-1973.

Cultivar	Kabul,[a] Afghanistan	Hamadan, Iran	Karaj,[c] Iran	Sulaimaniya, Iraq	Ankara, Turkey	Eskisehir,[b] Turkey	Cultivar mean over[d] 6 locations
Atlas 66	18.8	15.6	13.1	14.8	18.1	14.2	15.4
C.I.15074	16.5	14.7	11.5	13.2	15.8	13.6	13.9
Lancota (NE701132)	17.0	14.3	12.7	12.7	16.1	13.0	13.9
Diplomat	14.7	14.6	10.8	13.5	16.1	13.5	13.8
Dacia	16.7	14.4	10.8	12.7	16.4	12.8	13.6
Jyva	15.8	13.7	11.2	13.6	16.2	12.8	13.6
Marimp 3	15.9	14.9	11.3	11.8	16.5	12.9	13.6
Lilifen	16.0	13.0	11.6	12.7	17.0	12.7	13.5
Kirac 66	15.7	14.4	12.1	12.9	14.2	13.1	13.4
Moldova	16.8	13.7	11.0	12.5	15.5	12.8	13.3
Starke	14.2	13.5	10.5	14.0	15.3	13.0	13.3
Probstdorfer Extrem	15.9	13.7	11.5	12.8	14.8	12.4	13.2
Vakka	15.3	13.7	10.4	13.1	16.1	12.1	13.2
Backa	13.8	14.4	11.1	11.5	15.2	12.5	13.0
Rousalka	13.8	14.6	10.2	11.3	15.3	12.7	12.9
Zenith	14.4	12.7	10.3	12.7	15.7	12.5	12.9
Zlatna dolina	13.3	14.1	10.5	11.9	15.1	12.6	12.9
Victor I	14.9	13.7	11.1	11.1	14.7	12.2	12.7
Clarion	15.4	12.3	9.5	12.7	15.6	12.5	12.6
Centurk	14.9	12.9	11.2	10.9	13.5	11.6	12.2
Caribo	12.8	12.8	9.5	11.8	14.5	11.9	12.1
Bezostaya 1	14.9	12.6	10.5	11.4	13.7	11.2	12.0
Sava	13.7	12.6	9.6	10.7	15.2	11.6	12.0
Tam 102	14.2	12.6	9.9	10.7	14.6	11.8	12.0
Maris Nimrod	13.3	11.9	9.9	11.5	13.8	12.1	11.9
Carifen 12	13.3	11.9	8.6	11.0	14.6	11.6	11.6
Strampelli	13.4	12.6	9.2	9.5	15.3	10.8	11.6
Blueboy	12.8	12.4	9.6	10.3	13.3	11.2	11.5
Hokuei	11.6	12.0	10.3	10.2	13.5	10.6	11.4
Mean	14.8	13.5	10.7	12.1	15.2	12.4	12.9

a) Based on 2 reps only.
b) Based on 7 reps only.
c) Based on 4 reps only.
d) L.S.D. (.05) of a cultivar mean over six locations is 1.0.

Table 80. Two-year means for Days to Flowering (days from January 1) of winter cultivars grown in the International Winter Wheat Performance Nurseries at six locations in the Near East, together with Near Eastern regional means, 1972-1973.

Cultivar	Kabul, Afghanistan	Hamadan, Iran	Karaj, Iran	Sulaimaniya, Iraq	Ankara,[b] Turkey	Eskisehir,[a] Turkey	Cultivar mean over 6 locations[c]
Strampelli	136.5	138.9	121.5	121.0	151.[illegible]	145.7	134.1
Moldova	137.5	137.9	124.5	118.4	151.0	145.6	134.2
Rousalka	136.3	144.3	124.8	118.9	149.3	144.6	134.9
Victor I	138.9	141.8	127.3	119.3	154.0	146.4	136.2
Marimp 3	140.4	141.1	126.4	123.9	154.5	145.9	137.0
Zlatna dolina	141.0	139.9	129.1	122.8	152.5	148.6	137.5
Backa	141.8	142.5	126.6	124.8	154.0	146.1	137.8
Dacia	141.0	139.4	128.4	130.1	153.3	145.7	138.2
Tam 102	139.8	139.4	130.8	131.8	151.5	144.7	138.4
Sava	146.0	140.4	129.4	123.9	154.8	148.0	138.9
Kirac 66	143.9	143.4	129.4	128.4	153.8	147.7	139.7
Centurk	144.4	142.4	132.1	129.9	155.3	146.7	140.4
Lancota (NE701132)	145.0	141.1	132.4	129.6	156.8	147.0	140.5
Bezostaya 1	144.1	142.3	132.0	129.4	157.0	148.6	140.7
Blueboy	146.1	143.6	132.1	128.3	158.3	148.0	141.2
Atlas 66	146.4	142.5	130.6	129.9	158.5	149.3	141.3
C.I.15074	148.0	141.6	133.1	133.1	154.8	147.7	141.9
Lilifen	146.0	145.5	132.5	134.6	161.0	149.4	143.2
Hokuei	150.9	142.9	134.1	133.3	157.5	148.7	143.3
Probstdorfer Extrem	150.3	147.3	138.1	136.4	158.8	149.3	145.5
Carifen 12	151.3	147.3	137.9	140.8	160.8	150.7	146.9
Zenith	154.6	150.5	137.9	140.0	162.3	150.4	148.1
Caribo	155.5	151.5	137.4	139.0	165.0	154.0	149.0
Vakka	156.6	147.5	139.3	142.0	167.3	153.7	149.5
Maris Nimrod	156.3	15[illegible]	138.5	141.8	165.5	154.3	149.7
Jyva	158.6	1[illegible].9	139.9	142.0	165.8	154.4	150.6
Diplomat	160.6	151.6	139.5	141.5	166.0	155.0	151.0
Clarion	156.4	152.3	140.1	143.1	164.8	159.1	151.3
Starke	163.8	156.4	143.3	148.0	168.0	158.0	155.1
Mean	147.5	144.7	132.7	131.9	158.1	149.4	142.6

a) Based on 7 reps only.
b) Based on 4 reps only.
c) L.S.D. (.05) of a cultivar mean over six locations is 2.8.

Table 81. Two-year means for Days to Ripening (days from January 1) of winter cultivars grown in the International Winter Wheat Performance Nurseries at five locations in the Near East, together with Near Eastern regional means, 1972-1973.

Cultivar	Kabul, Afghanistan	Hamadan, Iran	Karaj, Iran	Sulaimaniya, Iraq	Eskisehir,[a] Turkey	Cultivar mean over 5 locations[b]
Rousalka	184.8	184.0	173.3	153.0	192.3	177.1
Moldova	183.9	184.6	173.9	153.5	192.3	177.3
Strampelli	182.3	184.5	174.5	153.1	194.0	177.3
Victor I	184.5	185.3	173.6	152.8	192.9	177.4
Marimp 3	183.3	184.9	176.3	155.5	192.3	178.1
Backa	184.9	185.4	175.1	153.9	193.4	178.2
Zlatna dolina	184.4	185.0	173.6	155.9	196.0	178.5
Dacia	185.0	184.8	174.9	160.1	.93.1	179.2
Centurk	185.1	184.9	176.0	159.9	194.3	179.7
Tam 102	184.6	184.8	176.0	162.3	192.4	179.7
Bezostaya 1	185.5	185.4	175.3	159.0	196.1	179.8
Sava	184.6	185.0	174.6	157.1	201.0	179.9
C.I.15074	185.9	185.0	176.4	162.6	193.4	180.3
Lancota (NE701132)	186.6	185.0	175.5	160.4	197.0	180.5
Atlas 66	185.5	185.5	177.1	159.9	199.6	181.1
Blueboy	185.5	187.8	177.5	159.5	197.0	181.1
Hokuei	187.1	186.0	178.8	165.1	196.3	182.3
Kirac 66	189.3	185.3	176.8	165.0	197.3	182.3
Probstdorfer Extrem	184.8	187.3	177.5	166.0	199.9	182.6
Carifen 12	187.4	185.8	178.5	167.8	197.3	183.0
Caribo	188.8	186.1	179.5	170.0	203.3	185.1
Lilifen	194.3	187.4	178.4	168.5	201.0	185.5
Vakka	191.6	188.5	179.0	170.1	200.9	185.6
Zenith	192.9	189.0	179.0	170.1	199.3	185.7
Jyva	190.9	188.9	180.4	170.5	202.4	186.2
Maris Nimrod	189.1	189.3	180.8	170.3	203.7	186.2
Diplomat	197.6	189.9	182.0	170.8	204.6	188.6
Clarion	196.5	190.0	182.8	171.4	206.7	189.0
Starke	197.0	190.6	186.3	173.4	207.9	190.6
Mean	187.7	186.4	177.4	162.7	197.9	182.0

a) Based on 7 reps only.
b) L.S.D. (.05) of a cultivar mean over five locations is 3.2.

Table 82. Two-year means for Plant Height (cm) of winter cultivars grown in the International Winter Wheat Performance Nurseries at six locations in the Near East, together with Near Eastern regional means, 1972-1973.

Cultivar	Kabul, Afghanistan	Hamadan, Iran	Karaj, Iran	Sulaimaniya, Iraq	Ankara,[a] Turkey	Eskisehir,[b] Turkey	Cultivar mean over 6 locations[c]
Zlatna dolina	81.3	60.6	84.4	78.8	60.0	63.0	73.5
Carifen 12	80.8	59.0	84.4	78.8	65.0	65.6	73.7
Victor I	90.6	56.1	87.1	91.9	60.0	62.1	77.5
Rousalka	82.9	63.8	86.3	86.9	70.0	73.4	78.6
Sava	92.6	61.3	91.3	91.3	55.0	69.1	80.8
Lilifen	93.0	59.5	98.8	96.9	70.0	69.3	83.5
Backa	94.1	65.6	96.9	98.8	60.0	71.0	85.0
Maris Nimrod	90.1	66.4	107.5	98.1	75.0	73.9	87.2
Clarion	103.6	63.9	101.3	95.6	75.0	72.6	87.5
Strampelli	97.4	68.3	99.4	100.0	65.0	77.4	88.2
Marimp 3	104.3	65.9	104.8	103.8	70.0	75.6	90.7
Zenith	102.0	66.6	107.5	99.4	80.0	79.6	91.0
Tam 102	96.9	72.4	106.9	105.0	70.0	78.9	91.8
Diplomat	102.9	71.0	106.9	101.3	85.0	76.7	92.0
Hokuei	103.8	74.9	106.3	109.4	85.0	81.1	95.2
Bezostaya 1	103.0	81.1	103.8	108.8	90.0	84.6	96.4
Caribo	104.4	73.0	114.4	111.9	85.0	78.7	96.6
Ojva	111.6	72.8	113.8	106.3	90.0	81.4	97.4
Centurk	108.0	73.6	116.3	112.5	80.0	84.7	98.9
Blueboy	109.8	77.5	113.1	112.5	85.0	88.9	100.3
Vakka	114.1	76.8	119.4	111.3	90.0	84.6	101.4
Starke	119.6	81.1	115.6	103.8	105.0	85.1	101.7
Dacia	117.5	76.4	113.8	120.0	80.0	91.6	103.6
Moldova	108.9	80.6	115.0	121.3	85.0	94.3	103.8
Lancota (NE701132)	117.9	77.6	116.1	120.6	95.0	88.9	104.8
C.I.15074	117.6	78.1	121.9	119.4	100.0	93.3	106.2
Probstdorfer Extrem	122.9	85.3	126.3	122.5	105.0	100.3	111.6
Kirac 66	123.0	82.0	123.1	135.0	105.0	101.4	113.0
Atlas 66	136.0	82.8	126.9	130.6	100.0	104.0	116.0
Mean	104.5	71.5	107.3	105.9	80.7	81.1	94.0

a) Based on 1 rep only.
b) Based on 7 reps only.
c) L.S.D. (.05) of a cultivar mean over six locations is 5.3.

Table 83. Two-year means for Lodging score (%) of winter cultivars grown in the International Winter Wheat Performance Nurseries at three locations in the Near East, together with Near Eastern regional means, 1972-1973.

Cultivar	Kabul, Afghanistan	Karaj,[a] Iran	Eskisehir,[b] Turkey	Cultivar mean over 3 locations[c]
Sava	0.0	0.0	0.3	0.1
Backa	0.0	0.0	0.4	0.2
Carifen 12	0.0	0.0	0.5	0.2
Lilifen	0.0	0.0	0.4	0.2
Marimp 3	0.0	0.0	0.4	0.2
Victor I	0.0	0.0	0.4	0.2
Zlatna dolina	0.0	0.0	0.6	0.2
Caribo	0.0	0.0	1.1	0.4
Diplomat	0.0	0.0	1.1	0.4
Bezostaya I	0.0	0.0	1.9	0.7
Zenith	1.3	0.0	0.4	0.7
C.I.15074	0.0	0.0	5.0	1.8
Jyva	6.3	0.0	0.4	2.8
Rousalka	6.3	0.0	0.4	2.8
Clarion	6.3	0.0	1.1	3.1
Dacia	4.4	0.0	3.4	3.1
Starke	3.8	0.0	4.0	3.1
Maris Nimrod	5.6	0.0	2.6	3.3
Tam 102	0.6	0.0	11.9	4.6
Probstdorfer Extrem	7.1	0.0	9.0	6.3
Vakka	16.3	0.0	1.9	7.5
Blueboy	12.5	0.0	6.9	7.8
Strampelli	7.5	0.0	17.6	9.6
Centurk	16.3	0.0	8.4	9.9
Moldova	13.8	20.0	5.4	12.0
Hokuei	15.0	10.0	10.6	12.3
Lancota (NE701132)	16.9	10.0	10.6	13.1
Atlas 66	17.5	30.0	6.6	16.1
Kirac 66	47.5	52.3	13.7	36.1
Mean	7.1	4.2	4.4	5.5

a) Based on 4 reps only.
b) Based on 7 reps only.
c) L.S.D. (.05) of a cultivar mean over three locations is 4.5.

Table 84. Two-year means and ranks for yield and mean protein values and test weights for winter cultivars grown in the International Winter Wheat Performance Nurseries at two locations in the Far East, together with Far Eastern regional means, 1972-1973.

Cultivar	Yield: Morioka, Japan q/ha	Yield: Morioka, Japan rank	Yield: Suwon, Korea q/ha	Yield: Suwon, Korea rank	Yield: Cultivar mean over 2 locations[a]	Protein: Morioka, Japan %	Protein: Suwon, Korea %	Protein: Cultivar mean over 2 locations[b]	Test Weight: Morioka, Japan kg/hl	Test Weight: Suwon, Korea kg/hl	Test Weight: Cultivar mean over 2 locations[c]
Sava	44.1	2	56.5	1	50.3	14.8	11.6	13.2	78.6	75.9	77.3
Zlatna dolina	37.0	9	53.7	2	45.4	15.5	12.2	13.9	78.1	75.4	76.7
Backa	36.7	10	51.3	5	44.0	18.1	13.2	15.7	77.1	77.0	77.0
Tam 102	44.9	1	41.8	15	43.4	14.8	13.2	14.0	78.7	71.4	75.0
Blueboy	37.1	7	48.2	12	42.7	15.3	10.6	13.0	74.8	70.4	72.6
Marimp 3	36.4	11	48.2	11	42.3	17.2	12.7	15.0	76.3	77.0	76.6
Rousalka	32.5	16	51.4	4	41.9	16.7	11.8	14.2	79.1	76.1	77.6
Bezostaya 1	28.8	22	52.9	3	40.8	16.5	13.3	14.9	77.5	78.4	77.9
Dacia	30.9	18	50.2	7	40.5	18.4	14.2	16.3	76.1	76.9	76.5
Victor I	31.2	17	48.6	8	39.9	16.6	14.0	15.3	75.5	76.5	76.0
Atlas 66	32.8	15	46.9	13	39.8	19.4	14.8	17.1	78.6	75.5	77.1
Moldova	28.6	23	50.4	6	39.5	17.7	13.3	15.5	77.6	77.9	77.7
Caribo	38.0	5	39.8	18	38.9	15.3	11.9	13.6	66.7	71.1	68.9
Probstdorfer Extrem	36.1	12	41.5	16	38.8	16.0	13.4	14.7	78.0	78.4	78.2
Clarion	40.8	3	35.6	24	38.2	17.8	13.2	15.5	66.8	67.7	67.3
Strampelli	30.4	19	45.6	14	38.0	14.6	11.7	13.2	79.0	76.3	77.6
Maris Nimrod	37.1	8	37.6	20	37.4	14.8	11.7	13.3	68.4	68.5	68.4
Hokuei	38.2	4	35.7	22	37.0	14.2	12.3	13.2	78.5	72.4	75.5
Centurk	29.2	21	44.6	9	36.9	16.8	13.4	15.1	77.4	77.1	77.2
Lancota (NE701132)	25.5	24	48.4	10	36.9	18.3	13.9	16.1	77.5	78.2	77.8
Vakka	34.4	14	36.8	21	35.6	15.1	13.6	14.3	73.3	66.3	69.8
Zenith	36.0	13	35.3	25	35.6	16.0	13.8	14.9	72.5	71.1	71.8
C.I.15074	29.5	20	39.9	17	34.7	18.3	14.4	16.4	79.1	79.0	79.0
Diplomat	37.7	6	30.2	27	34.0	16.2	13.2	14.7	73.8	73.3	73.5
Kirac 66	20.6	29	39.7	19	30.1	16.6	14.1	15.4	74.7	74.6	74.6
Lilifen	24.3	27	35.6	23	30.0	18.2	15.0	16.6	66.7	71.1	68.9
Carifen 12	25.2	26	31.7	26	28.4	15.4	12.9	14.1	61.2	59.2	60.2
Jyva	25.3	25	25.4	28	25.3	14.6	12.9	13.7	68.2	69.5	68.9
Starke	23.0	28	17.2	29	20.1	16.1	15.1	15.6	64.3	69.6	67.0
Mean	32.8		42.1		37.5	16.4	13.2	14.8	74.3	73.5	73.9

a) L.S.D. (.05) of a cultivar mean over two locations is 14.2.
b) L.S.D. (.05) of a cultivar mean over two locations is 2.6.
c) L.S.D. (.05) of a cultivar mean over two locations is 10.0.

Table 85. Two-year means for Days to Flowering and Days to Ripening (days from January 1); Plant Height (cm) and Winter Survival (%) for winter cultivars grown in the International Winter Wheat Performance Nurseries at two locations in the Far East, together with Far Eastern regional means, 1972-1973.

Cultivar	Days to flowering			Days to ripening			Plant height			Winter survival		
	Morioka, Japan	Suwon, Korea	Cultivar mean over 2 locations[a]	Morioka, Japan	Suwon, Korea	Cultivar mean over 2 locations[b]	Morioka, Japan	Suwon, Korea	Cultivar mean over 2 locations[c]	Morioka, Japan	Suwon, Korea	Cultivar mean over 2 locations[d]
Caribo	165.6	148.5	157.1	201.5	184.5	193.0	113.5	112.1	112.8	99.6	100.0	99.8
Diplomat	165.3	148.3	156.8	202.3	186.0	194.1	116.5	109.0	112.8	99.9	97.5	98.7
Strampelli	154.4	140.0	147.2	191.6	174.1	182.9	86.5	92.4	89.4	92.3	71.9	82.1
Victor I	154.0	139.3	146.6	193.0	175.9	184.4	78.4	82.3	80.3	84.8	65.0	74.9
Marimp 3	154.8	139.6	147.2	191.8	175.9	183.8	97.0	101.1	99.0	96.5	68.1	82.3
Clarion	166.9	148.9	157.9	203.8	185.0	194.4	102.5	102.0	102.3	99.0	85.0	92.0
Starke	168.5	151.9	160.4	204.8	186.8	195.8	125.0	116.4	121.2	99.9	93.8	96.8
Atlas 66	157.5	141.6	149.6	196.0	176.9	186.4	116.1	119.1	117.6	98.8	92.5	95.1
Blueboy	157.3	142.1	149.7	196.3	178.9	187.6	111.8	107.4	109.6	100.0	100.0	00.0
Centurk	157.8	142.1	149.9	195.5	176.8	186.1	100.1	110.8	105.4	98.5	95.0	96.8
C.I.15074	159.0	143.3	151.1	193.8	176.5	185.1	109.9	111.0	110.4	98.4	100.0	99.2
Tam 102	153.8	140.8	147.3	191.5	173.8	182.6	100.5	92.5	96.5	99.9	98.8	99.3
Lancota (NE701132)	157.4	141.1	149.3	197.5	175.0	186.3	103.4	108.9	106.1	99.3	100.0	99.6
Bezostaya 1	159.4	142.3	150.8	196.5	178.6	187.6	103.9	105.4	104.6	99.5	97.5	98.5
Probstdorfer Extrem	160.6	143.9	152.3	197.5	179.9	188.7	116.9	116.1	116.5	98.3	100.0	99.1
Jyva	164.5	146.5	155.5	200.5	183.6	192.1	118.8	116.3	117.5	99.5	90.0	94.8
Vakka	162.8	147.1	154.9	198.3	180.9	189.6	121.1	115.1	118.1	100.0	100.0	00.0
Hokuei	158.0	143.0	150.5	195.9	180.9	188.4	112.8	101.5	107.1	100.0	93.0	96.5
Backa	155.0	140.4	147.7	191.5	178.0	184.8	89.1	95.6	92.4	97.8	82.5	90.1
Sava	153.4	139.9	146.6	189.8	175.6	182.7	90.4	90.1	90.3	97.1	85.0	91.1
Zlatna dolina	155.6	139.4	147.5	191.1	176.5	183.8	79.5	84.0	81.8	98.5	95.0	96.8
Maris Nimrod	164.6	145.9	155.3	200.9	183.8	192.3	97.4	100.0	98.7	98.3	95.0	96.6
Dacia	157.0	138.5	147.8	195.4	174.5	184.9	108.0	111.4	109.7	99.3	100.0	99.6
Moldova	154.1	136.6	145.4	192.5	172.4	182.4	109.4	115.5	112.4	99.5	99.4	99.4
Zenith	161.9	147.8	154.8	198.9	184.1	191.5	106.8	107.0	106.9	100.0	97.5	98.8
Rousalka	151.0	137.3	144.1	191.6	173.8	182.7	82.9	83.3	83.1	98.6	100.0	99.3
Kirac 66	157.0	141.4	149.2	198.5	178.8	188.6	106.9	118.4	112.6	99.3	100.0	99.6
Lilifen	161.5	143.1	152.3	202.8	181.0	191.9	85.5	99.9	92.7	83.6	56.3	69.9
Carifen 12	163.9	145.8	154.6	197.9	181.4	189.6	74.5	78.4	76.4	95.8	93.1	94.4
Mean	159.1	143.0	151.0	196.5	179.0	187.7	102.0	103.6	102.9	97.7	91.4	94.5

a) L.S.D. (.05) of a cultivar mean over two locations is 8.5.
b) L.S.D. (.05) of a cultivar mean over two locations is 2.7.
c) L.S.D. (.05) of a cultivar mean over two locations is 10.2.
d) L.S.D. (.05) of a cultivar mean over two locations is 17.1.

Table 86. Three-year means for Yield of fourteen cultivars grown in the International Winter Wheat Performance Nurseries in 1971, 1972 and 1973. (Northern Hemisphere).

Cultivar	Vienna, Austria		Tolbukhin, Bulgaria		Martonvasar, Hungary		Karaj, Iran		Sulaimaniya, Iraq		Rieti, Italy		Morioka, Japan		Suwon, Korea	
	q/ha	rank	q/ha	rank	q/ha	rank	q/ha	rank	q/ha	rank	q/ha	rank	q/ha	rank	q/ha	rank
Sava	65.2	2	57.6	1	59.6	3	46.8	5	31.9	7	44.7	3	40.9	2	47.1	1
Centurk	41.4	12	43.6	5	67.8	1	49.7	3	32.7	5	39.7	7	29.4	11	42.5	5
Probstdorfer Extrem	63.6	3	40.6	8	62.6	2	37.7	11	26.9	9	39.0	8	34.9	7	38.5	8
Bezostaya 1	55.6	5	42.7	6	58.8	4	43.6	6	36.3	3	47.8	2	32.0	9	46.9	2
Blueboy	43.7	8	36.7	9	53.7	7	47.0	4	35.0	4	41.1	5	36.6	4	43.6	3
Tam 102	68.4	1	44.8	4	50.5	8	53.5	1	32.4	6	40.9	6	44.9	1	40.2	7
Backa	53.6	6	49.3	2	42.0	13	41.5	8	36.6	2	44.0	4	36.5	5	42.4	6
Hokuei	58.9	4	30.1	11	55.0	6	42.3	7	28.1	8	34.1	10	40.8	3	34.7	11
Atlas 66	40.7	13	41.3	7	50.1	9	38.3	10	22.7	11	34.8	9	34.1	8	42.8	4
C.I.15074	29.1	14	31.3	10	55.2	5	40.6	9	26.5	10	31.5	11	31.9	10	37.0	10
Strampelli	42.6	10	44.8	3	39.8	14	53.4	2	38.9	1	48.4	1	26.8	12	38.3	9
Vakka	43.5	9	27.7	12	44.8	10	30.8	12	20.4	12	19.1	12	35.1	6	32.4	12
Jyva	41.6	11	23.1	13	42.2	12	26.1	14	17.1	13	13.5	14	25.4	13	22.4	13
Starke	43.8	7	20.4	14	42.6	11	26.7	13	12.5	14	15.1	13	20.5	14	15.0	14
Mean	49.4		38.1		51.8		41.3		28.4		35.3		33.6		37.4	

Table 86. Three-year means for Yield of fourteen cultivars grown in the International Winter Wheat Performance Nurseries in 1971, 1972 and 1973. (Northern Hemisphere). Continued.

Cultivar	Wageningen, Netherlands		Fundulea, Romania		Svalof, Sweden		Zurich, Switzerland		Ankara, Turkey		Eskisehir, Turkey		Fort Collins, Colorado U.S.A.		Lincoln, Nebraska U.S.A.		Ithaca, New York U.S.A.	
	q/ha	rank	q/ha	rank	q/ha	rank	q/ha	rank	q/ha	rank	q/ha	rank	q/ha	rank	q/ha	rank	q/ha	rank
Sava	50.2	1	41.0	1	25.1	11	52.5	1	13.6	11	30.6	4	65.2	3	13.8	9	36.7	3
Centurk	37.5	10	39.5	3	45.2	4	41.4	9	18.6	5	31.8	2	65.0	4	41.4	1	25.7	13
Probstdorfer Extrem	44.3	4	40.8	2	43.7	5	47.9	3	21.7	2	35.4	1	63.6	5	31.5	5	37.1	2
Bezostaya 1	43.3	6	36.4	4	40.1	6	47.2	4	22.1	1	28.2	7	55.6	9	32.9	3	33.3	5
Blueboy	42.8	7	35.9	5	38.4	7	43.7	6	17.9	6	28.3	6	65.2	2	30.6	6	41.5	1
Tam 102	33.2	14	34.5	6	27.4	10	26.7	14	16.6	9	28.8	5	68.4	1	32.5	4	26.5	12
Backa	45.9	3	33.3	8	18.9	13	50.9	2	17.0	8	26.7	9	53.6	11	1.2	13	35.0	4
Hokuei	38.0	9	33.3	9	37.7	8	35.8	12	17.8	7	31.6	3	50.9	7	25.7	7	28.0	9
Atlas 66	34.7	13	27.9	10	20.8	12	40.7	10	19.1	4	25.7	11	55.3	10	7.8	11	28.5	8
C.I.15074	26.6	8	34.0	7	30.7	9	29.1	13	20.7	3	25.0	12	59.8	6	39.4	2	26.7	10
Strampelli	48.5	2	21.6	12	8.1	14	42.6	8	13.9	10	24.6	13	57.2	8	0.0	14	16.0	14
Vakka	36.6	11	25.3	11	47.1	3	39.6	11	10.5	12	26.2	10	43.5	13	19.4	8	30.3	7
Jyva	36.5	12	21.5	13	47.2	2	42.6	7	9.6	14	23.9	14	41.6	14	13.5	10	32.0	6
Starke	44.1	5	15.6	14	50.0	1	43.8	5	9.9	13	27.3	8	45.7	12	4.3	12	26.6	11
Mean	40.2		31.5		34.3		41.8		16.4		28.2		57.0		21.0		30.3	

Table 86. Three-year means for Yield of fourteen cultivars grown in the International Winter Wheat Performance Nurseries in 1971, 1972 and 1973. (Northern Hemisphere). Concluded.

Cultivar	Rowan County North Carolina U.S.A.		Stillwater, Oklahoma U.S.A.		Pullman, Washington U.S.A.		Monsheim, West Germany		Weihenstephan, West Germany		Novi Sad, Yugoslavia		Zagreb, Yugoslavia		Cultivar mean over a 24 locations
	q/ha	rank	q/ha	rank	q/ha	rank	q/ha	rank	q/ha	rank	q/ha	rank	q/ha	rank	q/ha
Sava	24.1	8	31.6	7	39.0	7	37.1	6	77.9	1	58.8	1	77.9	1	43.5
Centurk	31.0	2	35.2	3	37.6	10	42.6	2	72.9	3	44.0	8	43.6	10	42.7
Probstdorfer Extrem	24.4	7	33.3	5	46.7	3	42.9	1	71.5	4	56.5	2	71.5	2	42.5
Bezostaya 1	28.7	3	37.3	1	45.5	4	39.4	4	66.7	8	47.2	5	66.7	5	42.1
Bluebcy	26.4	4	37.3	2	51.6	1	39.8	3	64.9	10	44.4	7	35.8	11	41.2
Tam 102	32.7	1	33.9	4	47.7	2	35.3	7	51.2	14	38.5	10	51.2	8	38.4
Backa	13.8	12	25.4	10	40.9	6	33.2	10	68.8	5	51.5	3	68.8	3	38.0
Hokuei	25.1	6	32.9	6	43.4	5	34.5	8	62.4	12	38.5	9	62.4	7	37.3
Atlas 66	18.9	10	23.1	11	36.3	11	38.1	5	65.6	9	46.2	6	34.6	12	34.9
C.I.15074	25.5	5	30.2	8	38.6	9	34.2	9	53.6	13	33.8	12	29.6	13	34.7
Strampelli	7.2	14	25.7	9	28.9	14	31.5	12	67.6	6	48.5	4	46.3	9	34.2
Vakka	21.5	9	22.7	12	30.8	13	30.5	13	62.7	11	34.5	11	62.7	6	31.8
Jyva	16.4	11	16.0	13	31.7	12	29.9	14	67.2	7	32.3	13	67.2	4	28.9
Starke	11.6	13	13.1	14	38.8	8	32.6	11	73.4	2	27.0	14	23.0	14	28.4
Mean	22.0		28.4		39.8		35.8		66.2		43.0		53.0		37.0

a) L.S.D. (.05) of a cultivar mean over 24 locations is 4.6.

Table 87. Three-year means for Winter Survival (%) of 14 cultivars grown in the International Winter Wheat Performance Nurseries in 1971, 1972 and 1973. (Northern Hemisphere).

Cultivar	Vienna, Austria	Morioka, Japan	Suwon, Korea	Lincoln, Nebraska U.S.A.	Ithaca, New York U.S.A.	Weihenstephan, West Germany	Novi Sad, Yugoslavia	Cultivar mean over 7 locations[a]
C.I.15074	98.1	98.8	97.1	94.2	90.2	95.0	89.6	94.8
Centurk	97.5	98.8	93.8	86.7	90.8	92.5	87.9	92.5
Vakka	97.1	100.0	97.1	83.3	88.0	93.8	85.8	92.3
Probstdorfer Extrem	99.0	98.8	95.8	64.6	87.6	95.8	86.7	89.7
Jyva	95.0	99.7	90.0	77.5	85.8	91.3	86.7	89.6
Hokuei	97.2	100.0	92.8	65.7	92.4	92.1	85.8	89.3
Bezostaya 1	98.3	99.7	96.8	60.8	90.8	90.8	87.0	89.0
Tam 102	98.3	99.9	96.3	60.8	88.0	94.2	84.6	88.8
Starke	98.9	99.8	92.1	52.8	87.6	93.3	89.2	87.5
Blueboy	97.6	100.0	96.7	46.8	90.8	90.0	89.2	87.1
Sava	98.5	96.3	87.3	9.8	85.4	82.9	87.9	77.9
Atlas 66	85.0	97.5	89.6	1.9	64.0	87.1	87.1	73.2
Backa	90.8	97.8	79.6	0.3	74.4	80.8	87.5	72.8
Strampelli	45.9	94.3	70.4	0.0	45.3	75.4	77.9	59.7
Mean	92.7	98.7	91.1	50.4	82.9	89.6	86.6	84.6

a) L.S.D. (.05) of a cultivar mean over 7 locations is 13.4.

Table 88. Three-year means for Days to Flowering (days from January 1) of 14 cultivars grown in the International Winter Wheat Performance Nurseries in 1971, 1972 and 1973. (Northern Hemisphere).

Cultivar	Vienna, Austria	Tolbukhin, Bulgaria	Martonvasar, Hungary	Karaj, Iran	Sulaimaniya, Iraq	Rieti, Italy	Morioka Japan	Suwon, Korea
Strampelli	144.4	139.7	156.1	120.3	121.6	136.3	155.9	139.5
Sava	143.8	142.0	156.8	126.1	125.5	139.8	155.6	140.3
Tam 102	142.5	143.3	156.8	128.3	131.7	140.6	155.4	140.2
Backa	144.1	153.0	158.3	125.5	125.8	138.0	156.7	140.5
Bezostaya 1	146.8	146.3	158.7	129.6	129.3	141.8	159.9	143.3
Centurk	146.6	156.0	160.0	129.8	130.4	140.9	159.0	142.3
Blueboy	147.6	146.7	160.3	129.8	128.9	143.7	158.7	143.5
Atlas 66	148.9	147.0	162.4	127.9	130.3	144.5	159.6	143.5
C.I.15074	147.6	146.7	159.6	130.5	133.8	144.7	160.3	143.6
Hokuei	148.1	146.7	160.8	131.9	134.2	145.3	158.9	143.8
Probstdorfer Extrem	149.6	148.0	162.1	136.2	136.5	147.2	161.8	144.8
Vakka	154.8	153.3	167.8	136.5	142.9	151.5	163.7	147.9
Jyva	155.2	155.0	169.9	138.3	143.0	152.8	165.3	148.4
Stark	160.5	162.0	172.8	142.1	149.3	159.3	170.8	152.4
Mean	148.6	149.0	161.6	130.9	133.1	144.7	160.1	143.9

Table 88. Three-year means for Days to Flowering (days from January 1) of 14 cultivars grown in the International Winter Wheat Performance Nurseries in 1971, 1972 and 1973. (Northern Hemisphere). Concluded.

Cultivar	Wageningen, Netherlands	Fundulea, Romania	Zurich, Switzerland	Eskisehir, Turkey	Monsehim, West Germany	Weihenstephan, West Germany	Novi Sad, Yugoslavia	Cultivar mean over 15 locations[a]
Strampelli	152.0	142.3	152.8	145.0	141.5	147.3	139.0	142.2
Sava	153.6	141.0	154.5	145.7	142.7	150.2	139.3	143.8
Tam 102	155.3	142.3	154.8	144.8	142.2	150.6	141.0	144.7
Backa	154.4	142.3	154.6	144.6	142.2	150.8	139.7	144.7
Bezostaya 1	157.5	143.0	158.4	146.9	147.0	154.9	140.8	147.0
Centurk	158.4	143.3	159.9	146.1	146.9	154.8	142.0	147.8
Blueboy	158.6	145.0	159.2	148.7	146.7	155.2	144.0	147.8
Atlas 66	157.4	147.3	158.7	148.8	145.7	152.2	144.3	147.9
C.I.15074	159.3	145.0	158.2	147.8	146.0	153.7	145.0	148.1
Hokuei	158.4	145.3	159.7	148.5	146.7	153.3	143.7	148.3
Probstdorfer Extrem	154.3	147.0	160.0	150.0	149.5	156.0	146.0	149.9
Vakka	162.4	153.0	165.3	152.5	154.4	160.8	149.7	154.4
Jyva	163.6	153.7	166.8	153.5	154.8	163.0	153.0	155.8
Starke	168.3	158.7	170.7	159.8	162.3	166.6	157.0	160.8
Mean	158.1	146.4	159.5	148.8	147.8	155.0	144.6	148.8

a) L.S.D. (.05) of a cultivar mean over 15 locations is 1.4.

Table 89. Three-year means for Days to Ripening (days from January 1) of 14 cultivars grown in the International Winter Wheat Performance Nurseries in 1971, 1972 and 1973. (Northern Hemisphere).

Cultivar	Martonvasar, Hungary	Karaj, Iran	Sulaimaniya, Iraq	Rieti, Italy	Morioka, Japan	Suwon, Korea	Wageningen, Netherlands
Strampelli	197.7	171.5	153.8	185.3	192.9	174.7	193.8
Tam 102	195.3	172.6	161.3	186.2	191.9	174.8	192.8
Sava	195.9	171.8	157.0	186.2	191.0	176.7	196.3
Backa	199.5	172.2	154.8	188.0	193.0	178.2	199.5
Centurk	199.5	173.5	159.8	191.3	196.7	177.3	196.8
C.I.15074	199.3	173.4	162.2	192.7	194.6	178.0	196.0
Blueboy	199.9	173.4	159.3	191.2	197.8	179.6	197.8
Bezostaya 1	199.4	172.6	158.5	190.8	196.5	180.0	203.4
Atlas 66	203.0	173.4	159.8	192.2	196.6	178.9	202.3
Hokuei	200.9	176.3	164.8	193.0	197.9	181.5	199.9
Probstdorfer Extrem	200.9	175.2	165.8	193.0	198.9	181.5	197.1
Vakka	202.7	176.5	170.3	195.2	198.8	181.4	200.7
Jyva	206.0	177.1	170.4	193.8	201.3	185.7	201.0
Starke	211.3	183.2	175.3	199.5	206.1	187.2	211.9
Mean	200.8	174.5	162.4	191.3	196.7	179.7	199.2

Table 89. Three-year means for Days to Ripening (days from January 1) of 14 cultivars grown in the International Winter Wheat Performance Nurseries in 1971, 1972 and 1973. (Northern Hemisphere). Concluded.

Cultivar	Fundulea, Romania	Eskisehir, Turkey	Monsheim, West Germany	Weihenstephan, West Germany	Novi Sad, Yugoslavia	Cultivar mean over 12 locations[a]
Strampelli	178.3	192.7	191.5	215.4	179.0	185.1
Tam 102	174.3	192.1	191.7	215.8	180.6	185.3
Sava	175.7	197.2	192.3	216.6	179.7	185.8
Backa	178.7	192.5	195.5	219.4	180.3	187.1
Centurk	175.3	193.1	192.1	218.2	181.7	187.5
C.I.15074	177.3	192.1	191.8	220.6	184.3	188.0
Blueboy	179.3	196.7	194.4	222.0	182.3	189.0
Bezostaya 1	179.3	195.5	196.1	222.8	181.0	189.2
Atlas 66	180.3	198.1	195.4	220.4	185.3	190.0
Hokuei	179.0	195.6	196.1	222.8	183.7	190.5
Probstdorfer Extrem	181.0	198.5	197.1	222.8	185.7	191.0
Vakka	183.3	199.1	197.4	224.8	188.0	192.7
Jyva	186.0	198.8	199.1	225.2	194.0	194.4
Starke	188.3	204.5	202.3	227.0	198.2	199.2
Mean	179.7	196.2	195.2	221.0	184.6	189.6

a) L.S.D. (.05) of a cultivar mean over 12 locations is 1.6.

Table 90. Three-year means for Lodging (%) of 14 cultivars grown in the International Winter Wheat Performance Nurseries in 1971, 1972 and 1973. (Northern Hemisphere).

Cultivar	Tolbukhin, Bulgaria	Martonvasar, Hungary	Suwon, Korea	Wageningen, Netherlands	Zurich, Switzerland	Eskisehir, Turkey	Weihenstephan, West Germany	Novi Sad, Yugoslavia	Zagreb, Yugoslavia	Cultivar mean over 9 locations[a]
Sava	0.4	0.0	0.0	0.0	3.8	1.1	0.8	45.3	2.1	6.0
Starke	4.2	0.0	2.5	0.4	11.7	4.4	7.1	42.5	0.8	8.3
Backa	16.7	0.0	0.5	11.7	2.9	0.3	0.0	54.0	2.5	10.0
Tam 102	42.0	4.5	28.3	11.7	6.3	9.8	15.0	64.7	12.9	22.0
Blueboy	51.5	18.2	14.6	0.0	18.8	4.4	18.3	50.3	27.5	22.8
Bezostaya 1	67.3	13.5	12.5	0.0	10.0	2.1	13.3	76.3	12.9	23.4
Strampelli	80.8	23.6	15.8	0.4	22.1	16.6	18.8	76.9	25.0	31.3
Jyva	71.8	9.1	8.3	21.7	45.8	0.3	34.2	67.3	27.9	32.3
Vakka	58.7	13.2	3.3	21.3	52.1	1.2	49.6	82.3	36.1	35.8
Probstdorfer Extrem	82.1	48.4	26.7	5.0	47.9	10.3	33.8	81.4	55.0	43.7
C.I.15074	83.4	55.3	37.3	36.3	31.7	3.2	10.4	92.1	73.1	47.3
Centurk	87.1	50.6	42.8	39.6	51.3	14.4	39.6	95.2	76.0	55.6
Hokuei	96.0	53.9	74.1	10.0	45.4	6.7	64.6	96.0	63.3	57.2
Atlas 66	89.3	35.9	34.4	62.5	65.8	18.7	39.6	83.8	83.5	57.6
Mean	59.4	23.3	21.5	15.8	29.7	6.7	24.7	72.0	35.6	32.4

a) L.S.D. (.05) of a cultivar mean over 9 locations is 15.2.

Table 91. Three-year means for Test Weight (kg/hl) of 14 cultivars grown in the International Winter Wheat Performance Nurseries in 1971, 1972 and 1973. (Northern Hemisphere).

Cultivar	Rieti, Italy	Morioka, Japan	Suwon, Korea	Wageningen, Netherlands	Zurich, Switzerland	Eskisehir, Turkey	Weihenstephan, West Germany	Novi Sad, Yugoslavia	Cultivar mean over 8 locations[a]
Bezostaya 1	81.0	77.3	76.5	81.8	80.5	83.1	80.8	76.5	80.2
Probstdorfer Extrem	78.5	76.9	75.0	83.3	80.9	83.7	81.4	75.0	80.0
C.I.15074	79.7	78.3	76.0	81.6	78.2	78.8	80.3	75.9	79.2
Centurk	78.5	76.9	75.4	79.1	79.2	82.4	78.0	75.4	78.6
Atlas 66	77.4	77.7	73.5	81.1	78.0	80.7	80.5	73.5	78.2
Backa	77.9	75.8	72.7	80.5	77.5	81.7	77.9	72.7	77.8
Strampelli	78.8	77.8	72.0	77.2	77.9	81.2	78.0	72.0	77.2
Sava	76.7	77.0	71.6	78.0	78.6	80.0	77.7	71.6	77.1
Hokuei	72.6	77.7	70.9	77.8	76.6	82.4	78.8	70.9	76.6
Tam 102	75.7	78.0	68.8	75.7	74.0	81.3	72.2	68.8	74.8
Blueboy	71.4	72.8	67.2	76.0	73.7	79.3	75.3	67.2	73.7
Vakka	66.4	71.1	63.5	78.1	76.4	78.3	77.1	63.5	73.0
Starke	65.3	60.3	63.3	80.0	76.5	80.0	79.7	63.3	72.3
Jyva	66.0	66.4	63.9	78.8	75.6	78.2	77.6	63.8	72.2
Mean	74.7	74.6	70.7	79.2	77.4	80.8	78.2	70.7	76.5

a) L.S.D. (.05) of a cultivar mean over 8 locations is 2.6.

Table 92. Three-year means for Plant Height (cm) of 14 cultivars grown in the International Winter Wheat Performance Nurseries in 1971, 1972 and 1973. (Northern Hemisphere).

Cultivar	Tolbukhin, Bulgaria	Martonvasar, Hungary	Karaj, Iran	Sulaimaniya, Iraq	Rieti, Italy	Morioka, Japan	Suwon, Korea	Wageningen, Netherlands
Sava	92.6	72.6	96.7	88.3	87.8	88.3	83.5	94.1
Backa	93.8	69.0	100.8	94.2	95.9	88.4	86.8	98.8
Strampelli	93.6	68.3	103.8	99.6	92.6	85.7	86.8	104.7
Tam 102	96.9	78.2	111.3	101.7	96.4	99.0	88.1	101.9
Bezostaya 1	100.8	82.3	109.6	106.7	107.3	104.0	99.2	107.2
Hokuei	100.9	89.9	110.4	105.4	102.8	112.8	98.2	117.9
Centurk	105.9	93.0	119.6	112.5	110.5	101.4	106.3	116.9
Blueboy	109.3	92.8	116.3	110.8	112.1	113.3	102.5	120.1
C.I.15074	110.9	98.0	122.5	118.8	123.1	112.6	108.8	115.6
Jyva	107.8	93.8	119.2	102.9	115.9	121.1	112.3	129.9
Vakka	110.5	94.3	120.4	105.8	118.7	123.0	111.3	132.3
Starke	111.5	100.4	119.2	98.3	114.7	125.9	112.2	126.7
Atlas 66	111.7	103.3	132.1	127.9	124.1	116.6	115.7	121.4
Probstdorfer Extrem	115.8	107.8	128.3	117.1	122.2	116.8	112.3	137.7
Mean	104.4	88.8	115.0	106.4	108.9	107.8	101.7	116.1

Table 92. Three-year means for Plant Height (cm) of 14 cultivars grown in the International Winter Wheat Performance Nurseries in 1971, 1972 and 1973. (Northern Hemisphere). Concluded.

Cultivar	Fundulea, Romania	Zurich, Switzerland	Eskisehir, Turkey	Monsheim, West Germany	Weihenstephan, West Germany	Novi Sad, Yugoslavia	Zagreb, Yugoslavia	Cultivar Mean over 15 locations[a]
Sava	80.8	80.8	73.5	60.0	77.4	91.3	86.7	83.7
Backa	76.6	82.5	76.5	63.3	82.1	92.5	88.1	86.0
Strampelli	75.8	88.8	82.9	65.3	86.3	94.2	88.4	87.8
Tam 102	84.0	88.8	85.2	63.9	92.1	95.3	91.3	91.6
Bezostaya 1	92.3	98.3	90.6	65.5	99.3	101.4	101.1	97.7
Hokuei	93.5	96.7	89.8	76.3	106.0	101.3	97.6	100.0
Centurk	99.4	104.2	94.4	66.8	102.6	100.6	101.8	102.4
Blueboy	96.7	104.2	91.5	72.2	111.8	105.7	102.5	104.2
C.I.15074	108.7	112.1	102.1	73.3	107.7	107.0	106.3	108.5
Jyva	101.0	116.7	90.9	87.3	120.3	111.0	106.3	109.2
Vakka	101.2	112.9	95.2	80.5	119.7	107.6	109.4	109.6
Starke	106.2	117.5	95.3	87.4	120.6	114.2	102.8	110.3
Atlas 66	113.9	115.4	110.3	84.8	117.2	110.8	112.2	114.5
Probstdorfer Extrem	114.8	122.5	110.2	82.8	120.5	120.5	116.7	116.4
Mean	96.1	103.0	92.0	73.5	104.5	103.8	100.8	101.5

a) L.S.D. (.05) of a cultivar mean over 15 locations is 3.6.

Table 93. Winter Survival (%) data for cultivars grown in observation plots of the Fifth International Winter Wheat Performance Nursery at Lethbridge, Alberta, Canada, 1973[a].

Cultivar	Replication I	Replication II	Mean
Strampelli	0	0	0
Probstdorfer Extrem	100	100	100
Victor I	0	0	0
Carifen 12	90	20	55
Caribo	95	95	95
C.I.15074	100	100	100
Zlatna dolina	50	30	40
Hokuei	95	90	93
Atlas 66	10	10	10
Diplomat	100	100	100
Blueboy	100	80	90
Maris Nimrod	100	80	90
Marimp 3	10	10	10
Jyva	100	100	100
Sava	100	60	80
Lancota (NE701132)	100	100	100
Bezostaya 1	100	100	100
Lilifen	0	0	0
Vakka	100	100	100
Zenith	100	100	100
Clarion	100	100	100
Lerma Rojo 64	0	0	0
Centurk	100	100	100
Backa	15	10	13
Rousalka	90	100	95
Moldova	100	100	100
Tam 102	100	100	100
Dacia	100	100	100
Starke	100	100	100
Kirac 66	15	20	18
Mean	72.3	66.8	69.6

a) Rated by M. N. Grant - May 10, 1973.

Table 94. Results of the sprouting test and *Septoria nodorum* studies from the Fifth International Winter Wheat Performance Nursery grown at Zurich, Switzerland, 1973[d].

Cultivar	Sprouting test falling number value[a]	Grain yield per head		1000-kernel weight		Grain note[c]		Head note[c]	
		gm	%[b]	gm	%[b]	Inoculated	Control	Inoculated	Control
Strampelli	150	1.74	44.0	40.4	42.7	7.5	5.0	8.5	2.0
Probstdorfer Extrem	228	1.47	51.1	42.4	53.1	5.5	4.0	7.0	2.0
Victor I	186	1.40	51.9	37.5	62.6	7.0	4.5	8.0	2.0
Carifen 12	77	1.16	29.5	34.8	40.7	8.0	6.0	8.0	2.0
Caribo	308	1.92	38.7	43.4	49.9	7.0	4.5	6.0	1.0
C.I.15074	66	1.04	81.6	38.5	65.2	6.0	5.0	8.0	2.0
Zlatna dolina	133	1.26	68.8	36.4	59.8	7.0	4.5	8.5	3.0
Hokuei	131	1.27	39.5	44.0	38.7	7.5	4.5	7.5	2.0
Atlas 66	256	1.19	94.0	41.7	69.8	6.0	4.0	5.5	2.0
Diplomat	297	1.49	51.5	43.6	46.5	6.5	3.0	6.0	1.0
Blueboy	161	1.54	58.4	45.7	46.0	6.5	3.5	6.5	1.5
Maris Nimrod	193	1.81	37.2	39.3	44.5	7.5	5.5	6.0	1.5
Marimp 3	62	1.36	57.2	35.8	50.9	7.0	4.5	7.0	1.5
Jyva	269	1.53	35.7	32.3	52.8	7.0	4.5	5.0	2.0
Sava	67	1.28	52.1	34.5	49.4	7.5	5.0	8.0	2.5
Lancota (NE701132)	165	1.18	56.8	41.4	51.0	6.5	5.0	8.0	2.0
Bezostaya 1	229	1.34	68.5	46.8	56.8	6.5	4.0	7.5	2.0
Lilifen	270	1.28	35.0	37.8	42.0	8.0	5.5	8.0	2.5
Vakka	151	1.48	72.9	25.6	60.7	6.0	5.0	7.5	3.0
Zenith	337	1.36	39.7	32.4	46.2	7.5	5.0	5.5	1.5
Clarion	351	1.26	62.9	29.2	50.0	7.5	6.0	6.5	2.0
Lerma Rojo 64	231	1.35	37.4	41.0	45.7	7.0	5.0	9.0	3.0
Centurk	83	1.20	51.2	35.9	48.2	7.0	4.5	8.0	2.0
Backa	85	1.73	58.9	42.4	59.4	6.0	4.5	8.0	2.0
Rousalka	86	1.29	36.1	44.2	39.0	7.0	4.0	9.0	3.0
Moldova	61	1.84	44.8	42.5	66.8	6.0	4.5	7.5	2.0
Tam 102	203	1.29	54.4	31.0	53.5	7.5	5.0	8.5	2.0
Dacia	65	1.51	82.4	50.2	63.9	5.5	4.5	8.0	2.0
Starke	331	1.45	28.0	28.4	58.4	7.0	6.0	5.0	1.0
Kirac 66	60	0.94	60.1	41.8	45.2	7.0	5.0	6.5	1.5
Mean	176.4	1.40	52.7	38.7	52.5	6.9	4.7	7.5	2.0

a) Falling number values - over 300-350 is considered normal for wheat.
- less than 250 there has been some sprouting.
- less than 100 there has been considerable sprout damage.

b) Infected as a percent of the non-inoculated control.
c) 1 = healthy; 9 = very severe attack.
d) Data provided by G. Popow and F. Weilenmann.

Table 95. Quality data for cultivars grown in observation plots of the Fifth International Winter Wheat Performance Nursery at Vienna, Austria in 1973[a].

Cultivar	Gluten Content %	Swelling number Q_0	Swelling number Q_{30}	Zeleny sedimentation Value	Protein content %
Strampelli	30.4	16	12	33	13.0
Probstdorfer Extrem	42.5	13	9	68	14.9
Victor I	31.2	12	7	24	13.4
Carifen 12	25.4	18	15	40	12.5
Caribo	26.5	18	13	34	13.1
C.I.15074	38.4	14	10	65	15.6
Zlatna dolina	27.1	18	14	28	13.0
Hokuei	30.5	14	11	27	13.1
Atlas 66	50.0	7	4	43	16.6
Diplomat	30.2	16	13	41	13.8
Blueboy	27.8	11	8	28	12.6
Maris Nimrod	32.8	8	5	24	13.9
Marimp 3	30.0	14	9	32	13.4
Jyva	37.9	13	8	23	15.3
Sava	31.8	14	7	21	13.2
Lancota (NE701132)	43.9	18	13	72	16.5
Bezostaya 1	32.5	22	15	63	14.1
Lilifen	30.7	16	13	31	14.1
Vakka	35.2	14	10	24	14.6
Zenith	34.1	18	12	61	14.3
Clarion	32.6	10	5	27	13.4
Lerma Rojo 64	38.6	11	7	30	14.9
Centurk	31.4	19	12	62	13.8
Backa	34.3	8	4	26	14.2
Rousalka	34.5	9	5	28	14.2
Moldova	37.1	7	4	30	14.7
Tam 102	29.1	12	9	41	12.8
Dacia	36.2	19	15	47	15.1
Starke	34.7	15	9	45	14.3
Kirac 66	34.2	11	5	30	14.6
Mean	33.7	13.8	9.4	38.3	14.1

a) Reported by Drs. R. Hron and K. Waltl.

Table 96. Postulated genes for resistance to *Puccinia graminis* f. sp. *tritici* in varieties of the Fourth and Fifth International Winter Wheat Performance Nurseries.[a]

Cultivar	Sr gene*	Cultivar	Sr gene*
Blueboy	None	Atlas 66	+
Starke	None	Diplomat	A, B, +
Jyva	None	Maris Nimrod	A, B
Vakka	None	Clarion	A, B
Bezostaya 1	5, +	Moldova	A
Dacia	5, +	Probstdorfer Extrem	A
Marimp 3	8	Carifen 12	A
Strampelli	8, +	Hokuei	A
Zlatna dolina	8, 17	Zenith	A
Rousalka	8, 7b, +	Backe	A
Lancota (NE701132)	5, 17, +	Caribo	A
Kirac 66	6, 7b, +	Lilifen	+
Lerma Rojo 64	6, 7b, 9a, +	Sava	+
Victor I	5, 6, 8	Tam 102	+
Centurk	5, 6, 8, 9a, 17	C.I.15074	+

*+ = Unidentified gene or genes. A and B = Previously unidentified genes.

a) Data from D. V. McVey and A. P. Roelfs, Regional Rust Laboratory, University of Minnesota.

Table 97. Mildew, stripe rust and straw stiffness data for cultivars grown in observation plots of the Fifth International Winter Wheat Performance Nursery in the Netherlands in 1973[a].

Cultivar	Mildew Sev. %		Stripe rust[b]				Straw[c] stiffness
			June 8		July 9		
	June 8	July 9	Sev. %	Resp.	Sev. %	Resp.	1-9
Strampelli	15	30	--	--	2	VS	4
Probstdorfer Extrem	20	20	--	--	0	--	4
Victor I	10	60	--	--	0	--	1
Carifen 12	40	60	--	--	0	--	1
Caribo	30	70	--	--	0	--	4
C.I.15074	40	--	--	--	--	--	4
Zlatna dolina	15	--	--	--	--	--	2
Hokuei	40	70	--	--	1	VS	6
Atlas 66	10	30	--	--	50	VS	6
Diplomat	60	80	--	--	0	--	2
Blueboy	50	--	--	--	--	--	3
Maris Nimrod	1	10	--	--	0	--	3
Marimp 3	2	20	--	--	5	VS	4
Jyva	25	50	--	--	5	VS	5
Sava	5	--	--	--	50	S	1
Lancota (NE701132)	15	70	--	--	2	VS	8
Bezostaya 1	25	80	--	--	2	VS	7
Lilifen	40	70	--	--	1	VS	2
Vakka	25	25	--	--	1	VS	8
Zenith	15	40	--	--	0	--	7
Clarion	30	80	--	--	10	VS	2
Lerma Rojo 64	5	--	--	--	--	--	1
Centurk	2	--	50	S	--	--	7
Backa	2	--	20	VS	--	--	3
Rousalka	1	--	--	--	--	--	2
Moldova	15	--	30	VS	--	--	5
Tam 102	15	--	40	VS	--	--	5
Dacia	10	20	--	--	--	--	5
Starke	5	5	--	--	1	VS	3
Kirac 66	20	80	--	--	10	VS	6
Mean	19.6	48.5	--	--	--	--	4.0

a) Data provided by Drs. Lamberts, Lange and Ir. J. Mesdag.
b) Observations from the Polder Eastern Flevaland nursery.
c) Observations from the Wageningen nursery.