AGENCY FOR INTERNATIONAL DEVELOPMENT
WASHINGTON, D. C. 20523
BIBLIOGRAPHIC INPUT SHEET

FOR AID USE ONLY
BATCH #42

1. SUBJECT CLASSIFICATION

A. PRIMARY
Food production and nutrition — AF30-0180-0000

B. SECONDARY
Plant breeding--Cereals--Wheat

2. TITLE AND SUBTITLE
Results of the sixth International Winter Wheat Performance Nursery grown in 1974

3. AUTHOR(S)
Wilhelmi, K.D.; Kuhr, Steven; Johnson, V.A.; Mattern, P.J.; Schmidt, J.W.

4. DOCUMENT DATE	5. NUMBER OF PAGES	6. ARC NUMBER
1976	187 p.	ARC

7. REFERENCE ORGANIZATION NAME AND ADDRESS

Neb.

8. SUPPLEMENTARY NOTES *(Sponsoring Organization, Publishers, Availability)*

(In Research bul. 279)

9. ABSTRACT

The Sixth International Winter Wheat Performance Nursery (IWWPN) was grown at 48 locations in 30 countries in 1974. Fifty-five locations were mailed seed and 87% of the cooperators returned data for analysis. The nursery consisted of 29 winter wheat cultivars and one spring wheat variety. Thirteen new cultivars were added to the 1974 IWWPN. Seventeen varieties, which include four long-term checks, have been grown over a three-year period. 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 other traits reportedly cooperators. Supplemental nursery management information is reported for each nursery site adjacent to the agronomic, grain quality, and disease data tables. Summary tables by trait over locations for each variety and across varieties for 1974 are presented. In addition, means based on regionalization of the data into six rather broad geographic areas of the world with appropriate statistical analyses are reported. Means and statistics for 16 cultivars that were grown concomitantly in three IWWPNs from 1972 to 1974 also are reported.

10. CONTROL NUMBER
PN-AAC-797

11. PRICE OF DOCUMENT

12. DESCRIPTORS
Data
Environmental tests
Varieties
Wheat

13. PROJECT NUMBER

14. CONTRACT NUMBER
AID/ta-C-1093 Res.

15. TYPE OF DOCUMENT

AID 590-1 (4-74)

Research Bulletin

279

December 1976

Results of the Sixth International Winter Wheat Performance Nursery Grown in 1974

by

K. D. Wilkins
S. L. Kuhr
V. A. Johnson
P. S. Mathers
J. W. Schmidt

North Central Region
Agricultural Research Service
U.S. Department of Agriculture

Office of Agriculture
Agency for International Development
U.S. Department of State

The Agricultural Experiment Station
Institute of Agriculture and Natural Resources
University of Nebraska–Lincoln
H. W. Ottoson, Director

CONTENTS

Acknowledgments 1
List of Tables 2
Summary 5
Procedures 7
Cultivars 8
Nursery Sites 8
Nursery Management 12
Data Summarization and Statistical Treatment 15
Results and Discussion:
Yield 17
Protein 18
Test Weight 19
1000-kernel Weight 20
Plant Height and Lodging 20
Winter Survival 21
Frost Damage 21
Maturity 22
Shattering 23
Diseases 23
Individual Location Analyses, 1974 26–121
Summary Tables—Yield 122
Summary Tables—Yield Rankings 128
Summary Tables—Each Trait Over Locations 133
Regional Analyses—By Trait in 1974 136
Summary Tables—Diseases 142
Three-year Analyses—By Trait Over Locations
for 16 Cultivars 163

Issued December 1976, 2,500

ACKNOWLEDGMENTS

Cooperation of nursery collaborators from the 48 locations in 30 countries in which the Sixth International Winter Wheat Performance Nursery was grown is gratefully acknowledged. This cooperative nursery would not be possible without the information and data provided by these individuals. Their responsibility for nursery management, data recording, and harvesting is an essential component of such a program.

The assistance of personnel in the Plant Production and Protection Division, Food and Agriculture Organization of the United Nations in making nursery seed shipments to testing sites and nursery inspections at Near East sites is acknowledged. We acknowledge also the continued assistance and cooperation of wheat personnel of the International Maize and Wheat Improvement Center, Mexico, D. F.

We express our sincere appreciation to all of these organizations and people.

The assistance of Mrs. Margo Youker and Miss Regina Hogendorn in the preparation of this report also is acknowledged.

LIST OF TABLES

Table Number	*Table Description*	*Page Number*
1	Cultivars grown in the Sixth International Winter Wheat Performance Nursery, 1974	9
2	Nursery sites and cooperators of the Sixth International Winter Wheat Performance Nursery, 1974	10
3	Latitude, longitude and elevation of nursery sites of the Sixth International Winter Wheat Performance Nursery, 1974	11
4	Summary over years and locations of cooperators who have grown and reported data from International Winter Wheat Performance Nurseries	14
5–52	Agronomic, grain quality, and disease data for the 30 cultivars in the Sixth International Winter Wheat Performance Nursery at:	
5	Afghanistan, Kabul	27
6	Afghanistan, Kunduz	29
7	Argentina, Balcarce	31
8	Argentina, Bordenave	33
9	Austria, Vienna	35
10	Bulgaria, Tolbukhin	37
11	Chile, Temuco	39
12	England, Cambridge	41
13	Finland, Jokioinen	43
14	France, Orgerus	45
15	Hungary, Martonvasar	47
16	Hungary, Szeged	49
17	India, Simla	51
18	Iran, Hamadan	53
19	Iran, Karaj	55
20	Iraq, Sulaimaniya	57
21	Italy, Milano	59
22	Italy, Rieti	61
23	Japan, Morioka Iwate	63
24	Korea, Suwon	65
25	Lebanon, Beirut	67
26	Mexico, Toluca	69
27	Mexico, Toluca	71
28	Nepal, Kathmandu	73
29	Netherlands, Wageningen	75
30	Poland, Warsaw	77
31	Republic of South Africa, Bethlehem	79
32	Romania, Fundulea	81
33	Spain, Logrono	83
34	Sweden, Svalof	85
35	Switzerland, Zurich	87
36	Turkey, Ankara	89
37	Turkey, Erzurum	91
38	Turkey, Eskisehir	93
39	USA, California, Davis	95
40	USA, Colorado, Akron	97
41	USA, Colorado, Fort Collins	99
42	USA, Nebraska, Lincoln	101

43 USA, New York, Ithaca 103
44 USA, North Carolina, Rowan County 105
45 USA, Oklahoma, Stillwater 107
46 USA, Oregon, Corvallis 109
47 USA, Washington, Pullman 111
48 USSR, Krasnodar 113
49 West Germany, Monsheim 115
50 West Germany, Weihenstephan 117
51 Yugoslavia, Novi Sad 119
52 Yugoslavia, Zagreb 121
53 Summary of average yield in quintals per hectare for cultivars grown in the Sixth International Winter Wheat Performance Nursery, 1974 122
54 Summary of yield rankings for cultivars grown in the Sixth International Winter Wheat Performance Nursery, 1974 128
55 Summary of agronomic, quality and yield data for cultivars grown in the Sixth International Winter Wheat Performance Nursery, 1974 133
56 Correlation coefficients for yield and other agronomic traits combined over 18 nursery sites of the International Winter Wheat Performance Nursery, 1974 135
57–62 Regional Analyses-summary of yield, quality, and other agronomic data for the 30 cultivars grown in the Sixth International Winter Wheat Performance Nursery in 1974 at sites in:
57 Northern Europe 136
58 Southern Europe 137
59 North America 138
60 Southern Hemisphere 139
61 Near East 140
62 Far East 141
63–67 Reaction of International Winter Wheat cultivars to various diseases:
63 Yellow rust *(Puccinia striiformis)* 142
64 Stem rust *(Puccinia graminis tritici)* 144
65 Leaf rust *(Puccinia recondita)* 147
66 Powdery mildew *(Erysiphe graminis)* 150
67 Septoria *(Septoria tritici, septoria nodorum)* 152
68 Reaction of Sixth International Winter Wheat Performance Nursery cultivars to yellow, leaf and stem rusts from the fourth RDISN grown in 1974 153
69 Reaction of Sixth International Winter Wheat Performance Nursery cultivars to yellow, leaf and stem rusts in 1974 from artificial inoculations at Fundulea, Romania 154
70 Reaction of wheat cultivars grown in the Sixth International Winter Wheat Performance Nursery to stem rust and leaf rust at College Station, Texas 155
71 Reaction of cultivars grown in the Sixth IWWPN to stripe rust in an observation nursery near Wageningen, Netherlands in 1974 156

72 Reaction of Sixth International Winter Wheat Performance Nursery cultivars grown in Indiana to leaf and stem rusts and Septoria in 1974 157

73 Quality data for cultivars grown in the Fifth International Winter Wheat Performance Nursery at Svalof, Sweden in 1973 158

74 Quality data for cultivars grown in the Sixth International Winter Wheat Performance Nursery in 1974 at Svalof, Sweden 161

75 Agronomic, grain quality, and disease data for the 30 cultivars in the Sixth International Winter Wheat Performance Nursery grown at Pullman, Washington with a second nitrogen rate 162

76–86 Three-year analyses by location with means and rankings of various traits for 16 cultivars grown in the International Winter Wheat Performance, 1972–1974:

76 Yield 163
77 Grain protein 167
78 Test weight 170
79 1000-kernel weight 172
80 Plant height 175
81 Lodging 176
82 Winter survival 178
83 Frost damage 179
84 Days to flowering 180
85 Days to ripening 183
86 Shattering 185

SUMMARY

The Sixth International Winter Wheat Performance Nursery (IWWPN) was grown at 48 locations in 30 countries in 1974. Fifty-five locations were mailed seed and 87% of the cooperators returned data to Nebraska for analysis. Forty-four of the sites were in the Northern Hemisphere and the remainder located singly at Balcarce and Bordenave, Argentina; Temuco, Chile, and Bethlehem, Republic of South Africa. The nursery consisted of 29 winter wheat cultivars and one spring wheat variety, Lerma Rojo 64. Thirteen new cultivars were added to the 1974 IWWPN. Seventeen varieties, which include four long term checks, have been grown over a three-year period. 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 other traits reported by cooperators. Supplemental nursery management information is reported for each nursery site adjacent to the agronomic, grain quality, and disease data tables. Summary tables by trait over locations for each variety and across varieties for 1974 are presented. In addition, means based on regionalization of the data into six rather broad geographic areas of the world with appropriate statistical analyses are reported. Means and statistics for 16 cultivars that were grown concomitantly in three IWWPN's from 1972 to 1974 also are reported.

The nursery grand mean for yield based on 46 locations, which excludes Cambridge, England, was 36.6 q/ha. The mean yield over 45 locations, which also excludes Morioka, Japan, was 36.9 q/ha. Individual nursery yield means ranged from a low of 7.1 q/ha at Stillwater, Oklahoma to 69.9 q/ha at Svalof, Sweden. Kavkaz, a variety from the U.S.S.R., was the most productive cultivar on the average over 45 reporting sites in 1974. Its yield was 42.1 q/ha or 4.7% better than the long term Russian check variety Bezostaya 1. Other cultivars yielding slightly more than Bezostaya 1 included Aurora (U.S.S.R.), Maris Nimrod (England), and Burgas 2 (U.S.S.R.).

From the regional analyses for yield none of the cultivars was superior in more than one geographical location. In Northern Europe, Maris Nimrod and Caribo (West Germany) yielded 26 and 18% more than Bezostaya 1. In Southern Europe, Zlatna Dolina (Yugoslavia) and Kavkaz had superior yields. The cultivars Blueboy (U.S.A.) and Likafen (Chile) produced yields which were 27 and 20% higher than Bezostaya 1 in the Southern Hemisphere. In the Near East, Bolal (Turkey) and Blueboy were the highest yielding cultivars. Bezostaya 1 produced the highest yields in the Far Eastern region.

Three-year yield means for cultivars over 30 locations were 41.6, 41.2, 41.0, 40.8, and 39.9 q/ha for Zlatna Dolina, Bezostaya 1, Blueboy, Dacia (Romania), and Maris Nimrod, respectively. Kirac 66 was the lowest yielding cultivar over the three-year period at 29.7 q/ha.

There was excellent expression of genetic potential for high grain protein content in Atlas 66 and its derived cultivar Lancota again in

the 1974 IWWPN. Atlas had the highest average grain protein content of 16.9% and Lancota was second at 16.0%. Blueboy had the lowest grain protein content of all cultivars at 12.9%. The relationship between yield level and protein content was inconsistent among nursery sites. However, varieties were identified that had both high and ordinary levels of grain protein within groups of both high and low grain yield levels. Over the three-year period 1972–1974, Atlas 66 again maintained its grain protein advantage over the other 15 cultivars compared over 18 locations.

Cultivar means for test weight from 29 sites in 1974 indicated the superiority of Bezostaya 1. Other varieties exhibiting high test weights included Aurora, Demar 4 (Italy), Favorit (Romania), and Dacia (Romania). Three-year test weight means from 1972–1974 showed that Bezostaya 1, Lancota (U.S.A.), and Diplomat (West Germany) had the three highest test weights.

The grand mean for 1000-kernels from nine sites was 37.0 grams. Rousalka had the highest average 1000-kernel weight mean of 43.2 grams and Zenith (Switzerland) the lowest of 28.9 grams. The cultivars Dacia, Kavkaz, Aurora, and Bezostaya 1 also had high 1000-kernel weights. Aurora, Bezostaya 1, and Rousalka (Bulgaria) also were among the top five cultivars in test weight. Other varieties such as Maris Nimrod and NS 732 (Yugoslavia) ranked high in 1000-kernel weight, but low in test weight.

The grand means for plant height and lodging percentage were 89.8 cm and 16.6%. Plant height and lodging were closely associated again in 1974 as was the case in 1973. The four tallest cultivars, Atlas 66, Kirac 66 (Turkey), Lancota, and Bolal (Turkey), also had the highest lodging percentages. A variety from Yugoslavia, NS732, was the shortest at 58.6 cm. Varieties grew taller in the Far East, Southern Europe, and Northern Europe than the other three regions.

Means for winter survival averaged over 11 sites reporting differential readings among varieties ranged from a high of 89.2% for Kavkaz to a low of 72.6% for Marimp 3 (Italy). Other cultivars exhibiting winter survival percentages greater than 85% included Bezostaya 1, Aurora, Burgas 2, Dwarf Bezostaya (U.S.S.R.), Dacia, and Bolal. In the comparison of three-year means for winter survival, Bezostaya 1, Moldova (Romania), and Dacia survived the best and Marimp 3 the least.

Maturity differences were large among varieties analyzed in 1974 IWWPN. The variety Rousalka was the earliest in days to flowering and days to ripening with 158.0 and 198.3 days from January 1, respectively. The latest maturing variety averaged over all tests was Diplomat from West Germany. It required 178.2 days to flowering and 213.9 days to ripening.

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

Results of the Sixth International Winter Wheat Performance Nursery Grown in 1974

K. D. Wilhelmi, S. L. Kuhr, V. A. Johnson, P. J. Mattern, and J. W. Schmidt[1]

This is the sixth 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

---

[1]Research Assistant, Wheat Breeding, University of Nebraska–Lincoln; Research Assistant, University of Nebraska–Lincoln; Research Agronomist, Agricultural Research Service, U. S. Department of Agriculture, and Professor, University of Nebraska–Lincoln; Professor, Cereal Quality, University of Nebraska–Lincoln; and Professor, Small Grain Breeding, University of Nebraska–Lincoln; respectively. Cooperative investigations of the Nebraska Agricultural Experiment Station and Agricultural Research Service, U. S. Department of Agriculture, Lincoln, Nebraska, under Contract Nos. AID/csd–1208 and AID/ta–C–1093 with the Agency for International Development, U. S. Department of State.

Lincoln for protein analysis in the University of Nebraska Wheat Quality Laboratory.

CULTIVARS

Of the 30 cultivars grown in the 1974 IWWPN, 17 were repeated from the 1972 and 1973 nurseries with 12 cultivars added for their first year of testing. Cultivars are now 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 grown only in 1971. NB69150 was entered in the nursery for only one year primarily to acquaint cooperators with this Triticale germplasm. NS732 was included in the Sixth IWWPN in 1974 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.

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 Sixth IWWPN was grown at 48 locations in 30 different countries. A total of 45 locations were in the Northern Hemisphere and the other three sites in Argentina, Chile, and the Republic of South Africa. Individual cooperators receiving seed of the nursery are listed in Table 2. The location of nursery sites with respect to latitude, longitude, and elevation is given in Table 3. Figure 1 shows the distribution of nursery sites on a worldwide basis. The length of growing season for each location is given in Figure 2. A summary over years and locations of cooperator participation in the IWWPN appears in Table 4.

Field data were received at Lincoln, Nebraska from 48 locations. Seed for planting the nurseries at Algiers, Algeria; Pelotas, Brazil; Male Ripnany and Sedlec, Czechoslovakia; Florence, Italy; Amman, Jordan, and Islamabad, Pakistan either arrived too late for normal planting, or the nursery was abandoned for other reasons.

Ten-gram samples for quality analysis from harvested plots of the IWWPN were received from most of the 48 locations. Those locations failing to return seed samples include Jokioinen, Finland; Logrono,

Table 1. Cultivars grown in the Sixth International Winter Wheat Performance Nursery, 1974.

Name	Origin	Pedigree
Atlas 66	North Carolina, U.S.A.	Frondoso/2/Redhart 3/Noll 28
Aurora	U.S.S.R.	Neytsyukht/Bezostaya 4//Bezostaya 1
Bezostaya 1	U.S.S.R.	Lyutestsens #17/Skorospelka 2
Blueboy	North Carolina, U.S.A.	Norin 10/Brevor//Anderson/Coker 55-9
Blueboy II	North Carolina, U.S.A.	Agent/Tascosa//4* Blueboy
Bolal	Turkey	Cheyenne//Kenya/Mentana
Burgas 2	Bulgaria	Selection made in Bulgaria from Krasnodar, U.S.S.R. material
Caribo	West Germany	Capelle Desprez/Carstens VIII
Carifen 12	Chile	Dijon^2/Vogel 831c
Clarion	Netherlands	H 10/2/Carpo/Generoso
Dacia	Romania	Bucuresti 1/Skorospelka 3 (b)
Demar 4	Italy	Not available
Diplomat	West Germany	Merlin/Format
Dwarf Bezostaya (Karlik 1)	U.S.S.R.	Irradiation of Bezostaya 1
Favorit	Romania	Odvos 241/Bezostaya 4
Jubilar	West Germany	Schernauer//Taca/Derenburger Silber
Kavkaz	U.S.S.R.	Neytsyukht/Bezostaya 4//Bezostaya 1
Kirac 66	Turkey	Florence/Yayla 305
Lancota (NE701132)	Nebraska, U.S.A.	Atlas 66/Comanche//Lancer
Lerma Rojo 64	Mexico	Lerma Rojo/4/Lerma 52/3/Norin 10/Brevor /2/Yaqui 50
Likafen	Chile	Vogel 8316/Lee-Kenya Farmer
Manella	Netherlands	Alba/Heine VII
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 Bucuresti 1/Skorospelka 3
Moldova	Romania	Bucuresti 1/Skorospelka 3 (b)
NS732	Yugoslavia	S-13/Aobakomugki
Rousalka	Bulgaria	S.13/BAN 54
Sanja (Zg 5996/66)	Yugoslavia	Zg 414-57/Leonardo
Zenith	Switzerland	Heine VII/Canadian 3842-3663
Zlatna Dolina	Yugoslavia	414-57/Leonardo

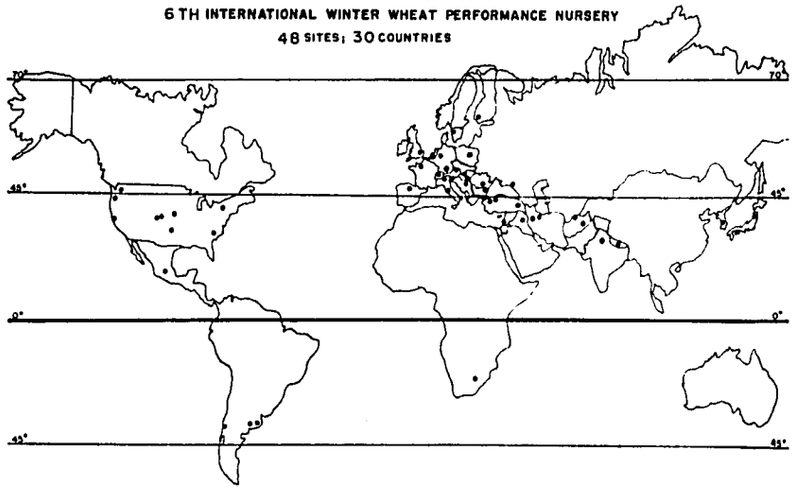
Table 2. Nursery sites and cooperators of the Sixth International Winter Wheat Performance Nursery, 1974.

Country	Station	Cooperator receiving seed
Afghanistan	Kabul	Dr. H. C. Wiggin
"	Kunduz	" "
Algeria	Algiers	Dr. W. L. McCuistion
		Mr. T. Nezzal
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	Temuco	Dr. Ignacio Ramirez
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
Nepal	Kathmandu	Mr. Staley Pitts
Netherlands	Wageningen	Dr. Ir. A. C. Zeven
Pakistan	Islamabad	Dr. G. W. MacLean
Poland	Warsaw	Prof. Stanislaw Starzycki
Republic of South Africa	Bethlehem	Dr. B. Lombard
		Mr. I. B. J. Smit
Romania	Fundulea	Prof. T. E. Muresan
Spain	Logrono	Dr. P. de la Hera
Sweden	Svalof	Dr. Gosta Olsson
Switzerland	Zurich	Dr. G. Popow
Turkey	Ankara	Dr. A. Demirlicakmak
"	Erzurum	Dr. Edward J. Rice
"	Eskisehir	Dr. Turhan Atay
United States	California	Dr. C. O. Qualset
"	Colorado, Akron	Dr. J. R. Welsh
"	Colorado, Fort Collins	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 Sixth International Winter Wheat Performance Nursery, 1974.

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
Bulgaria	Tolbukhin	N43° 40'	E28° 10'	236
Chile	Temuco	S38° 40'	W72° 25'	332
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	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	Milano	N45° 30'	E09° 30'	68
"	Rieti	N42° 24'	E12° 52'	402
Japan	Morioka	N39° 45'	E141° 08'	167
Korea	Suwon	N37° 16'	E126° 59'	37
Lebanon	Tel-Amara	N33° 51'	E35° 59'	905
Mexico	Toluca	N19° 16'	W99° 51'	2640
Nepal	Kathmandu	N27° 40'	E85° 20'	1369
Netherlands	Wageningen	N51° 28'	E05° 38'	7
Poland	Warsaw	N52° 12'	E20° 39'	90
Republic of South Africa	Bethlehem	S28° 10'	E28° 18'	1631
Romania	Fundulea	N44° 03'	E24° 10'	66
Spain	Logrono	N42° 11'	E01° 00'	1030
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	California	N38° 32'	W121° 46'	18
"	Colorado, Akron	N40° 05'	W103° 40'	1389
"	Colorado, Fort Collins	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

FIGURE 1
6TH INTERNATIONAL WINTER WHEAT PERFORMANCE NURSERY
48 SITES; 30 COUNTRIES



Spain; Florence, Italy, 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 76 mm at Kathmandu, Nepal to a high of 1854 mm at Corvallis, Oregon, U.S.A. Twenty-nine locations were in the 0 and 500 mm range and 12 had rainfall between 501 and 1000 mm. Three locations had rainfall in excess of 1000 mm. Average rainfall over 43 locations was 490 mm. Supplemental irrigation was applied at 10 locations or 21% of the nursery sites.

Fertilizer was applied to most of the nurseries. Nitrogen was applied at 42 locations or 88% of the total number of sites. Phosphorus and potassium were applied at 37 and 22 locations, or 77 and 46% of the sites respectively.

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

Figure 2. Length of growing season for the Sixth International Winter Wheat Performance Nursery, 1974.

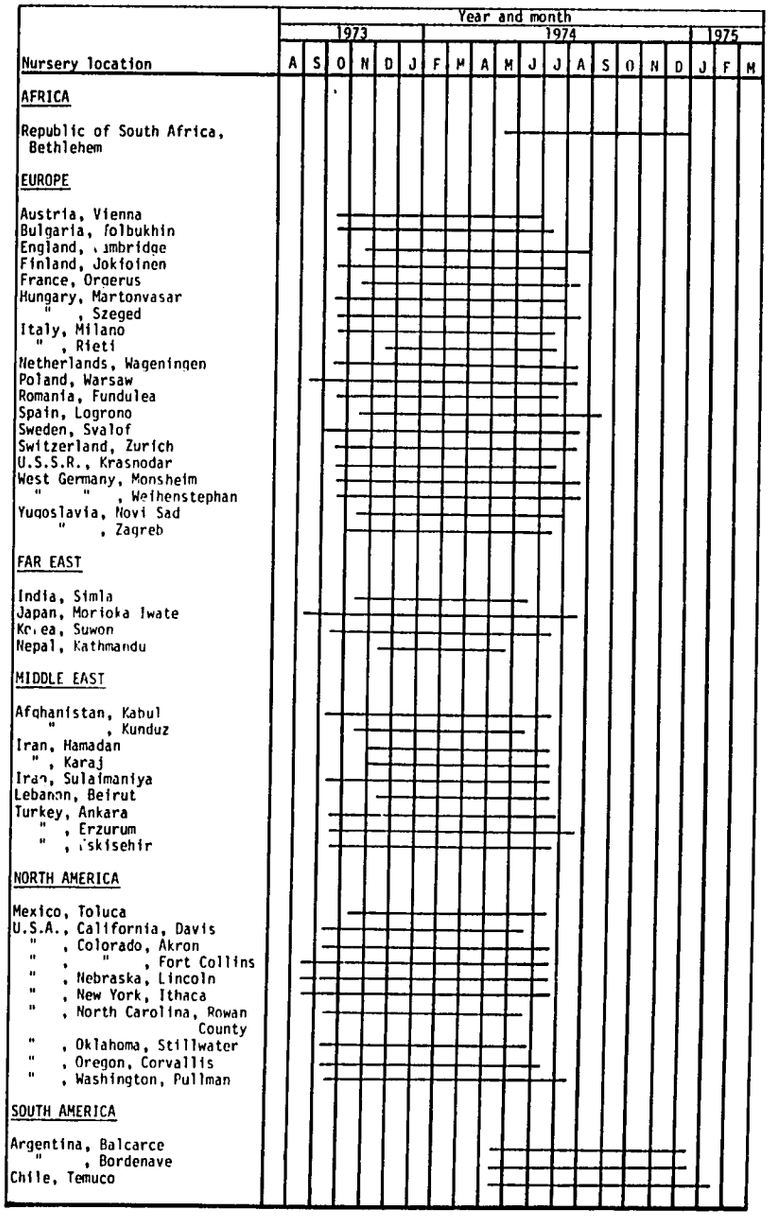


Table 4. Summary over years and locations of cooperators who have grown and reported data from International Winter Wheat Performance Nurseries.

Country	Station	Nursery number and year					
		1 1969	2 1970	3 1971	4 1972	5 1973	6 1974
Afghanistan	Kabul	X	X	X	X	X	X
"	Kunduz				X	X	X
"	Mazar-i-sharif		X	X			
Algeria	El-Harrach	X	X	X	X		
Argentina	Balcarce			X	X	X	X
"	Bordenave	X	XX[a]	X	X	X	X
"	Peragamino	X					
Austria	Vienna		X	X	X	X	X
Brazil	Pelotas		X	X	X	X	
Bulgaria	Tolbukhin		X	X	X	X	X
Chile	Chillan					X	
"	Temuco	X	X	X	X	X	X
Czechoslovakia	Male Ripnany				X	X	
"	Sedlec				X	X	
England	Cambridge		X	X	X	X	X
Finland	Jokioinen		X	X	X	X	X
France	Orgerus					X	X
"	Versailles	X					
Hungary	Martonvasar		X	X	X	X	X
"	Szeged				X	X	X
India	Shalimar		X	X	X	X	
"	Simla			X	X	X	X
"	Damodar		X				
Iran	Hamadan				X	X	X
"	Karaj	X	X	X	X	X	X
"	Kermanshah	X					
"	Mashad		X	X			
Iraq	Sulaimaniya	X	X	X	X	X	X
Italy	Florence					X	
"	Milano	X	X	X	X	X	X
"	Rieti	X	X	X	X	X	X
Japan	Morioka			X	X	X	X
"	Sapporo	X	X				
Jordan	Amman	X				X	
Korea	Suwon		X	X	X	X	X
Lebanon	Tel-Amara					X	X
Mexico	Toluca				XX[a]	X	XX[a]
Nepal	Kathmandu						X
Netherlands	Wageningen	X	X	X	X	X	X
Pakistan	Islamabad					X	
Poland	Warsaw					X	X
Republic of South Africa	Bethlehem						X
Romania	Fundulea	X	X	X	X	X	X
Spain	Logrono						X
Sweden	Svalof	X	X	X	X	X	X
Switzerland	Zurich		X	X	X	X	X
Turkey	Ankara	X	X	X	X	X	X
"	Erzurum					X	X
"	Eskisehir	X	X	X	X	X	X
United States	California	X	X	X			X
" "	Colorado, Akron						X
" "	" , Fort Collins		X	X	X	X	X
" "	Nebraska	X	X	X	X	X	X
" "	New York		X	X	X	X	X
" "	North Carolina	X	X	X	X	X	X
" "	Oklahoma	X	X	X	X	X	X
" "	Oregon				X	X	X
" "	Washington		X	X	X	X	X
USSR	Krasnodar				X	X	X
West Germany	Monsheim		X	X	X	X	X
" "	Weihenstephan		X	X	X	X	X
Yugoslavia	Novi Sad	X	X	X	X	X	X
"	Zagreb		X	X	X	X	X
	Total	23	38	38	44	50	48

a) Two nurseries were completed in one growing season.

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 = scale of 0–9; 0 = no damage, 9 = severe damage.

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

Diseases: Severity of 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 locations in the Sixth IWWPN having full complements 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 6 locations for frost damage to a high of 45 for yield. Statistics reported include means, coefficients of variation, and least significant differences for cultivar mean comparisons. Correlation coefficients for yield, grain protein and other agronomic traits over 48 nursery locations also were computed.

In this report an attempt has been made to regionalize the data from the IWWPN testing network 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 winter wheat production areas of the world into six different regions as follows:

1. Northern Europe — includes seven countries and eight sites as follows: Vienna, Austria; Orgerus, France; Wageningen, Netherlands; Warsaw, Poland; Svalof, Sweden; Zurich, Switzerland; Monsheim and Weihenstephan, West Germany.

2. Southern Europe — includes seven countries and 10 sites as follows: Tolbukhin, Bulgaria; Martonvasar and Szeged, Hungary; Milano and Rieti, Italy; Fundulea, Romania; Logrono, Spain; Krasnodar, U.S.S.R.; Novi Sad and Zagreb, Yugoslavia.

3. North America — includes nine sites in the United States and two sites in Mexico. The U.S. locations include Davis, California; Akron and Fort Collins, Colorado; Lincoln, Nebraska; Ithaca, New York; Rowan Co., North Carolina; Stillwater, Oklahoma; Corvallis, Oregon; and Pullman, Washington. Two nurseries were completed at Toluca, Mexico with each at a different planting date.

4. Near East — includes 11 locations in 7 countries as follows: Kabul and Kunduz, Afghanistan; Hamadan and Karaj, Iran; Sulaimaniya, Iraq; Simla, India; Beirut, Lebanon; Kathmandu, Nepal; Ankara, Erzurum and Eskisehir, Turkey.

5. Far East — includes one location each at Morioka, Japan and Suwon, Korea.

6. Southern Hemisphere — includes nurseries at Balcarce and Bordenave, Argentina; Temuco, Chile and the Republic of South Africa.

The regional analyses were made on data from all 30 cultivars grown in the Sixth IWWPN in 1974. Variety means over all locations within a region have been computed as well as the grand mean for each trait. Least significant differences (L.S.D.) for cultivar mean comparisons and coefficients of variation over all varieties and locations are listed below the tables. Yields as a percentage of Bezostaya 1 for each cultivar within a region also are presented.

Three-year means have been computed and ranked by trait at each location for each of 16 varieties for those locations reporting complete data in all three years, 1972–74. Seventeen varieties were grown concomitantly during this three year period, but the data from the variety Lerma Rojo 64 were incomplete and not used. Means by trait over varieties within each location also are presented. Individual trait means also 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 Sixth International Winter Wheat Performance Nursery sites in Tables 5–52. Supplemental nursery management information is also given for each site. Summary tables of average yields and yield rankings from all nursery sites are reported in Tables 53–54. Cultivar grand means expressed as a percent of Bezostaya 1 also are shown in Table 53. Summaries of yield, agronomic traits, and grain quality measurements for each cultivar combined over nursery sites reporting complete data are presented in Table 55.

Yield

Forty-seven nursery sites reported yield data in 1974. This is three sites less than in 1973. Individual nursery yield means ranged from a low of 7.1 q/ha at Stillwater, Oklahoma to a high of 69.9 q/ha at Svalof, Sweden. Eight nursery sites reported overall nursery yield means in the range of 1–20 q/ha while 17 each were in the 21–40 and 41–60 q/ha ranges. Five locations had yield means ranging from 61–80 q/ha. The grand yield mean over 46 locations, not including Cambridge, England, was 36.6 q/ha (Table 55). This is slightly higher than the 36.0 q/ha grand mean reported for 49 locations in the Fifth IWWPN. From the combined analysis over 45 locations, which excludes Morioka, Japan due to missing data, the grand yield mean was 36.9 q/ha.

Based on variety yield performance over 45 locations, Kavkaz, Aurora, Maris Nimrod, and Burgas 2 all yielded slightly more than Bezostaya 1. Their grain yields were 42.1, 41.9, 40.7, 40.3, and 40.2 q/ha respectively. The lowest yielding variety was Kirac 66 at 28.8 q/ha.

The summary of yield rankings given in Table 54 provides an indication of the range of adaptation for each cultivar. The highest yielding cultivars, based on the analysis over 45 locations, such as Kavkaz, Aurora, Maris Nimrod, Burgas 2, and Bezostaya 1, ranked among the top ten 24, 22, 19, 17, and 23 times, respectively. It is noteworthy that Bezostaya 1, although it yielded slightly less than some of the other varieties, ranked among the top 10 cultivars more often than all other cultivars except Kavkaz.

From the regional analyses none of the varieties tested had the highest mean yield at more than one region of the world (Tables 57–62). In Northern Europe, Maris Nimrod and Caribo yielded 26 and 18% more than Bezostaya 1. In Southern Europe, Zlatna Dolina and Kavkaz out-yielded Bezostaya 1 by 13 and 12%, respectively. Burgas 2 and Rousalka yielded 16 and 10% more than Bezostaya 1 in North America. In the Southern Hemisphere, Blueboy and Likafen produced yields which were 27 and 20% in excess of Bezostaya 1. The

varieties Bolal and Blueboy maintained a yield advantage of 8 and 6% greater than Bezostaya 1 in the Near East. Bezostaya 1 produced the highest yields in the Far Eastern region and was followed by Aurora.

Table 76 contains three-year means and rankings for 16 IWWPN cultivars grown from 1972–1974. The grand yield mean over 30 locations was 37.1 q/ha. The five highest yielding varieties wre Zlatna Dolina, Bezostaya 1, Blueboy, Dacia, and Maris Nimrod with 41.6, 41.2, 41.0, 40.8, and 39.9 q/ha, respectively. Kirac 66 was the lowest yielding cultivar over the three-year period with 29.7 q/ha.

Protein

Protein data from individual locations from which 10 gram seed samples were returned to Nebraska are reported in Tables 5–52. Thirty-five locations returned complete sets of samples over which a combined statistical analysis was performed. Results of the protein analysis over locations are presented in Table 55.

Excellent expression of the genetic potential for higher protein content in Atlas 66 and its derived cultivar, Lancota, was again evident in 1974 as in the 1973 IWWPN. Atlas 66 had the highest protein with 16.9% (Table 55). Lancota was second with a protein percentage of 16.0. Moldova, Dacia, and Favorit had protein contents of 15.9, 15.6, and 15.5%, respectively. Blueboy had the lowest grain protein content of all cultivars with 12.9%. The grand protein mean was 14.5%.

Tables 57–61 contain protein means from the regional analyses. Atlas 66 maintained its grain protein superiority in all five regions. Lancota had the second highest protein content in Northern Europe, Southern Europe, and the Southern Hemisphere. Moldova had a higher grain protein percentage than Lancota in North America and the Near East. The varieties Dacia, Zenith, and Diplomat also exceeded Lancota in the Near Eastern Region.

A correlation coefficient of −.47** between grain yield and grain protein was computed (Table 56). However, relationships between yield level and protein content varied widely among varieties. The tabulation on page 19 from cultivar means over nursery sites illustrates the various combinations of yield versus protein percentage obtained. An inverse relationship between yield and protein content existed for some varieties, but others yielded well while maintaining significantly above-average protein levels.

Table 77 presents three-year cultivar means for grain protein content from 1972–1974. The grain protein advantage of Atlas 66 and Lancota again is evident. Grain protein percentages averaged over 18 locations ranged from a high of 16.3% for Atlas 66 to a low of 12.2 for Blueboy. Other varieties with elevated levels of grain protein included Moldova, Dacia, and Kirac 66.

Supplementary data for grain protein and other quality characteristics of cultivars grown in the Fifth and Sixth IWWPN's at Svalof,

Yield and Protein Characterization of Selected Varieties Grown in the International Winter Wheat Performance Nursery in 1974.

Cultivar	Yield q/ha	Yield Rank	Protein %	Protein Rank
a) *High yield, ordinary protein*				
Blueboy	40.0	(6)	12.9	(30)
Maris Nimrod	40.7	(3)	13.4	(28)
Caribo	39.9	(7)	13.6	(26)
b) *Mod. high yield, high protein*				
Kavkaz	42.0	(1)	15.0	(10)
Burgas 2	40.3	(4)	15.1	(8)
Aurora	41.9	(2)	14.9	(11)
c) *Low yield, high protein*				
Kirac 66	28.8	(30)	15.2	(7)
Lancota	33.9	(25)	16.0	(2)
Atlas 66	30.8	(28)	16.9	(1)
d) *Low yield, ordinary protein*				
NS732	31.1	(27)	13.8	(22)
Diplomat	32.9	(26)	14.4	(14)

Selection of high vs. low yield based on a grand yield mean of 36.9 q/ha over 45 locations

Selection of high vs. ordinary grain protein based on a grand mean over 35 locations of 14.5%

Sweden are presented in Tables 73 and 74.

Test Weight

Individual location data for test weight are presented in Tables 5–52. Table 55 contains cultivar test weight means averaged over 20 locations. The grand mean for test weight was 75.0 kg/hl.

Bezostaya 1 had the highest overall mean test weight of 78.9 kg/hl. Carifen 12 produced the lowest test weight mean of 67.7 kg/hl. Other varieties exhibiting high test weights included Aurora, Demar 4, Favorit, Rousalka, and Dacia.

Test weight means from regional analyses are presented in Tables 57–61. In Northern Europe, Bezostaya 1 had the highest test weight and NS732 the lowest. Aurora produced the highest test weight in Southern Europe and Carifen 12 the lowest. In the North American region Lancota was superior in test weight and Carifen 12 was again the lowest. NS732 had the lowest test weight in the Southern Hemisphere and Aurora was the highest. Bezostaya 1 had the highest mean test weight in the near Eastern region and Carifen 12 again was the lowest.

Three-year means for test weight of 16 cultivars grown from 1972–1974 over 10 locations are compared in Table 78. The cultivars Bezostaya 1, Lancota, and Diplomat had the highest overall test weight means of 80.4, 78.5, and 78.5 kg/hl. Carifen 12 had a test weight mean of only 66.8 kg/hl, which was the lowest of all cultivars compared.

1000-kernel Weight

One-thousand kernel weights were analyzed from nine sites (Table 55). The grand mean was 37.0 grams. Cultivar means ranged from 43.2 grams for Rousalka to only 28.9 for Zenith. Aurora, Kavkaz, Dacia, and Bezostaya 1 were the other four cultivars in addition to Rousalka having the highest seed weight in 1974. Bezostaya 1, Aurora, and Rousalka also were among the top five cultivars in test weight.

Some varieties having high 1000-kernel weights did not have high test weights. Maris Nimrod, for example, ranked eighth in 1000-kernel weight but only twenty-seventh in test weight. NS732 ranked tenth in 1000-kernel weight and only twenty-ninth in test weight.

Only two regions reported data for 1000-kernel weight. Aurora had the highest kernel weight and Blueboy II the lowest in Northern Europe (Table 57). Examination of 1000-kernel weight means from the near East in Table 61 shows Maris Nimrod to be superior and Zenith the lowest among nursery entries.

Examination of 1000-kernel weight means in Table 79 averaged over three locations shows that Dacia produced the heaviest kernels of the 16 cultivars compared. Kernel weights of Rousalka and Maris Nimrod also were heavier than Bezostaya 1. Zenith had the lightest average 1000-kernel weight mean of 29.1 grams compared with 37.0 grams for Bezostaya 1. The grand mean for weight of 1000-kernels was 34.8 grams.

Plant Height and Lodging

Individual location data from those cooperators returning information for these two traits are summarized in Tables 5–52. The grand means for plant height and lodging percentage were 89.8 cm and 16.6% (Table 55).

Plant height and lodging were closely associated again in the 1974 IWWPN as was the case in 1973. A correlation coefficient of .37** between these two traits was computed indicating the taller varieties tended to have higher percentages of lodging. Four each of the tallest and shortest cultivars with their associative lodging ranks are given below.

	Height		Lodging	
Cultivar	cm	Rank	%	Rank
Atlas 66	108.5	(30)	45.1	(28)
Kirac 66	106.1	(29)	58.4	(29)
Lancota	102.6	(28)	41.5	(27)
Bolal	102.4	(27)	59.4	(30)
Zlatna Dolina	74.0	(4)	2.3	(4)
Sanja	70.8	(3)	3.0	(6)
Dwarf Bezostaya	65.2	(2)	0.5	(1)
NS732	58.6	(1)	4.8	(10)

None of the four tallest nor four shortest cultivars were among the seven highest yielding (Table 55) in the Sixth IWWPN. Zlatna Dolina was the fourth shortest variety grown and ranked eighth overall in grain yield.

Varieties were taller in the Far East, Southern Europe, and Northern Europe than in North America, Northern Hemisphere, and the Near East (Tables 59–61). The relative height differences among cultivars across regions remained fairly consistent.

Three-year means for plant height and percent lodging are presented in Tables 80 and 81. Atlas 66, Kirac 66, Lancota, Dacia, and Moldova were the five tallest varieties over the three-year period. Carifen 12 was the shortest cultivar followed by Zlatna Dolina. The five tallest cultivars also had the highest amounts of lodging.

Winter Survival

Eleven nursery sites reported differential readings for winter survival in 1974 with a grand mean of 80.8% (Table 55). Locations having complete survival of all entries were excluded from this analysis. Winter cultivar survival means averaged over 11 sites ranged from a high of 89.2% for Kavkaz to a low of 72.6% for Marimp 3. Aside from Kavkaz, other cultivars exhibiting winter survival percentages greater than 85% included Bezostaya 1, Aurora, Burgas 2, Dwarf Bezostaya, Dacia, and Bolal. Lerma Rojo 64, a spring type wheat variety, averaged 53.1% winter survival grown in the same environments. The varieties Diplomat and Demar 4 had superior winter survival percentages in Northern Europe (Table 57). In Southern Europe, Kirac 66 survived the winter better than all other cultivars (Table 58). Blueboy had the highest percentage of winter survival in the Near Eastern region (Table 61). The means for winter survival over two locations in the Far East given in Table 62 show Kavkaz and Bezostaya 1 to have the highest survival percentages.

Winter survival means of 16 cultivars analyzed over 12 locations from the three-year period 1972–1974 are compared in Table 82. The cultivars Bezostaya 1, Moldova, and Dacia had winter survival means of 94, 91, and 90%, respectively. Marimp 3 had the lowest mean survival percentage of 72.

Frost Damage

Frost damage data were analyzed and reported in Table 55 from six locations. Reported on a scale of 0-9, the grand mean of cultivars was 2.0. Zenith, Dwarf Bezostaya, Manella, Diplomat, and Maris Nimrod were the five varieties with the least amount of frost damage. Varieties having the highest incidence of frost damage included Marimp 3, Zlatna Dolina, Lerma Rojo 64, Kirac 66, and Atlas 66. It should be noted that the amount of frost damage could be related to

cultivar earliness with the possible exceptions of Atlas 66 and Kirac 66 which ranked 17 and 18 in days to flowering.

Individual location means for frost damage ranged from 0.6 at Kabul, Afghanistan (Table 5) to 4.3 at Stillwater, Oklahoma (Table 45).

Bordenave, Argentina (Table 83) was the only site reporting replicated data for frost damage from the 1972–1974 period. The three-year nursery mean over 16 cultivars was 1.3. The cultivars Bezostaya 1 and Lancota had the lowest frost damage readings of 0.0 while Marimp 3 had a score of 4.0.

Maturity

Flowering data for cultivars analyzed over 33 sites are summarized in Table 55. Lerma Rojo 64, a spring cultivar, was the earliest in days to flowering at 155.7 days after January 1. As in 1973, Rousalka was the earliest winter variety to reach flowering with a mean period of only 158.0 days which was only 2.3 days longer than the requirement of Lerma Rojo 64. The latest variety to reach flowering was Diplomat which required 178.2 days. The grand mean for days to flowering was 166.6 days.

Ripening data averaged over 30 sites are summarized in Table 55. In general, the varieties that flowered earliest also ripened the earliest. These data indicate there was little difference among cultivars in length of grain filling period. Rousalka was ripe, on the average, by 198.3 days after January 1. A total of 213.9 days after January 1 were required by Diplomat to reach ripeness. The grand mean for days to ripening was 204.2 days.

The maturity data tabulated on page 23 for days to flowering and days to ripening was extracted from the regional Tables 57–62. Grand means for days to ripening by region were 213.7, 190.4, 165.6, 175.5, and 194.6 for Northern Europe, Southern Europe, North America, the Near East, and the Far East, respectively. The grand mean of 344.9 days to ripening for the Southern Hemisphere results from wheat being planted several months later than at sites in the Northern Hemisphere. On a regional basis the cultivars Rousalka, Moldova, Zlatna Dolina, and NS732 were the earliest in both days to flowering and days to ripening. Diplomat or Clarion were the latest maturing cultivars in all regions.

Three-year means for flowering and ripening of 16 cultivars from 1972–1974 are reported in Tables 84 and 85, respectively. Based on 21 locations, Rousalka required 149.0 days to reach flowering while Diplomat needed 168.0 days. Cultivar means over 14 locations for days to ripening showed Moldova to be the earliest at 194.0 days. Diplomat at 209.0 days again was the latest cultivar.

Maturity Characterization of Early and late Varieties Grown in the International Winter Wheat Performance Nursey in 1974

Region	Days from January 1			
	Earliest variety		Latest variety	
Northern Europe				
Flowering	NS732	(145)	Diplomat	(165)
Ripening	Zlatna Dolina	(208)	Clarion	(221)
	Moldova	(208)	Diplomat	(221)
Southern Europe				
Flowering	Rousalka	(143)	Clarion	(160)
Ripening	Rousalka	(186)	Diplomat	(160)
	Moldova	(186)	Diplomat	(197)
North America				
Flowering	Rousalka	(115)	Diplomat	(154)
Ripening	Rousalka	(160)	Diplomat	(173)
	NS732	(160)		
Southern Hemisphere[a]				
Flowering	NS732	(295)	Clarion	(324)
Ripening	Moldova	(333)	Diplomat	(366)
Near East				
Flowering	Rousalka	(132)	Clarion	(150)
	Moldova	(132)		
Ripening	Moldova	(169)	Clarion	(186)
	Rousalka	(169)	Diplomat	(186)
Far East				
Flowering	Rousalka	(150)	Diplomat	(167)
Ripening	Zlatna Dolina	(186)	Diplomat	(203)

[a]Values for the Southern Hemisphere are approximately 150 days more than the Northern Hemisphere since the wheat crop is planted in May but dates of flowering and ripening are recorded from January 1 (see Figure 2 for the approximate lengths of growing season for sites in the Southern Hemisphere)

Shattering

The grand mean for shattering reported in Table 55 averaged over 16 sites was only 6.4%. Cultivar means ranged from 0.9% for Zenith to 15.4% for Demar 4. Nursery site means ranged from 0.1% at Bordenave, Argentina (Table 8) to 13.8% at Balcarce, Argentina (Table 7). Moderate to heavy shattering occurred at Wageningen, Netherlands (Table 29) and Erzurum, Turkey (Table 37).

Three-year means and rankings for percent shattering for 16 cultivars are presented in Table 86. Nursery means ranged from 0.3% at Svalof, Sweden to 10.4% at Wageningen, Netherlands. The grand mean was 5.3%. Rousalka had the highest shattering percentage of all cultivars tested, but this may be related to its early maturity.

Diseases

Data for the three rusts, yellow or stripe (*Puccinia striiformis*), stem (*Puccinia graminis* f. sp. *tritici*), and leaf (*Puccinia recondita*) were aver-

aged over locations with results presented in Tables 63, 64, and 65. Cultivar high score for each disease is also reported. Individual location disease severity and response readings also are given.

Mean severity readings for yellow rust ranged from a high of 44% for Bolal to a low of 5% for Maris Nimrod, Zenith, and Rousalka. Stem rust means ranged from a low of 5% for Kavkaz to a high of 39% for Jubilar. Bolal had the highest leaf rust percentage of 32% while Atlas 66 and Zlatna Dolina had the lowest mean value of 5%.

Results of reaction of Sixth IWWPN cultivars to the three rusts over reporting locations are presented in Table 68. The Regional Disease and Insect Screening Nursery (RDISN) is coordinated by Dr. E. E. Saari and Dr. J. P. Srivastava. It provides an excellent vehicle for evaluation of cultivars in known disease "hot spots" in the several countries in a short time period.

Supplemental rust data from Fundulea, Romania are presented in Table 69. Other rust data from Texas, U.S.A.; Wageningen, Netherlands, and Indiana, U.S.A. are given in Tables 69–72.

Disease data for powdery mildew (*Erysiphe graminis*) from 13 locations are reported in Table 66. High disease scores for each cultivar over locations also are reported. NS732 had lower and Likafen had higher average readings than the other cultivars.

Septoria data were reported from only four locations (Table 67). The cultivars Jubilar and Diplomat had the lowest readings and Rousalka and NS732 the highest. The severity of *Septoria* appeared to be related to cultivar maturity. The earliest maturing cultivars had the heaviest *Septoria* while the lowest readings were recorded on the latest varieties. *Septoria* readings from an observation nursery planted in Indiana, U.S.A. are reported in Table 72.

AFGHANISTAN

Kunduz

COOPERATOR(S): S. G. Sakhi; F. Noorzod.

DATE OF PLANTING (EFFECTIVE GERMINATION): November 20, 1973.

PRECIPITATION DURING CYCLE OF TEST: 226.8 mm (January - May, 1974).

AMOUNT OF IRRIGATION APPLIED: 330 mm.

FERTILIZER USED: N = 100 kg/ha, P_2O_5 = 100 kg/ha (as Urea and diammonium phosphate).

GENERAL DESCRIPTION OF CLIMATIC CONDITIONS DURING TEST: Winter was normal. There was adequate snow and rainfall, however the spring was fairly dry. No records of snow or rainfall were kept.

DISEASE DEVELOPMENT: Development of rusts were retarded due to dry weather. No other diseases were observed.

INSECT, WEED OR PEST PROBLEMS: Hand weeding was done, with no other problems.

DATE OF HARVEST: June 17, 1974.

AREA HARVESTED FOR YIELD: 5.4 square meters.

DATES WHEN DIFFERENT NOTES WERE TAKEN:
Percent stand - Fall, 1973 and spring, 1974
Date of 50% heading - (Based on varietal differences)
Tip burn - May 22, 1974
Lodging - June 12, 1974
Height - June 12, 1974
Date of maturity - (Based on varietal differences)

Correlation Coefficients

	Yield	Protein	Flowering	Ripening	Plant height	Shattering
Protein	-.14					
Flowering	-.57**	.16				
Ripening	-.49**	.29**	.72**			
Plant height	.01	.35**	.23**	.38**		
Shattering	-.11	-.21*	-.17	-.35**	-.42**	
Winter survival	.06	-.02	.00	-.03	-.11	.02

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

Table 5. Agronomic, grain quality, and disease data for the 30 cultivars in the Sixth International Winter Wheat Performance Nursery grown at Kabul, Afghanistan, 1974.

Cultivar	Yield q/ha	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	Fall stand %	Bird damage %	Stem Rust Sev. %	Stem Rust Resp.
Aurora	64.1	14.5	134	177	114	0	0	99	1	99	0	17	0-S
Blueboy	61.7	11.6	130	175	113	0	2	99	1	99	0	0	0
Burgas 2	61.3	13.6	129	176	93	0	3	98	1	99	0	0	0
Rousalka	61.0	13.7	127	170	88	0	3	99	0	99	0	0	0
Blueboy II	59.4	13.1	129	176	111	3	0	99	1	98	0	0	0
Dwarf Bezostaya	59.1	11.4	130	175	73	0	0	99	1	98	0	15	0-S
Dacia	58.0	14.5	128	169	123	0	3	98	1	98	0	0	0
Bezostaya 1	57.8	14.3	131	173	106	0	0	99	1	99	0	0	0
Moldova	57.1	14.0	123	166	121	8	3	99	1	99	0	15	0-S
Kavkaz	57	14.8	140	178	116	0	1	98	1	98	0	5	0-S
NS732	56.7	11.5	127	175	66	0	8	99	1	98	0	0	0
Sanja (Zg 5996/66)	56.6	12.6	127	170	82	0	0	99	1	99	0	0	0
Favorit	55.1	13.4	127	171	115	1	5	99	1	99	0	0	0
Bolal	54.5	13.5	127	171	125	5	3	99	1	98	0	0	0
Marimp 3	54.2	14.5	127	170	100	0	4	90	1	98	0	0	0
Lerma Rojo 64	54.1	14.0	126	164	103	0	0	98	1	100	5	0	0
Zlatna Dolina	52.9	13.0	127	170	89	0	0	98	0	98	0	0	0
Manella	51.9	13.4	137	180	110	0	0	99	0	98	0	0	0
Likafen	49.9	13.3	130	178	99	0	1	99	1	98	0	0	0
Kirac 66	48.5	15.7	128	174	130	18	4	99	1	99	0	6	0-S
Lancota (NE701132)	48.1	14.7	130	175	123	10	3	98	1	98	0	0	0
Maris Nimrod	46.6	14.0	141	181	103	0	0	99	1	98	0	12	0-MS
Demar 4	46.2	13.7	129	173	104	0	0	99	1	99	0	10	0-MS
Carifen 12	45.3	12.7	137	176	77	0	0	99	1	98	0	0	0
Jubilar	43.2	13.3	147	183	111	0	0	99	1	98	0	7	0-S
Zenith	43.0	15.8	142	179	101	0	0	99	1	98	0	5	0-S
Atlas 66	42.8	16.6	129	172	138	9	0	99	0	99	0	0	0
Caribo	42.4	13.9	137	180	114	0	0	99	1	98	0	2	0-MS
Clarion	40.7	15.3	147	185	101	0	0	98	1	98	0	15	0-S
Diplomat	37.0	14.9	144	182	106	0	2	99	1	99	0	5	0-S
Mean	52.2	13.8	132.1	174.7	105.0	1.8	1.4	98.3	0.6	98.3	0.2	3.8	
L.S.D. of cultivar means (.05)	10.5	1.3	5.9	3.1	10.3	7.5	1.4	4.1	0.8	1.3	0.2	--	
Coefficient of variation (%)	14.3	6.8	3.2	1.3	7.0	304.1	71.6	3.0	91.7	0.9	89.4	--	

AFGHANISTAN

Kabul

COOPERATOR(S): M. A. Rashid.

DATE OF PLANTING (EFFECTIVE GERMINATION): October 8, 1973.

PRECIPITATION DURING CYCLE OF TEST: 104.7 mm (rainfall); 66.5 cm (snowfall).

AMOUNT OF IRRIGATION APPLIED: 381 mm (over six applications).

FERTILIZER USED: N = 100 kg/ha, P_2O_5 = 100 kg/ha (Urea diammonium phosphate).

GENERAL DESCRIPTION OF CLIMATIC CONDITITIONS DURING TEST: Normal winter season prevailed. Lowest temperature of -24.8°C occurred in February. Snow cover was good.

DISEASE DEVELOPMENT: Rusts occurred late in season.

INSECT, WEED OR PEST PROBLEMS: Armyworm incidence was partly controlled.

DATE OF HARVEST: July 8, 1974.

AREA HARVESTED FOR YIELD: 4.8 square meters.

DATES WHEN DIFFERENT NOTES WERE TAKEN:
- Frost damage - March 23, 1974
- Winter survival - March 30, 1974
- Tip burn - June 12, 1974
- Lodging - June 25, 1974
- Height - June 28, 1974
- Rust - July 2-4, 1974
- Shattering - July 18, 1974

Correlation Coefficients

	Yield	Protein	Flowering	Ripening	Plant height	Lodging	Shattering	Winter survival
Protein	-.48**							
Flowering	-.38**	.21*						
Ripening	-.17*	-.01	.73**					
Plant height	.05	.39**	.01	.04				
Lodging	-.04	.22*	-.16	-.04	.40**			
Shattering	.17	-.08	-.31**	-.24**	-.02	.09		
Winter survival	.19*	-.14	.06	.18*	.09	.03	-.08	
Frost	-.15	.15	.05	-.02	-.05	-.09	-.02	-.22

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

Table 6. Agronomic, grain quality, and disease data for the 30 cultivars in the Sixth International Winter Wheat Performance Nursery grown at Kunduz, Afghanistan, 1974.

Cultivar	Yield q/ha	Protein %	Date of Flowering (days from Jan. 1)	Date of Ripening (days from Jan. 1)	Plant height cm	Shattering %	Winter survival %	Tip burn 0-4
Lerma Rojo 64	49.8	13.7	111	147	90	0	95	1
Marimp 3	43.7	14.4	116	150	85	0	91	1
Blueboy II	42.4	13.5	119	154	95	0	94	0
Bezostaya 1	42.3	14.6	118	154	95	0	94	1
Favorit	41.9	14.3	115	151	90	0	94	1
Rousalka	41.7	14.6	114	150	70	0	91	1
Bolal	41.5	13.6	115	150	100	0	90	0
Kavkaz	41.4	14.5	117	155	100	5	93	0
Blueboy	41.4	12.4	120	153	100	0	92	1
Dacia	40.7	15.7	120	154	100	0	93	1
Burgas 2	40.4	14.8	118	154	85	0	90	1
Demar 4	40.3	13.4	118	150	90	4	97	1
Moldova	40.1	15.4	114	149	100	0	90	1
Zlatna Dolina	40.0	12.9	116	150	65	0	96	1
Aurora	38.1	15.6	122	154	100	0	94	1
Sanja (Zg 5996/66)	37.1	13.3	116	150	70	0	95	1
Carifen 12	36.3	13.8	129	160	85	0	96	0
Kirac 66	35.2	15.1	119	159	120	0	91	0
Likafen	34.3	13.5	124	157	90	0	90	0
Lancota (NE701132)	33.6	14.3	123	157	115	0	89	0
Caribo	31.9	14.7	130	161	105	0	94	0
Maris Nimrod	29.8	12.8	131	161	100	0	92	0
Atlas 66	29.1	16.4	123	156	115	0	93	1
Zenith	28.1	15.8	131	162	95	0	91	1
NS732	27.9	12.8	116	144	55	22	93	2
Manella	27.8	13.2	127	156	95	0	94	0
Dwarf Bezostaya	27.5	13.2	119	154	70	0	92	1
Jubilar	25.6	14.1	129	161	110	0	95	0
Clarion	21.7	14.6	133	164	75	0	91	0
Diplomat	18.1	15.9	127	164	90	0	94	0
Mean	35.7	14.2	120.9	154.6	91.8	1.0	92.7	0.5
L.S.D. of cultivar means (.05)	7.9	1.1	4.7	4.8	--	0.6	5.2	0.5
Coefficient of variation (%)	15.7	5.6	2.8	2.2	0.0	44.5	4.0	69.0

ARGENTINA

Balcarce

COOPERATOR(S): R. Bedogni.

DATE OF PLANTING (EFFECTIVE GERMINATION): May 25, 1974.

PRECIPITATION DURING CYCLE OF TEST: 428.9 mm.

AMOUNT OF IRRIGATION APPLIED: None.

FERTILIZER USED: N = 18 kg/ha, P_2O_5 = 55 kg/ha.

GENERAL DESCRIPTION OF CLIMATIC CONDITIONS DURING TEST: Not reported.

DISEASE DEVELOPMENT: Not reported.

INSECT, WEED OR PEST PROBLEMS: Not reported.

DATE OF HARVEST: January 4, 1975.

AREA HARVESTED FOR YIELD: 3.0 square meters.

DATES WHEN DIFFERENT NOTES WERE TAKEN:
Septoria - August 10, September 16, October 8, November 14, 1974
Stripe rust - September 16, October 9, November 14, 1974
Leaf rust - October 9, November 15, December 14, 1974
Stem rust - November 15, December 14, 26, 1974

Correlation Coefficients

	Yield	Test weight	Protein	Flowering	Ripening	Plant height	Lodging	Shattering
Test weight	-.08							
Number of observations	91							
Protein	-.26**	.12						
Number of observations	120	91						
Flowering	.06	-.23*	.31**					
Number of observations	120	91	120					
Ripening	.00	-.20	.28**	.95**				
Number of observations	120	91	120	120				
Plant height	-.40**	.26*	.51**	.33**	.31**			
Number of observations	120	91	120	120	120			
Lodging	-.24**	.39**	.36**	-.27**	-.30**	.38**		
Number of observations	120	91	120	120	120	120		
Shattering	-.67**	.24*	.04	-.19*	-.16	.12	.16	
Number of observations	120	91	120	120	120	120	120	
Frost	-.30**	-.23*	-.19*	-.11	-.05	.00	.19*	.11
Number of observations	120	91	120	120	120	120	120	120

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

Table 7. Agronomic, grain quality, and disease data for the 30 cultivars in the Sixth International Winter Wheat Performance Nursery grown at Balcarce, Argentina, 1974.

Cultivar	Yield q/ha	Test weight kg/hl	Protein %	Date of Flowering (days from Jan. 1)	Date of Ripening (days from Jan. 1)	Plant height cm	Lodging %	Shattering %	Frost damage 0-9	Rust: Stripe Sev. %	Rust: Stripe Resp.	Rust: Leaf Sev. %	Rust: Leaf Resp.	Rust: Stem Sev. %	Rust: Stem Resp.	Septoria Sev. %
Blueboy	25.5	66.0	16.5	292	345	64	0	0	2	0	0	32	MS-S	37	0-S	75
Dwarf Bezostaya	22.7	70.3	15.0	301	347	90	0	0	1	0	0	50	MS-S	40	MS	70
Favorit	21.8	74.3	17.5	295	347	99	20	12	3	0	0	65	MS-S	0	0	67
Likafen	18.6	67.8	17.6	308	352	100	0	0	1	15	0-MS	50	MS	0	0	70
Bezostaya 1	18.2	68.7	17.1	298	347	104	0	10	1	15	0-MR	45	MS-S	10	0-MS	45
Lancota (NE701132)	17.6	74.8	18.0	307	351	115	30	0	2	0	0	26	MS-S	2	0-MR	77
Carifen 12	17.3	73.9	15.3	310	363	95	0	0	2	5	0-S	63	MS-S	12	MR-MS	57
NS732	16.8	69.3	16.1	287	344	65	0	5	2	0	0	5	MR-MS	0	0	77
Zenith	14.6	73.2	18.6	320	363	108	0	0	1	5	MR-MS	82	S	4	MR	27
Bolal	13.9	73.9	16.3	292	345	106	40	15	2	10	0-MS	77	MS-S	0	0	37
Clarion	13.9	69.0	18.2	324	363	103	0	0	3	0	0	76	0-MS	0	0	56
Manella	13.5	70.2	17.9	318	361	110	0	3	1	0	0	70	MS-S	0	0	35
Burgas 2	13.3	72.3	17.6	295	348	101	0	15	1	5	0-MS	77	S	0	0	50
Maris Nimrod	12.9	68.7	17.0	287	343	110	0	0	1	22	MR-S	65	MR-S	7	0-MR	50
Caribo	12.8	68.7	18.4	321	370	110	0	8	3	10	0-MR	62	R-S	0	0	47
Kirac 66	12.5	71.9	18.4	291	347	114	40	13	4	0	0	87	S	2	0-MR	37
Blueboy II	11.4	66.4	16.7	295	347	105	0	0	4	0	0	32	MS-S	0	0	60
Sanja (Zg 5996/66)	11.3	70.8	15.4	291	344	90	0	33	1	25	0-S	47	MR-S	22	0-MS	70
Jubilar	10.5	63.4	18.9	324	363	100	0	15	3	0	0	90	S	0	0	22
Dacia	10.0	66.9	17.8	304	356	116	60	15	3	25	MR-MS	40	S	0	0	52
Atlas 66	9.6	73.0	20.0	298	346	110	53	23	1	5	0-MS	47	S	0	0	35
Kavkaz	8.6	73.2	18.0	307	356	110	0	10	1	0	0	32	MR-MS	0	0	47
Lerma Rojo 64	8.5	74.2	18.9	273	337	95	20	18	1	5	0-MR	15	MS-S	2	0-MS	80
Moldova	8.3	74.1	18.2	287	340	110	58	23	3	20	MS	40	S	5	0-MR	52
Diplomat	7.9	66.0	18.3	327	374	109	0	33	2	0	0-MR	80	S	6	0-MR	25
Rousalka	7.9	70.3	16.7	287	341	90	0	30	4	2	0-MS	25	R-S	2	0-MR	57
Zlatna Dolina	6.4	--	15.0	295	350	100	0	25	8	55	MR-S	20	MR-S	0	0	50
Aurora	6.4	72.3	17.8	306	351	105	38	28	1	0	0	37	MR-S	0	0	35
Marimp 3	4.9	--	17.6	291	344	100	43	23	7	30	0-MS	65	MR-S	0	0	60
Demar 4	3.9	--	17.6	295	347	109	0	60	1	0	0	55	MR-MS	0	0	47
Mean	12.7	70.6	17.4	300.9	351.1	101.4	13.3	13.8	2.3	8.5		51.9		5.0		52.3
L.S.D. of cultivar means (.05)	3.6	0.3	0.3	--	--	2.0	4.0	12.7	0.3	--		--		--		--
Coefficient of variation (%)	20.4	0.2	1.0	--	--	1.4	21.2	65.8	7.9	--		--		--		--

ARGENTINA

Bordenave

COOPERATOR(S): S. E. Garbini.

DATE OF PLANTING (EFFECTIVE GERMINATION): June 10, 1974.

PRECIPITATION DURING CYCLE OF TEST: 246.4 mm.

AMOUNT OF IRRIGATION APPLIED: None.

FERTILIZER USED: None.

GENERAL DESCRIPTION OF CLIMATIC CONDITIONS DURING TEST: Favorable humidity and temperatures in June, July and August. Frost at beginning of September. Limited humidity in spring. Intermittent rains in December.

DISEASE DEVELOPMENT: None.

INSECT, WEED OR PEST PROBLEMS: Not reported.

DATE OF HARVEST: December 2, 1974 - January 4, 1975.

AREA HARVESTED FOR YIELD: 3 square meters.

DATES WHEN DIFFERENT NOTES WERE TAKEN:
Frost damage - September 11, 1975
Height - October 25 - November 26, 1974
Shattering - November 30, 1974 - January 1, 1975
Loding - December 2, 1974 - January 4, 1975

Correlation Coefficients

	Yield	weight	Protein	Flowering	Ripening	height	Shattering
Test weight	.51**						
Protein	-.70**	-.26**					
Flowering	-.62**	-.49**	.61**				
Ripening	-.74**	-.55**	.70**	-.88**			
Plant height	.21*	.46**	.04	-.35**	-.34**		
Shattering	.01	.26**	.00	-.16	-.05	.19*	
Frost	-.03	.01	-.09	-.41**	-.34**	.30**	.13

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

Table 8. Agronomic, grain quality, and disease data for the 30 cultivars in the Sixth International Winter Wheat Performance Nursery grown at Bordenave, Argentina, 1974.

Cultivar	Yield q/ha	Test weight kg/hl	Protein %	Date of Flowering (days from Jan. 1)	Date of Ripening (days from Jan. 1)	Plant height cm	Shattering %	Frost damage 0-9
Blueboy II	36.8	77.4	15.5	300	344	90	0	1
Blueboy	35.1	77.2	15.6	306	340	89	0	1
Zlatna Dolina	33.2	76.4	16.4	296	338	74	0	1
NS732	32.7	72.7	15.0	293	338	59	0	1
Sanja (Zg 5996/66)	32.5	76.4	16.3	296	339	71	0	2
Burgas 2	32.5	76.3	17.4	301	342	80	0	1
Rousalka	32.3	76.0	17.0	298	335	81	0	1
Dacia	31.2	78.7	18.9	303	345	88	0	1
Favorit	30.2	79.7	18.0	298	340	85	0	1
Carifen 12	29.8	72.9	18.7	311	351	66	0	1
Dwarf Bezostaya	29.0	79.5	16.1	302	344	59	0	0
Kirac 66	28.9	80.2	18.1	302	349	90	1	1
Lancota (NE701132)	28.4	79.2	18.6	306	350	86	0	0
Aurora	28.3	80.1	18.2	309	351	84	0	0
Bolal	28.2	79.3	16.1	296	339	91	0	1
Bezostaya 1	28.1	79.9	16.7	301	344	83	0	0
Likafen	27.6	78.9	18.2	307	349	71	0	1
Marimp 3	26.7	78.5	17.8	297	339	85	0	5
Moldova	26.6	77.5	18.3	293	337	98	0	2
Demar 4	25.8	79.3	17.7	297	344	85	2	3
Lerma Rojo 64	24.9	76.9	16.8	288	334	91	0	7
Manella	23.4	77.2	19.0	313	352	71	0	1
Zenith	22.6	74.8	19.3	317	363	74	0	0
Atlas 66	21.9	77.1	20.4	306	351	88	0	3
Clarion	17.9	71.5	19.8	318	364	68	0	1
Kavkaz	17.9	78.3	19.6	311	352	76	0	1
Caribo	17.4	72.2	19.8	318	363	74	0	1
Diplomat	15.6	74.3	19.5	320	365	75	0	1
Maris Nimrod	13.4	71.3	18.3	319	363	73	0	1
Jubilar	11.2	69.8	19.6	319	364	75	0	1
Mean	26.3	76.6	17.9	304.5	347.6	79.3	0.1	1.3
L.S.D. of cultivar means (.05)	3.8	1.0	0.6	6.2	1.3	5.5	0.1	0.5
Coefficient of variation (%)	10.3	1.0	2.5	1.5	0.3	5.0	57.5	27.2

AUSTRIA

Vienna

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

DATE OF PLANTING (EFFECTIVE GERMINATION): October 15, 1973.

PRECIPITATION DURING CYCLE OF TEST: 257.4 mm (October 1, 1973 - June 30, 1974).

AMOUNT OF IRRIGATION APPLIED: 30 mm (April 19), 30 mm (May 21).

FERTILIZER USED: Preplant: N = 36 kg/ha, P_2O_5 = 108 kg/ha, K_2O = 144 kg/ha.
Early spring: N = 70 kg/ha.

GENERAL DESCRIPTION OF CLIMATIC CONDITIONS DURING TEST: Very mild winter, no winter damage. Severe drought until end of May, mitigated by irrigation. Ripening period satisfactory, ripeness delayed by below normal temperatures.

DISEASE DEVELOPMENT: Strong incidence of mildew. No rusts.

INSECT, WEED OR PEST PROBLEMS: No pests, weeds controlled.

DATE OF HARVEST: June 25 and 28, 1974.

AREA HARVESTED FOR YIELD: 3.3 square meters.

DATES WHEN DIFFERENT NOTES WERE TAKEN:
Mildew - May 13 and June 5, 1974

Correlation Coefficients

	Yield	Protein	Flowering	Ripening	Plant height
Protein	-.38**				
Flowering	-.28**	.08			
Ripening	-.10	.01	.80**		
Plant height	-.18*	.53**	.42**	.46**	
1000-kernel weight	.24**	.00**	-.40**	.24**	-.18*

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

Table 9. Agronomic, grain quality, and disease data for the 30 cultivars in the Sixth International Winter Wheat Performance Nursery grown at Vienna, Austria, 1974.

Cultivar	Yield q/ha	Protein %	Date of Flowering (days from Jan. 1)	Date of Ripening (days from Jan. 1)	Plant height cm	1000-kernel weight gm	Mildew Sev. %
Zlatna dolina	67.1	13.6	141	195	80	43	57
Sanja (Zg 5996/66)	65.8	13.3	140	195	76	42	62
Maris Nimrod	55.4	14.4	153	204	93	42	67
Favorit	53.6	17.3	143	195	94	43	72
Bolal	53.4	14.1	144	196	101	42	77
Blueboy	53.4	13.2	146	199	99	38	80
Demar 4	52.6	13.6	142	195	86	45	67
Carifen 12	52.0	13.4	150	196	76	35	75
Kavkaz	51.7	15.6	151	197	95	46	67
Rousalka	51.4	14.5	138	195	80	50	75
Manella	50.6	13.5	151	201	94	44	80
Dacia	50.4	16.7	144	196	99	46	77
Lerma Rojo 64	50.1	16.1	134	19[illegible]	92	45	80
Caribo	49.1	13.8	157	20[illegible]	100	40	70
Dwarf Bezostaya	49.0	12.9	146	19[illegible]	65	42	75
Zenith	48.7	15.6	156	204	98	34	55
Bezostaya 1	48.4	14.8	146	197	88	46	72
Marimp 3	47.7	14.4	143	195	86	40	80
Clarion	47.6	14.8	156	206	93	36	75
Aurora	47.5	15.6	148	197	91	48	72
Jubilar	43.9	16.0	156	207	99	45	67
Burgas 2	43.3	15.0	148	197	79	43	75
Likafen	43.3	14.7	150	198	91	34	75
NS732	43.2	13.0	139	195	63	46	55
Moldova	42.2	16.2	140	195	95	43	80
Blueboy II	42.0	14.1	147	199	94	36	85
Atlas 66	41.2	18.3	149	197	106	39	60
Diplomat	41.0	15.2	158	207	103	41	77
Lancota (NE701132)	39.9	17.9	147	197	98	38	70
Kirac 66	36.3	15.5	149	198	101	38	82
Mean	48.7	14.9	147.0	198.2	90.4	41.7	72.0
L.S.D. of cultivar means (.05)	5.3	0.5	1.5	2.5	5.6	1.9	--
Coefficient of variation (%)	7.8	2.4	0.7	0.9	4.4	3.3	--
Local cultivar							
Probstdorfer Extrem	56.5	--	149	196	110	--	50

BULGARIA

Tolbukhin

COOPERATOR(S): I. Todorov.

DATE OF PLANTING (EFFECTIVE GERMINATION): October 19, 1973.

PRECIPITATION DURING CYCLE OF TEST: 324 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: Dry autumn, mild winter with some precipitation, normal precipitation in the spring, and a dry summer.

DISEASE DEVELOPMENT: Mildew was observed.

INSECT, WEED OR PEST PROBLEMS: None.

DATE OF HARVEST: Not reported.

AREA HARVESTED FOR YIELD: 1.5 square meters.

DATES WHEN DIFFERENT NOTES WERE TAKEN:
Mildew - May 20, 1974

Correlation Coefficients

	Yield	Test weight	Protein	Flowering	Plant height
Test weight	.26**				
Protein	-.19*	-.14			
Flowering	-.18*	-.30**	.17		
Plant height	.09	.38**	.31**	.15	
Winter survival	.09	.22*	.01	.31**	.31**

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

Table 10. Agronomic, grain quality, and disease data for the 30 cultivars in the Sixth International Winter Wheat Performance Nursery grown at Tolbukhin, Bulgaria, 1974.

Cultivar	Yield q/ha	Test weight kg/hl	Protein %	Date of flowering days from Jan. 1	Plant height cm	Winter survival %	Mildew Sev. %
Zlatna Dolina	47.6	77.8	15.2	151	76	82	1
Bezostaya 1	45.0	82.1	15.7	155	91	78	25
Bolal	45.0	79.5	15.6	152	103	82	15
Rousalka	43.3	78.0	16.1	146	81	86	5
Favorit	42.7	80.2	17.6	151	100	81	10
Clarion	41.3	73.2	17.1	162	90	79	15
Dacia	41.0	77.1	17.3	152	105	72	15
Aurora	39.6	81.1	16.2	156	90	78	20
Moldova	39.0	76.4	18.2	149	100	75	20
Blueboy II	38.6	76.4	16.1	154	92	89	25
Demar 4	38.6	79.3	16.1	152	88	82	5
Sanja (Zg 5996/66)	38.6	76.3	15.8	151	73	71	1
Maris Nimrod	38.0	72.6	16.6	161	85	75	1
Caribo	37.6	75.3	16.8	162	94	83	10
Kavkaz	37.3	79.1	17.2	158	98	90	20
Burgas 2	36.7	78.4	16.7	152	84	86	25
Kirac 66	36.6	80.4	17.1	155	111	95	25
Blueboy	36.3	79.5	15.8	155	89	79	20
Lerma Rojo 64	36.0	77.3	17.0	146	89	50	25
Zenith	35.0	76.3	18.2	160	88	86	1
Manella	34.3	79.9	17.2	160	92	76	5
Dwarf Bezostaya	34.0	77.7	16.2	155	53	77	20
Jubilar	33.6	74.4	17.5	162	94	87	5
Lancota (NE701132)	33.3	79.3	18.9	153	100	80	10
Marimp 3	32.3	77.9	17.2	153	97	70	10
Diplomat	32.0	76.3	18.0	163	98	74	10
NS732	31.0	73.0	16.8	150	53	65	1
Carifen 12	30.6	69.2	17.2	158	77	76	20
Atlas 66	26.3	77.3	19.8	155	105	84	5
Likafen	24.7	75.3	17.5	155	78	80	25
Mean	36.9	77.2	16.9	154.8	89.1	78.9	13.2
L.S.D. of cultivar means (.05)	8.9	0.0	1.4	0.0	0.3	0.0	--
Coefficient of variation (%)	17.2	--	6.0	--	0.2	--	--

CHILI

Temuco

COOPERATOR(S): J. Acevedo; I. Ramirez.

DATE OF PLANTING (EFFECTIVE GERMINATION): May 29, 1974.

PRECIPITATION DURING CYCLE OF TEST: Not reported.

AMOUNT OF IRRIGATION APPLIED: None.

FERTILIZER USED: N = 100 kg/ha, P_2O_5 = 200 kg/ha, K_2O = 100 kg/ha.

GENERAL DESCRIPTION OF CLIMATIC CONDITIONS DURING TEST: Dry during late spring - early summer (affected head filling).

DISEASE DEVELOPMENT: Strong infection of stripe rust observed.

INSECT, WEED OR PEST PROBLEMS: None.

DATE OF HARVEST: February 3, 1975.

AREA HARVESTED FOR YIELD: 3 square meters.

DATES WHEN DIFFERENT NOTES WERE TAKEN:
Stripe rust - November 20, 1974
Height - January 24, 1975
Lodging - January 24, 1975

Correlation Coefficients

	Yield	Test weight	Protein	Flowering	Plant height
Test weight	.58**				
Protein	-.41**	-.02			
Flowering	.60**	.25**	-.52**		
Plant height	.20*	.20*	.12	.47**	
Lodging	-.25**	.03	.56**	-.24**	.52**

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

Table 11. Agronomic, grain quality, and disease data for the 30 cultivars in the Sixth International Winter Wheat Performance Nursery grown at Temuco, Chile, 1974.

Cultivar	Yield q/ha	Test weight kg/hl	Protein %	Date of flowering days from Jan. 1	Plant height cm	Lodging %	Stripe rust Sev. %	Stripe rust Resp.
Clarion	70.0	75.6	11.2	344	113	8	6	MR-MS
Likafen	69.3	79.5	11.2	329	109	8	4	MS
Maris Nimrod	68.2	73.8	10.6	342	109	15	37	MR-MS
Manella	64.6	77.1	11.6	337	116	10	0	0
Caribo	63.2	76.3	10.6	342	125	13	15	MS
Kavkaz	62.7	79.7	13.5	336	120	25	3	MS
Aurora	60.2	80.4	12.5	330	111	20	25	MR-MS
Diplomat	59.7	76.8	11.4	343	123	8	5	R-MS
Carifen 12	58.5	66.4	10.3	337	91	0	27	MS
Blueboy	57.8	71.9	11.1	325	113	18	20	MR-MS
Jubilar	55.6	75.8	11.3	339	120	13	45	MR-MS
Burgas 2	54.7	77.4	13.2	325	95	13	15	MR-MS
Zenith	52.6	77.5	12.4	340	108	10	15	MR-MS
Dacia	51.9	76.6	13.2	325	125	28	0	0-MR
Demar 4	51.1	76.9	12.4	325	100	23	65	MS-S
Rousalka	51.0	78.6	14.5	317	83	3	10	MS
Blueboy II	50.4	74.2	12.4	325	111	20	11	MS
Moldova	46.5	76.5	15.0	320	115	28	27	MR-MS
Kirac 66	46.4	80.2	13.4	327	125	43	0	0
Lerma Rojo 64	45.7	77.1	14.5	318	110	50	10	MR-MS
Dwarf Bezostaya	44.4	76.4	11.8	323	75	0	40	MR-MS
Bezostaya 1	43.2	75.7	13.2	325	110	30	60	MS
Lancota (NE701132)	41.3	72.4	14.5	327	133	30	47	MS
Marimp 3	40.6	74.2	12.7	319	98	23	87	MS-S
Zlatna Dolina	39.3	70.4	11.6	321	85	18	92	MS-S
Sanja (Zg 5996/66)	35.7	71.0	11.5	322	78	13	82	MS-S
NS732	28.4	67.0	13.0	313	64	0	82	MS-S
Favorit	27.4	68.3	14.6	320	111	28	69	MR-S
Bolal	26.0	64.0	13.2	322	124	30	92	MS-S
Atlas 66	25.7	71.7	14.0	327	139	45	96	S
Mean	49.7	74.6	12.5	328.0	107.8	18.8	36.2	
L.S.D. of cultivar means (.05)	11.6	2.6	1.1	5.4	10.5	9.7	--	
Coefficient of variation (%)	16.5	2.5	6.0	1.2	6.9	36.6	--	

ENGLAND

Cambridge

COOPERATOR(S): F. G. H. Lupton; R. Oliver.

DATE OF PLANTING (EFFECTIVE GERMINATION): November 16, 1973.

PRECIPITATION DURING CYCLE OF TEST: 398.5 mm (November 14, 1973 - August 22, 1974).

AMOUNT OF IRRIGATION APPLIED: None.

FERTILIZER USED: Not reported.

GENERAL DESCRIPTION OF CLIMATIC CONDITIONS DURING TEST: Mild, dry winter, dry cool spring and early summer. Cool and overcast with heavy rains up to harvest, however it was dry at harvest.

DISEASE DEVELOPMENT: Moderate - severe attack of mildew, but only a slight attack of yellow rust.

INSECT, WEED OR PEST PROBLEMS: Bird damage on early varieties.

DATE OF HARVEST: August 21, 1974.

AREA HARVESTED FOR YIELD: 6.5 square meters.

DATES WHEN DIFFERENT NOTES WERE TAKEN:
Mildew - June 1, 1974
Stripe rust - July 12, 1974
Lodging - July 24, 1974
Height - July 24, 1974

Correlation Coefficients

	Yield	Test weight	Protein	Flowering	Ripening	Plant height
Test weight	-.11					
Number of observations	46					
Protein	-.73**	.06				
Number of observations	77	39				
Flowering	.33	.31	-.56**			
Number of observations	23	23	30			
Ripening	.28	.48*	-.51**	.85**		
Number of observations	23	23	30	30		
Plant height	-.39**	.26	.12	.11	.18	
Number of observations	92	46	96	30	30	
Lodging	-.13	.03	.15	.02	.09	.31**
Number of observations	92	46	96	30	30	120

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

Table 12. Agronomic, grain quality, and disease data for the 30 cultivars in the Sixth International Winter Wheat Performance Nursery grown at Cambridge, England, 1974.

Cultivar	Yield q/ha	Test[b] weight kg/hl	Protein %	Date of[a] Flowering (days from Jan. 1)	Date of[a] Ripening (days from Jan. 1)	Plant height cm	Lodging %	Stripe rust Sev. %	Mildew[b] Sev. %
Maris Nimrod	62.9	77.7	13.0	162	214	98	3	0	40
Dwarf Bezostaya	56.7	78.9	12.7	156	211	77	0	0	65
Caribo	54.3	78.1	12.7	163	214	104	0	0	70
Carifen 12	52.0	75.4	12.4	157	211	84	0	0	80
Clarion	51.2	78.7	13.1	164	211	96	0	0	80
Zenith	50.9	80.5	14.5	163	214	99	0	0	20
Bezostaya 1	48.4	80.1	14.0	154	211	104	0	2	60
Manella	46.7	77.5	13.6	162	214	103	0	0	60
Blueboy	44.8	79.2	13.7	157	214	106	0	4	65
Bolal	44.1	77.9	14.0	155	204	116	20	63	55
Kavkaz	44.1	78.9	15.1	160	214	104	0	0	20
Jubilar	43.7	79.6	13.5	163	214	100	0	0	50
Burgas 2	43.5	76.2	15.2	156	203	93	20	0	30
Likafen	39.9	79.5	15.3	159	211	96	0	0	90
Favorit	39.2	78.2	16.4	152	202	104	3	2	50
Diplomat	38.5	80.8	14.9	166	219	105	0	0	85
Aurora	37.2	79.1	15.7	155	211	95	0	1	10
Kirac 66	34.3	80.3	15.6	160	212	114	40	0	80
Moldova	34.0	75.3	16.6	152	200	109	4	0	55
Blueboy II	33.8	78.5	16.0	159	211	108	0	1	90
Atlas 66	30.8	79.8	17.6	157	213	123	38	2	50
Lancota (NE701132)	28.3	79.2	17.5	157	209	110	1	2	75
Dacia	24.4	77.9	16.7	143	201	112	1	0	75
Marimp 3	--	--	17.2	153	201	102	0	16	40
Zlatna Dolina	--	--	16.1	154	200	82	0	25	15
Rousalka	--	--	18.2	150	199	88	0	0	45
Lerma Rojo 64	--	--	17.3	149	199	89	0	0	75
Sanja (Zg 5996/66)	--	--	15.1	154	205	81	0	7	30
Aurora	--	--	17.2	153	203	89	0	2	40
NS732	--	--	15.9	150	203	67	0	2	30
Mean	42.8	78.6	15.2	156.5	208.3	98.4	4.3	4.3	54.3
L.S.D. of cultivar means (.05)	8.9	1.6	1.0	0.0	0.0	7.3	18.6	--	--
Coefficient of variation (%)	14.7	1.0	4.0	--	--	5.3	308.2	--	--

a) One replication only.
b) Two replications only.

FINLAND

Jokioinen

COOPERATOR(S): R. Manner.

DATE OF PLANTING (EFFECTIVE GERMINATION): October 5, 1973.

PRECIPITATION DURING CYCLE OF TEST: 414.1 mm (October 5, 1973 - August 28, 1974).

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: Date of planting was about 30 days later than normal. The plants were too weak to winter-over well.

DISEASE DEVELOPMENT: Very heavy winter diseases: Snowmold was the worst.

INSECT, WEED OR PEST PROBLEMS: A lot of doves and pheasants.

DATE OF HARVEST: Could not be harvested.

AREA HARVESTED FOR YIELD: None

DATES WHEN DIFFERENT NOTES WERE TAKEN:
Winter survival - May 10, 1974
Date of flowering - June 22-30, 1974
Date of ripeness - August 19-22, 1974
Lodging - August 22, 1974

Correlation Coefficients

	Flowering	Ripening
Ripening	.17	
Winter survival	-.04	.17

Table 13. Agronomic data for the 30 cultivars in the Sixth International Winter Wheat Performance Nursery grown at Jokioinen, Finland, 1974.

Cultivar	Date of[a] Flowering	Date of[a] Ripening	Winter survival[a]
	days from Jan. 1		%
Clarion	180	232	2
Marimp 3	177	232	1
Dacia	175	232	7
Zlatna Dolina	177	232	3
Maris Nimrod	179	232	3
Zenith	179	233	6
Rousalka	174	232	7
Caribo	179	232	9
Diplomat	181	232	7
Kirac 66	176	232	3
Lancota (NE701132)	176	232	2
Carifen 12	176	232	8
Moldova	176	232	3
Atlas 66	176	232	1
Bezostaya 1	177	232	4
Lerma Rojo 64	175	232	5
Blueboy	178	232	9
Dwarf Bezostaya	178	232	[illegible]
Sanja (Zg 5996/66)	176	232	5
Likafen	175	232	5
Favorit	175	232	6
Bolal	175	232	2
Burgas 2	176	232	2
Blueboy II	176	232	4
Manella	180	232	5
Jubilar	178	232	4
Aurora	177	232	3
Demar 4	175	232	12
Kavkaz	181	232	6
NS732	176	232	3
Mean	176.9	232	4.4
L.S.D. of cultivar means (.05)	2.9	0.4	5.2
Coefficient of variation (%)	0.8	0.1	58.3

a) Two replications only.

FRANCE

Orgerus

COOPERATOR(S): P. Benoist.

DATE OF PLANTING (EFFECTIVE GERMINATION): November 9, 1973.

PRECIPITATION DURING CYCLE OF TEST: 515 mm.

AMOUNT OF IRRIGATION APPLIED: None.

FERTILIZER USED: N = 57 kg/ha (NH_4NO_3).

GENERAL DESCRIPTION OF CLIMATIC CONDITIONS DURING TEST: Weather was fairly dry at planting, but emergence was good. The winter was mild, the spring dry. Good rainfall in May and June, and a long period of maturation.

DISEASE DEVELOPMENT: Mildew, eyespot, and stripe rust were observed. Also *Fusarium* on the spikes.

INSECT, WEED OR PEST PROBLEMS: Some aphids after heading.

DATE OF HARVEST: August 12, 1974.

AREA HARVESTED FOR YIELD: 10 square meters.

DATES WHEN DIFFERENT NOTES WERE TAKEN: Not reported.

Correlation Coefficients

	Yield	Protein	Plant height
Protein	-.40**		
Number of observations	120		
Plant height	-.04	.08	
Number of observations	30	30	
Lodging	-.37*	.26	.50**
Number of observations	30	30	30

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

Table 14. Agronomic, grain quality, and disease data for the 30 cultivars in the Sixth International Winter Wheat Performance Nursery grown at Orgerus, France, 1974.

Cultivar	Yield q/ha	Protein %	Plant[a] height cm	Lodging[a] %	Rust[a] Stripe Sev. %	Rust[a] Stripe Resp.	Rust[a] Leaf Sev. %	Rust[a] Leaf Resp.	Mildew[a] Sev. %	Septoria[a] Sev. %	Date of[a] heading days from Jan. 1
Maris Nimrod	88.7	10.7	105	0	1	R	0	0	0	0	125
Kavkaz	74.7	12.9	110	0	5	MR	0	0	0	0	119
Caribo	72.4	10.3	115	0	5	MR	5	MR	80	0	126
Clarion	72.1	11.6	100	0	50	MS	0	0	70	0	126
Aurora	69.4	13.7	105	0	1	R	0	0	5	0	118
Carifen 12	68.5	10.7	85	0	0	0	0	0	60	0	121
Zenith	67.6	12.7	100	0	1	R	1	R	50	0	126
Manella	67.3	10.7	105	0	0	0	1	R	70	0	122
Sanja (Zg 5996/66)	66.6	13.1	75	0	10	MR	0	0	70	10	108
Jubilar	65.2	11.6	110	0	0	0	1	R	80	0	127
Demar 4	63.7	11.8	95	0	1	R	0	0	60	0	111
Zlatna Dolina	63.1	12.3	83	0	15	M	0	0	60	0	108
Marimp 3	61.3	13.2	100	0	99	VS	0	0	50	0	109
Bezostaya 1	61.0	13.4	98	0	20	M	0	0	50	0	115
Dwarf Bezostaya	59.9	12.0	70	0	10	MR	0	0	50	90	118
Blueboy	59.2	10.4	108	0	0	0	0	0	90	0	114
Favorit	59.2	14.1	110	10	50	S	0	0	15	0	111
Diplomat	59.1	11.9	110	0	0	0	5	MR	90	0	127
Dacia	58.0	14.7	108	0	0	0	0	0	50	80	113
Burgas 2	56.4	14.9	85	0	5	MR	0	0	10	0	115
Likafen	55.6	11.7	100	0	0	0	0	0	80	0	121
Atlas 66	55.0	14.2	135	80	1	R	0	0	50	0	118
Bolal	53.1	11.7	115	90	50	S	0	0	60	0	111
Moldova	51.6	14.6	110	10	0	0	0	0	60	70	105
Blueboy II	49.9	11.8	105	0	0	0	1	R	70	0	116
Lerma Rojo 64	49.2	15.2	100	70	0	0	0	0	50	0	101
Lancota (NE701132)	47.5	13.7	115	10	0	0	0	0	70	0	115
Rousalka	47.4	14.8	85	0	0	0	0	0	70	90	103
Kirac 66	45.6	12.7	125	99	0	0	50	MS	80	0	116
NS732	44.5	12.4	68	0	0	0	0	0	0	99	104
Mean	60.4	12.6	101.2	12.3	10.8		2.1		53.3	14.6	115.6
L.S.D. of cultivar means (.05)	5.0	0.9	--	--	--		--		--	--	--
Coefficient of variation (%)	5.9	5.3	--	--	--		--		--	--	--
Local cultivar Talent	81.2	--	85	0	0	--	--	--	--	--	113

a) Based on one replication only.

HUNGARY

Martonvasar

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

DATE OF PLANTING (EFFECTIVE GERMINATION): October 26, 1973.

PRECIPITATION DURING CYCLE OF TEST: 411 mm.

AMOUNT OF IRRIGATION APPLIED: None.

FERTILIZER USED: N = 150 kg/ha, P_2O_5 - 343.5 kg/ha, K_2O = 180 kg/ha.

GENERAL DESCRIPTION OF CLIMATIC CONDITIONS DURING TEST: Unusually mild winter, dry early spring, and favorable weather in May and June.

DISEASE DEVELOPMENT: Moderate mildew and stem rust infection.

INSECT, WEED OR PEST PROBLEMS: None.

DATE OF HARVEST: July 30, 1974.

AREA HARVESTED FOR YIELD: 3.6 square meters.

DATES WHEN DIFFERENT NOTES WERE TAKEN:
Mildew - May 15, 1974
Lodging - July 16, 1974
Stem rust - July 16, 1974

Correlation Coefficients

	Yield	Test weight	Protein	Flowering	Ripening	Plant height
Test weight	.18					
Protein	-.02	.40**				
Flowering	-.19*	-.22*	.14			
Ripening	-.23*	-.19*	.12	.85**		
Plant height	-.02	.42**	.57**	.31**	.32**	
Lodging	-.04	.28**	.16	.32**	-.23*	.40**

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

Table 15. Agronomic, grain quality, and disease data for the 30 cultivars in the Sixth International Winter Wheat Performance Nursery grown at Martonvasar, Hungary, 1974.

Cultivar	Yield g/ha	Test weight kg/hl	Protein %	Date of Flowering (days from Jan. 1)	Date of Ripening (days from Jan. 1)	Plant height cm	Lodging %	Stem rust Sev. %	Stem rust Resp.	Mildew Sev. %
Zlatna Dolina	76.4	75.0	12.9	150	195	76	0	56	MS	12
Kavkaz	75.9	81.5	14.8	157	201	105	0	54	S	72
Sanja (Zg 5996/66)	71.1	74.4	12.8	150	196	77	5	45	MS	11
Favorit	70.9	81.5	15.8	150	195	110	10	50	MS	82
Demar 4	69.7	81.3	13.0	153	197	90	0	75	S	65
Bezostaya 1	68.9	81.9	13.6	153	197	101	5	29	M	94
Carifen 12	68.1	66.6	13.7	156	197	85	0	27	M	70
Rousalka	67.1	79.4	13.3	146	196	79	0	35	M	32
Dacia	66.5	79.7	15.4	152	197	110	10	20	MR-M	89
Zenith	66.5	79.1	14.6	164	203	101	0	46	MS	37
Bolal	66.3	81.9	13.5	150	195	110	55	34	M	85
Blueboy	65.3	71.7	12.7	153	198	102	10	21	M	82
Lancota (NE701132)	63.5	80.8	16.5	153	198	112	20	14	MR	32
Aurora	63.5	83.0	14.4	154	201	100	0	50	MS	94
Caribo	62.4	73.9	13.8	161	204	106	0	55	MS	57
Lerma Rojo 64	61.7	80.9	13.8	146	196	99	35	25	M	85
Atlas 66	61.3	80.3	16.6	154	198	123	25	22	MR	40
Moldova	60.7	79.7	15.0	149	195	104	10	19	MR	80
Blueboy II	60.3	71.9	12.7	152	199	104	15	30	M	80
Jubilar	59.7	76.0	14.1	161	205	103	0	82	S-VS	35
Burgas 2	59.3	76.7	14.1	153	197	87	0	56	MS	96
Manella	59.0	82.9	13.8	157	199	104	0	79	S	50
Maris Nimrod	58.5	71.4	13.8	161	204	102	0	66	S	12
Dwarf Bezostaya	57.0	74.7	13.2	153	197	68	0	38	M	85
Marimp 3	56.8	77.6	14.4	153	196	95	0	35	M	40
Diplomat	52.1	77.3	14.3	162	206	107	0	44	M	85
Kirac 66	51.9	80.1	14.5	153	199	117	55	20	MR	94
NS732	49.5	72.4	13.5	147	195	65	5	50	MS	12
Clarion	48.5	71.9	15.0	162	206	96	0	65	S	50
Likafen	40.8	76.9	13.4	157	201	99	0	34	M	94
Mean	62.0	77.4	14.1	154.0	198.6	97.7	8.7	42.5		61.7
L.S.D. of cultivar means (.05)	8.1	0.4	0.2	1.4	2.0	5.1	11.2	--		--
Coefficient of variation (%)	9.3	0.4	1.1	0.6	0.7	3.7	91.7	--		--

HUNGARY

Szeged

COOPERATOR(S): Z. Barabas.

DATE OF PLANTING (EFFECTIVE GERMINATION): October 24, 1973.

PRECIPITATION DURING CYCLE OF TEST: 379.6 mm.

AMOUNT OF IRRIGATION APPLIED: Not reported.

FERTILIZER USED: N = 200 kg/ha (NH_4NO_3), P_2O_5 = 200 kg/ha ($Ca(H_2PO_4)_2$), K_2O = 200 kg/ha (K_2O).

GENERAL DESCRIPTION OF CLIMATIC CONDITIONS DURING TEST: A mild, dry winter, very dry spring, and a cold, rainy summer.

DISEASE DEVELOPMENT: Not reported.

INSECT, WEED OR PEST PROBLEMS: Not reported.

DATE OF HARVEST: August 6, 1974.

AREA HARVESTED FOR YIELD: 2.16 square meters.

DATES WHEN DIFFERENT NOTES WERE TAKEN:
Winter survival - March 20, 1974
Rusts - May 7, 1974

Correlation Coefficients

	Yield	Test weight	Protein	Flowering	Ripening	Plant height	Lodging
Test weight	-.08						
Number of observations	20						
Protein	-.42*	.27					
Number of observations	30	30					
Flowering	.24**	-.29**	-.24				
Number of observations	120	120	30				
Ripening	.20*	-.21*	-.13	.93**			
Number of observations	120	120	30	120			
Plant height	.06	.43**	.20	.11	.10		
Number of observations	120	120	30	120	120		
Lodging	-.32**	.30**	.16	-.21*	-.20*	.54**	
Number of observations	120	120	30	120	120	120	
Winter survival	.09	-.03	.08	.39**	.44**	.21*	.10
Number of observations	120	120	30	120	120	120	120

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

Table 16. Agronomic, grain quality, and disease data for the 30 cultivars in the Sixth International Winter Wheat Performance Nursery grown at Szeged, Hungary, 1974.

Cultivar	Yield q/ha	Test weight kg/hl	Protein[a] %	Date of Flowering (days from Jan. 1)	Date of Ripening (days from Jan. 1)	Plant height cm	Lodging %	Winter survival %	Rust Leaf Resp.	Rust Stem Resp.
Clarion	47.6	72.2	12.1	151	182	100	0	95	0-S	MS-S
Caribo	44.6	72.8	11.8	147	178	110	0	90	0-S	MS
Sanja (Zg 5996/66)	43.4	73.9	12.2	141	173	80	0	95	0	0
Dacia	42.9	77.4	13.6	141	173	110	0	100	0	0-MS
Maris Nimrod	42.2	69.6	11.8	147	175	100	0	100	0-MR	0-MS
Zenith	42.0	75.6	13.3	147	176	105	0	93	0-S	M-MS
Diplomat	42.0	78.0	12.9	154	187	110	0	100	0-S	MS-S
Jubilar	41.5	73.5	12.6	154	185	115	0	95	0-S	MS-S
Blueboy	41.2	72.9	11.3	142	171	115	0	85	0-S	0-MS
Demar 4	41.0	76.7	13.2	143	172	90	0	95	0	0-MS
Rousalka	40.5	76.1	12.9	140	171	85	0	80	0	0
Manella	40.4	73.2	12.7	149	180	105	0	100	0-S	M
Zlatna Dolina	39.8	74.0	12.0	140	170	80	0	90	0	0-M
Favorit	38.5	78.4	14.2	141	170	110	21	90	0	0-M
Blueboy II	38.3	73.5	12.7	143	170	110	0	80	0	0
Moldova	37.3	75.9	14.0	140	169	115	9	100	0	0-M
Likafen	37.1	75.8	13.0	147	182	100	0	95	0	0-MS
Bezostaya 1	36.9	77.8	13.9	142	173	110	0	90	0	0-MS
Marimp 3	36.5	75.6	13.3	140	171	90	0	95	0	0-MR
Lancota (NE701132)	36.2	77.6	13.9	142	174	128	50	90	0	0
Lerma Rojo 64	36.2	77.9	14.2	135	166	110	0	90	0	0
Aurora	34.9	78.0	13.4	148	183	105	0	95	0	0
Carifen 12	34.4	60.8	13.9	149	180	80	0	95	0	0-M
Atlas 66	34.3	77.0	15.4	143	175	135	64	95	0-VR	0-S
Dwarf Bezostaya	33.8	76.4	13.4	142	170	75	0	85	0	0-M
Kirac 66	32.7	76.8	13.5	142	173	125	95	95	0	0-S
Kavkaz	32.0	77.7	13.7	150	180	113	0	95	0	0-VR
Burgas 2	30.3	73.5	14.5	143	175	85	0	90	0	0
Bolal	28.1	78.6	12.5	141	169	120	90	95	0	0-M
NS732	26.8	72.3	13.2	141	172	65	0	90	0	0-M
Mean	37.8	75.0	13.2	144.2	174.8	102.7	10.9	92.8		
L.S.D. of cultivar means (.05)	6.0	0.8	--	--	1.0	1.8	12.5	1.3		
Coefficient of variation (%)	11.3	0.8	--	--	0.4	1.3	81.6	1.0		

a) One replication only.

INDIA

Simla

COOPERATOR(S): M. K. Upadhyay; and R. Kumar.

DATE OF PLANTING (EFFECTIVE GERMINATION): November 19, 1973.

PRECIPITATION DURING CYCLE OF TEST: 334 mm (November 19, 1973 - June 15, 1974).

AMOUNT OF IRRIGATION APPLIED: Five applications (no amount reported).

FERTILIZER USED: N = 80 kg/ha ($Ca(NH_4NO_3)_2$), P_2O_5 = 40 kg/ha ($3Ca(H_2PO_4)_2$) K_2O = 40 kg/ha (K_2O).

GENERAL DESCRIPTION OF CLIMATIC CONDITIONS DURING TEST: The rainfall during the cycle of the test was low, particularly in February and April. This fact minimized the development of diseases.

DISEASE DEVELOPMENT: No diseases were observed.

INSECT, WEED OR PEST PROBLEMS: Late varieties were subject to bird damage. Steps were taken to minimize damage as much as possible.

DATE OF HARVEST: May 10, 25 and June 15, 1974.

AREA HARVESTED FOR YIELD: 1.84 square meters.

DATES WHEN DIFFERENT NOTES WERE TAKEN:
Germination - December 26, 1973
Flowering - March 20 - May 7, 1974
Maturity - May 1 - June 15, 1974
Height - May 1 - June 15, 1974
Diseases - March, April and May, 1974

Correlation Coefficients

	Yield	Protein	Flowering	Ripening	Plant height	Shattering
Protein	.11					
Flowering	-.61**	-.12				
Ripening	-.59**	-.16	.91**			
Plant height	.42**	.22*	-.28**	-.20*		
Shattering	-.16*	-.21*	-.03	-.04	-.30**	
1000-kernel weight	-.14	-.23*	.30**	.43**	.03	-.14

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

Table 17. Agronomic, grain quality, and disease data for the 30 cultivars in the Sixth International Winter Wheat Performance Nursery grown at Simla, India, 1974.

Cultivar	Yield q/ha	Protein %	Date of Flowering (days from Jan. 1)	Date of Ripening (days from Jan. 1)	Plant height cm	Shattering %	1000-kernel weight gm
Bolal	14.1	19.1	106	133	73	0	25
Burgas 2	13.7	19.1	109	138	65	0	28
Rousalka	13.0	20.3	106	133	55	0	26
Aurora	12.5	18.2	109	138	71	0	31
Blueboy	11.9	18.3	109	137	69	0	25
Blueboy II	11.8	17.8	107	136	75	0	25
Demar 4	11.8	18.2	109	138	73	5	24
Bezostaya 1	11.0	20.1	109	135	65	0	27
Lerma Rojo 64	11.0	18.5	85	121	80	0	30
Moldova	10.9	19.7	106	129	73	0	26
Favorit	10.0	19.0	108	134	72	0	28
Sanja (Zg5996/66)	10.0	18.9	107	134	53	2	24
Zlatna Dolina	9.7	18.2	107	132	54	2	24
Marimp 3	9.1	18.6	105	127	61	0	25
Kirac 66	9.1	18.2	111	141	77	2	28
Likafen	8.9	19.3	110	143	65	0	23
Dwarf Bezostaya	8.9	18.0	109	138	47	0	25
Lancota (NE701132)	8.5	18.6	112	143	70	2	25
Atlas 66	7.7	21.9	109	137	86	0	25
Kavkaz	7.6	20.1	114	140	72	2	29
Dacia	7.5	18.4	110	135	67	3	29
Carifen 12	6.7	17.9	117	147	51	0	30
Maris Nimrod	6.4	17.3	120	161	55	3	35
NS732	5.7	17.5	106	132	42	15	24
Zenith	5.3	19.1	122	158	59	0	24
Caribo	3.8	17.5	122	158	64	1	28
Diplomat	3.6	17.8	127	161	66	1	29
Manella	3.6	20.0	122	158	57	2	33
Jubilar	3.3	17.9	123	160	63	3	29
Clarion	3.1	17.4	126	161	56	0	31
Mean	8.7	18.7	111.3	141.2	64.4	1.4	26.9
L.S.D. of cultivar means (.05)	3.4	1.7	2.5	2.7	8.2	1.7	3.1
Coefficient of variation (%)	27.9	6.3	1.6	1.4	9.0	86.2	8.3
Local cultivar Kalyansonu	12.8	--	103	123	57	0	26.5

IRAN

Hamadan

COOPERATOR(S): N. Safaii.

DATE OF PLANTING (EFFECTIVE GERMINATION): December 3, 1973.

PRECIPITATION DURING CYCLE OF TEST: Not reported.

AMOUNT OF IRRIGATION APPLIED: Not reported.

FERTILIZER USED: N = 120 kg/ha, P_2O_5 = 60 kg/ha.

GENERAL DESCRIPTION OF CLIMATIC CONDITIONS DURING TEST: A cold winter, but the nursery was covered with snow. Germination was complete by early spring.

DISEASE DEVELOPMENT: Not reported.

INSECT, WEED OR PEST PROBLEMS: None.

DATE OF HARVEST: Not reported.

AREA HARVESTED FOR YIELD: 3 square meters.

DATES WHEN DIFFERENT NOTES WERE TAKEN:
Not reported.

Correlation Coefficients

	Yield	Protein	Flowering	Ripening
Protein	-.14			
Flowering	-.25**	.09		
Ripening	.11	.01	.02	
Plant height	.10	.16	.00	.03

**Significant at the 1% level.

Table 18. Agronomic, grain quality, and disease data for the 30 cultivars in the Sixth International Winter Wheat Performance Nursery grown at Hamadan, Iran, 1974.

Cultivar	Yield q/ha	Protein %	Date of Flowering (days from Jan. 1)	Date of Ripening (days from Jan. 1)	Plant height cm
Lerma Rojo 64	34.4	13.9	148	182	74
Zlatna Dolina	32.3	14.7	148	184	55
Dwarf Bezostaya	31.6	12.8	150	186	55
Blueboy II	29.7	13.2	150	192	76
Favorit	29.4	15.4	148	185	73
Marimp 3	29.2	14.2	149	184	65
Bezostaya 1	28.4	14.5	151	188	71
Bolal	28.4	14.7	149	186	78
Blueboy	28.1	13.9	150	192	73
Kirac 66	28.0	16.1	150	192	77
Burgas 2	27.8	16.4	150	192	61
Rousalka	27.7	15.2	148	185	57
Kavkaz	27.6	15.2	152	192	75
Zenith	27.4	15.8	155	192	67
Sanja (Zg 5996/66)	27.4	13.9	149	184	53
Likafen	27.3	15.5	151	192	63
Demar 4	26.9	13.2	148	185	64
Dacia	26.9	16.4	150	191	78
Clarion	26.7	15.7	157	192	60
Lancota (NE701132)	26.4	14.6	152	192	78
Aurora	26.1	16.2	151	192	71
Maris Nimrod	26.0	12.7	156	192	65
Moldova	26.0	15.2	148	184	73
Carifen 12	25.0	15.1	153	192	58
Caribo	25.0	15.4	158	192	67
Manella	24.5	15.6	157	192	57
Jubilar	23.9	16.3	157	147	74
Atlas 66	22.4	16.2	150	192	86
Diplomat	22.3	16.0	154	192	68
NS732	22.1	13.8	149	196	47
Mean	27.2	14.9	151.1	187.6	67.0
L.S.D. of cultivar means (.05)	4.4	1.7	2.9	23.4	3.6
Coefficient of variation (%)	11.5	8.3	1.4	8.9	3.9
Local cultivars					
Omid	42.8	--	154	192	84
Roshan	39.1	--	151	192	88

IRAN

Karaj

COOPERATOR(S): H. Kaveh.

DATE OF PLANTING (EFFECTIVE GERMINATION): November 30, 1973.

PRECIPITATION DURING CYCLE OF TEST: 223 mm.

AMOUNT OF IRRIGATION APPLIED: Not reported.

FERTILIZER USED: Not reported.

GENERAL DESCRIPTION OF CLIMATIC CONDITIONS DURING TEST: The spring was cold and shorter than normal, so the plants became short, also the period between flowering and heading was short.

DISEASE DEVELOPMENT: No disease development.

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

DATE OF HARVEST: Not reported.

AREA HARVESTED FOR YIELD: 3 square meters.

DATES WHEN DIFFERENT NOTES WERE TAKEN:
Not reported.

Correlation Coefficients

	Yield	Protein	Flowering	Ripening	Plant height	Shattering
Protein	.26**					
Number of observations	120					
Flowering	-.47**	-.16				
Number of observations	120	120				
Ripening	-.48**	-.13	.90**			
Number of observations	120	120	120			
Plant height	.16	-.22	.18	.15		
Number of observations	30	30	30	30		
Shattering	.10	-.08	-.44*	-.33	-.17	
Number of observations	30	30	30	30	30	
Winter survival	.43**	-.21	-.09	-.13	.29	.28
Number of observations	60	60	60	60	30	30

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

Table 19. Agronomic, grain quality, and disease data for the 30 cultivars in the Sixth International Winter Wheat Performance Nursery at Karaj, Iran, 1974.

Cultivar	Yield q/ha	Protein %	Days from Flowering (days from Jan. 1)	Days from Ripening (days from Jan. 1)	Plant[a] height cm	Shattering[a] %	Winter[b] survival %	Stem Rust Sev. %	Stem Rust Resp.
Lerma Rojo 64	36.8	13.2	137	173	75	0	83	0	0
Dwarf Bezostaya	36.3	12.0	146	184	55	0	95	25	0-S
Kirac 66	35.8	13.5	146	183	100	0	97	0	0
Blueboy	34.2	12.8	145	184	80	0	80	27	S
Blueboy II	33.9	13.5	141	184	85	15	93	5	0-S
Bolal	33.8	13.0	142	178	80	15	95	2	0-MS
Bezostaya 1	32.7	11.9	145	184	80	2	93	13	MS-S
Burgas 2	31.4	13.6	144	184	65	0	97	0	0
Moldova	30.8	14.2	137	175	75	0	93	0	0
Favorit	30.5	12.6	142	178	70	10	88	5	0-S
Likafen	30.1	13.6	148	186	70	3	93	1	0-MS
Aurora	29.0	13.4	146	184	85	0	99	0	0
Marimp 3	28.8	15.3	146	183	65	5	88	17	0-S
Demar 4	28.7	11.9	143	179	75	5	97	15	0-S
Dacia	28.6	13.3	141	184	90	10	93	15	0-S
Kavkaz	28.4	12.0	146	184	95	0	99	0	0
Atlas 66	28.1	15.5	146	183	85	0	88	1	0-S
Lancota (NE701132)	28.1	14.8	146	184	75	0	95	1	0-MS
Sanja (Zg 4996/66)	26.9	13.1	140	179	50	2	85	7	0-S
Carifen 12	24.9	12.2	149	184	70	0	95	27	S
Zlatna Dolina	24.9	14.4	140	179	55	5	83	12	0-S
Rousalka	24.0	13.5	138	179	50	0	83	7	0-S
NS732	22.8	13.8	139	179	40	20	93	30	MS-S
Caribo	21.5	11.8	153	191	70	0	85	23	MS-S
Zenith	21.0	13.1	153	195	75	0	83	8	0-S
Manella	19.5	11.1	149	190	85	0	93	17	0-S
Maris Nimrod	17.1	12.4	153	192	75	0	85	37	0-S
Clarion	16.4	12.4	155	196	65	0	90	36	MS-S
Diplomat	14.7	14.9	153	191	65	0	83	11	0-S
Jubilar	14.2	12.0	154	191	75	0	85	31	0-S
Mean	27.1	13.1	145.4	184.0	72.7	3.1	90.0	12.4	
L.S.D. of cultivar means (.05)	8.8	2.2	--	2.2	--	--	5.8	--	
Coefficient of variation (%)	23.0	12.0	--	0.9	--	--	3.1	--	

a) One replication only.
b) Two replications only.

IRAQ

Sulaimaniya

COOPERATOR(S): M. M. Said.

DATE OF PLANTING (EFFECTIVE GERMINATION): November, 1973. Actual planting date - October 21, 1973.

PRECIPITATION DURING CYCLE OF TEST: 1009.3 mm.

AMOUNT OF IRRIGATION APPLIED: None.

FERTILIZER USED: N = 80 kg/ha, P_2O_5 = 40 kg/ha.

GENERAL DESCRIPTION OF CLIMATIC CONDITIONS DURING TEST: The general conditions during the season were not favorable for the growth of cereal crops. In spite of high levels of precipitation early in the year, the rains stopped in mid-April, resulting in a very dry spring. The crop was almost desicated during critical period of growth.

DISEASE DEVELOPMENT: Very light infection of leaf rust.

INSECT, WEED OR PEST PROBLEMS: Weeding was done by hand.

DATE OF HARVEST: July 13, 1974.

AREA HARVESTED FOR YIELD: 3 square meters.

DATES WHEN DIFFERENT NOTES WERE TAKEN:
Flowering - April 20 - May 15, 1974
Rust diseases - May, 1974
Maturity - June, 1974

Correlation Coefficients

	Yield	Protein	Flowering	Ripening
Protein	-.69**			
Flowering	-.66**	.70**		
Ripening	-.64**	.71**	.97**	
Plant height	.49**	-.25**	-.43**	-.41**

**Significant at the 1% level.

Table 20. Agronomic, grain quality, and disease data for the 30 cultivars in the Sixth International Winter Wheat Performance Nursery grown at Sulaimaniya, Iraq, 1974.

Cultivar	Yield g/ha	Protein %	Date of Flowering (days from Jan. 1)	Date of Ripening (days from Jan. 1)	Plant height cm
Lerma Rojo 64	34.3	14.2	116	157	103
Bolal	30.8	14.3	126	162	104
Blueboy	27.6	14.2	126	161	93
Blueboy II	26.8	16.0	130	164	94
Zlatna Dolina	26.6	15.6	127	162	69
Demar 4	26.0	13.9	126	161	93
Rousalka	25.7	15.6	121	160	83
Sanja (Zg 5996/66)	23.3	15.2	131	164	65
Marimp 3	23.1	14.9	127	162	89
Favorit	22.8	15.4	133	168	94
Aurora	22.4	16.8	135	166	79
Likafen	21.6	16.6	133	166	83
Kirac 66	21.5	16.6	129	164	106
Kavkaz	21.3	15.1	134	166	80
Bezostaya 1	21.2	15.7	127	161	81
NS732	20.2	14.3	118	158	64
Manella	19.5	16.3	139	171	75
Burgas 2	19.5	18.0	134	166	71
Lancota (NE701132)	18.9	17.8	139	171	81
Dacia	18.9	17.9	136	169	85
Caribo	18.0	19.4	149	179	85
Moldova	17.4	17.8	122	160	89
Atlas 66	17.4	19.1	127	161	109
Dwarf Bezostaya	16.9	16.0	135	166	55
Clarion	14.8	19.0	152	182	70
Zenith	14.1	20.7	151	181	70
Carifen 12	14.0	19.1	144	176	65
Maris Mimrod	12.9	19.0	151	181	71
Jubilar	12.0	19.4	152	182	75
Diplomat	11.9	20.2	152	182	73
Mean	20.7	16.8	133.9	167.5	81.7
L.S.D. of cultivar means (.05)	4.1	1.6	5.5	4.2	7.0
Coefficient of variation (%)	14.2	7.0	2.9	1.8	6.1

ITALY

Milano

COOPERATOR(S): B. Borghi.

DATE OF PLANTING (EFFECTIVE GERMINATION): October 26, 1973.

PRECIPITATION DURING CYCLE OF TEST: Not reported.

AMOUNT OF IRRIGATION APPLIED: None.

FERTILIZFR USED: N = 160 kg/ha; P_2O_5 = 100 kg/ha.

GENERAL DESCRIPTION OF CLIMATIC CONDITIONS DURING TEST: Mild winter, rainy spring, and a very dry summer.

DISEASE DEVELOPMENT: Not reported.

INSECT, WEED OR PEST PROBLEMS: Cereal leaf beetle.

DATE OF HARVEST: July 20, 1974.

AREA HARVESTED FOR YIELD: 4 square meters.

DATES WHEN DIFFERENT NOTES WERE TAKEN:
Not reported.

Correlation Coefficients

	Yield	Test weight	Protein	Flowering	Ripening	Plant height
Test weight	.37**					
Protein	-.21*	.31**				
Flowering	-.09	-.57**	-.38**			
Ripening	-.05	-.30**	-.15	.61**		
Plant height	-.19*	-.17	.07	.46**	.38**	
Lodging	-.44**	-.20*	.34**	.00	-.07	.45**

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

Table 21. Agronomic, grain quality, and disease data for the 30 cultivars in the Sixth International Winter Wheat Performance Nursery grown at Milano, Italy, 1974.

Cultivar	Yield q/ha	Test weight kg/hl	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.	Mildew Sev. %
Kavkaz	84.3	79.0	13.8	142	185	109	8	0	0-R	0	0	10
Aurora	82.8	81.5	14.1	139	184	103	10	0	0	0	0	7
Zlatna Dolina	81.9	81.1	13.6	132	183	88	1	0	0-R	0	0	21
Burgas 2	81.5	79.4	14.8	136	184	85	0	0	0-R	0	0	22
Sanja (Zg 5996/66)	79.7	79.9	13.7	133	183	81	0	0	0-R	0	0	28
Dwarf Bezostaya	79.6	78.9	13.5	138	183	70	0	0	0	0	0	57
Rousalka	76.3	91.5	14.0	128	184	82	0	0	0	0	0	0
NS732	76.0	76.6	13.0	130	183	69	0	0	0	0	0	41
Atlas 66	71.8	77.7	16.0	141	186	123	68	0	0	0	0	60
Maris Nimrod	70.4	68.9	12.8	148	187	101	15	0	0	0	0	68
Jubilar	68.3	71.8	12.8	149	186	115	14	17	MR-MS	0	0	92
Demar 4	67.7	82.8	13.4	136	183	91	3	31	MR-S	0	0	77
Dacia	66.4	77.9	15.4	139	183	114	75	0	0	0	0	65
Diplomat	65.9	76.9	12.2	148	188	113	0	4	R-MR	0	0	99
Bezostaya 1	63.5	81.7	14.2	138	183	93	24	0	0	0	0	52
Moldova	61.9	79.2	15.5	129	183	100	50	0	0	0	0	65
Caribo	60.6	73.2	12.5	148	187	112	28	36	MR-MS	13	R-S	94
Blueboy II	60.3	68.6	12.9	137	183	105	83	1	0-MS	0	0	94
Clarion	58.9	67.6	13.5	147	187	104	15	0	0	0	0	96
Carifen 12	56.9	63.5	12.1	145	184	81	14	12	MR-MS	0	0	84
Blueboy	56.8	68.5	12.6	137	182	108	73	0	0	0	0	95
Favorit	56.2	79.5	14.7	135	184	93	58	0	0-R	0	0	66
Lancota (NE701132)	55.5	80.2	15.8	140	185	116	88	0	0	0	0	31
Manella	55.0	69.3	14.0	146	185	105	83	46	MS	0	0	96
Likafen	53.3	73.9	12.3	145	184	101	18	1	0-MR	0	0	99
Bolal	50.5	79.3	13.3	135	184	106	88	10	0-MS	0	0	99
Zenith	49.9	67.9	14.3	147	185	105	38	6	0-MS	0	0	45
Lerma Rojo 64	49.2	79.8	16.2	127	183	96	53	0	0	0	0	91
Marimp 3	47.3	79.8	15.4	131	183	99	20	4	R-MR	0	0	75
Kirac 66	38.0	71.7	14.0	140	184	113	83	11	R-S	0	0	99
Mean	64.2	79.9	13.9	138.8	184.0	99.3	33.4	6.0		0.4		64.3
L.S.D. of cultivar means (.05)	20.9	2.8	1.1	2.8	1.7	7.7	26.7	--		--		--
Coefficient of variation (%)	23.2	2.6	5.7	1.4	0.7	5.5	56.8	--		--		--

ITALY

Rieti

COOPERATOR(S): G. Zitelli.

DATE OF PLANTING (EFFECTIVE GERMINATION): December 12, 1973.

PRECIPITATION DURING CYCLE OF TEST: 478 mm.

AMOUNT OF IRRIGATION APPLIED: None.

FERTILIZER USED: N = 152 kg/ha (NH_4NO_3), P_2O_5 = 120 kg/ha ($3Ca(H_2PO_4)_2$)

GENERAL DESCRIPTION OF CLIMATIC CONDITIONS DURING TEST: Not reported.

DISEASE DEVELOPMENT: Not reported.

INSECT, WEED OR PEST PROBLEMS: Not reported.

DATE OF HARVEST: 2 days after ripening according to variety, (July 12-20, 1974).

AREA HARVESTED FOR YIELD: 2 square meters.

DATES WHEN DIFFERENT NOTES WERE TAKEN:
Not reported.

Correlation Coefficients

	Yield	Test weight	Protein	Flowering	Ripening	Plant height
Test weight	.35**					
Protein	.24**	.44**				
Flowering	-.36**	-.45**	-.43**			
Ripening	-.36**	-.41**	-.18*	.65**		
Plant height	-.13	.14	.11	.27**	.33**	
Lodging	-.02	.27**	.33**	.03	-.05	.52**

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

Table 22. Agronomic, grain quality, and disease data for the 30 cultivars in the Sixth International Winter Wheat Performance Nursery grown at Rieti, Italy, 1974.

Cultivar	Yield q/ha	Test weight kg/hl	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.	Mildew Sev. %	Septoria Sev. %
Aurora	65.8	83.6	12.3	146	196	111	13	0	0	0	0	2	1
Marimp 3	63.6	78.5	11.4	139	192	100	19	84	MR-S	25	0-S	42	17
Rousalka	63.2	80.6	13.3	132	192	87	0	32	0-MR	51	R-MS	33	7
Demar 4	61.0	79.6	10.7	142	192	104	0	90	MR-S	62	MR-MS	15	1
Kavkaz	59.9	82.5	12.4	145	197	112	13	0	0	0	0	3	8
Favorit	57.8	80.9	12.1	141	192	111	50	27	0-MR	25	0-VS	8	18
Bolal	57.7	80.2	10.8	142	192	115	99	96	MR-S	30	0-VS	41	10
Blueboy II	57.5	77.4	10.6	144	192	107	0	0	0	15	0-VS	41	12
Dacia	55.8	81.1	11.5	143	192	115	13	12	0-MR	42	MR-S	32	11
Carifen 12	55.4	70.2	9.7	145	195	85	0	65	MR	69	R-S	22	2
Zlatna Dolina	55.3	79.1	11.2	140	192	86	0	7	0-MR	20	0-VS	5	17
Maris Nimrod	54.5	73.2	9.6	145	197	106	6	10	0-MR	32	0-Vs	13	6
Burqas 2	52.6	77.3	12.5	145	193	90	6	0	0	0	0	5	16
Bezostaya 1	52.5	82.0	10.9	144	196	105	13	5	0-MR	17	R-MS	7	15
Lerma Rojo 64	51.3	81.6	13.2	130	192	101	6	5	0-MR	8	0-S	63	0
NS732	51.1	77.7	12.4	138	192	63	0	25	0-MR	40	0-MS	38	16
Likafen	51.1	78.5	10.5	145	196	97	0	20	0-MR	35	0-VS	23	0
Sanja (Zg 5996/66)	50.9	79.4	11.5	140	192	75	0	12	0-MR	7	0-MR	2	13
Lancota (NE701132)	49.2	81.4	12.3	146	192	115	68	0	0	0	0	2	0
Manella	46.9	75.9	10.8	146	196	105	0	84	MR-MS	45	0-S	7	0
Moldova	46.9	80.5	12.9	133	192	112	0	27	0-MR	37	MR-VS	10	17
Dwarf Bezostaya	45.5	81.1	10.9	146	192	70	0	0	0	5	0-MR	8	20
Atlas 66	43.9	81.3	13.4	144	196	135	93	0	0	7	0-MR	5	0
Caribo	42.7	73.2	9.9	148	198	115	0	72	MR-S	55	MR-MS	15	0
Blueboy	41.8	76.1	9.4	144	192	104	6	47	R-MR	66	MR-VS	40	0
Clarion	40.2	68.5	11.2	154	199	104	6	18	0-MR	22	0-S	31	0
Jubilar	40.0	72.4	9.9	150	195	115	0	72	MR-MS	60	MR-MS	6	3
Kirac 66	38.6	80.1	11.9	145	196	128	99	87	MR-MS	60	MR-S	25	2
Diplomat	38.1	80.0	10.7	149	198	111	0	42	MR	45	MR-MS	17	0
Zenith	36.6	75.4	10.6	146	198	106	0	57	0-MR	52	R-VS	13	0
Mean	50.9	78.3	11.3	143.1	194.0	102.9	17.0	33.2		31.1		19.1	7.1
L.S.D. of cultivar means (.05)	8.6	2.7	0.9	1.3	1.5	5.7	20.0	--		--		--	--
Coefficient of variation (%)	12.0	2.5	5.8	0.7	0.5	4.0	84.0	--		--		--	--

JAPAN

Morioka

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

DATE OF PLANTING (EFFECTIVE GERMINATION): September 24, 1973.

PRECIPITATION DURING CYCLE OF TEST: 1199.5 mm (September 24, 1973 - July 31, 1974).

AMOUNT OF IRRIGATION APPLIED: None.

FERTILIZER USED: Preplant: N = 90 kg/ha, P_2O_5 = 144 kg/ha, K_2O = 108 kg/ha.
Spring: N = 20.5 kg/ha.

GENERAL DESCRIPTION OF CLIMATIC CONDITIONS DURING TEST: Snow fall was heavy, and the field was covered with snow abnormally long (120 days). Frequent rains and cloudy days hindered normal ripening.

DISEASE DEVELOPMENT: Severe damage by snow mold. Leaf rust developed as normal.

INSECT, WEED OR PEST PROBLEMS: None.

DATE OF HARVEST: July 17, 22, August 4, 1974.

AREA HARVESTED FOR YIELD: 1.98 square meters.

DATES WHEN DIFFERENT NOTES WERE TAKEN:
Winter survival - April 22, 1974
Rusts - July 5, 1974
Shattering - August 3, 1974

Correlation Coefficients

	Yield	Test weight	Protein	Flowering	Ripening	Plant height	Lodging	Shattering
Test weight	.68**							
Number of observations	99							
Protein	-.38**	-.36**						
Number of observations	111	99						
Flowering	-.35**	-.81**	.38**					
Number of observations	114	99	111					
Ripening	-.15	-.65**	.43**	.84**				
Number of observations	113	99	110	113				
Plant height	.52**	.21*	-.10	.09	.28**			
Number of observations	114	99	111	114	113			
Lodging	.06	.21*	-.24**	-.11	-.13	.44**		
Number of observations	114	99	111	114	113	114		
Shattering	.17	.18	-.07	-.32**	-.17	.13	-.06	
Number of observations	114	99	111	114	113	114	114	
Winter survival	.91**	.58**	-.37**	-.31**	-.15	.36**	.04	.07
Number of observations	120	99	111	114	113	114	114	114

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

Table 23. Agronomic, grain quality, and disease data for the 30 cultivars in the Sixth International Winter Wheat Performance Nursery grown at Morioka Iwate, Japan, 1974.

Cultivar	Yield q/ha	Test weight kg/hl	Protein %	Date of Flowering (days from Jan. 1)	Date of Ripening (days from Jan. 1)	Plant height cm	Lodging cm	Shattering %	Winter survival %	Rust Leaf Sev. %	Rust Leaf Resp.	Rust Stem Sev. %	Rust Stem Resp.
Kavkaz	49.4	71.2	17.5	165	206	116	0	0	92	2	0-R	0	0
Aurora	47.6	75.1	17.4	163	203	108	0	0	97	3	VR-R	0	0
Bezostaya 1	42.5	78.0	16.7	159	200	110	0	0	93	4	VR-M	0	0
Burgas 2	40.4	73.3	16.7	162	202	94	0	0	86	0	0-VR	0	0
Moldova	39.6	76.7	18.8	159	199	122	10	11	64	2	VR-R	1	0-S
Dacia	37.3	74.5	18.8	162	201	117	3	0	66	2	VR-MR	0	0-S
Dwarf Bezostaya	35.9	70.8	15.4	161	205	78	0	0	90	5	R	0	0
Favori	33.5	76.0	18.6	160	201	111	30	0	73	45	MS-S	0	0-S
Blueboy II	32.7	65.7	16.1	162	207	122	3	14	57	5	0-R	0	0
Manella	32.3	64.9	16.5	169	208	110	5	0	54	10	MR-MS	0	0
Bolal	31.0	78.7	14.6	159	198	127	82	0	60	99	S-VS	0	0
Lancota (NE701132)	30.0	68.2	18.1	164	207	118	25	0	21	4	R	0	0
Blueboy	27.3	65.7	13.7	163	204	121	23	0	44	7	R-M	10	0-S
Zenith	27.3	62.0	16.8	169	207	114	45	0	63	54	S-VS	1	0-S
Clarion	24.7	56.1	19.3	172	211	103	0	0	56	3	R-MR	0	0-S
Rousalka	23.5	74.2	16.8	156	196	82	0	11	39	0	0-VR	0	0
Diplomat	20.6	61.6	18.6	174	213	113	0	0	42	46	S	0	0
Caribo	13.7	51.5	18.1	173	211	107	0	0	28	23	S	0	0
Likafen	13.3	64.9	16.6	166	204	96	0	0	18	36	MS-S	0	0
Sanja (Zg 5996/66)	12.9	69.5	16.9	162	199	73	0	0	14	0	0	0	0-S
Zlatna Dolina	12.8	70.0	17.2	162	198	73	0	0	30	0	0-VR	0	0
Demar 4	11.4	64.6	17.7	162	199	90	0	0	18	82	S-VS	0	0
Jubilar	10.7	53.3	18.1	173	212	108	3	0	15	52	S	0	0
Maris Nimrod	4.1	50.5	20.6	176	212	87	0	0	10	11	M-MS	0	0
NS732	3.7	62.5	16.4	157	196	64	0	0	10	65	S-VS	0	0
Atlas 66	2.0	--	21.7	164	209	103	0	0	1	3	0-M	0	0
Carifen 12	1.9	39.3	18.3	170	204	70	0	0	12	73	S-VS	0	0
Kirac 66	1.4	--	18.0	166	204	113	50	0	7	99	S	0	0
Marimp 3	0.6	--	22.4	163	210	78	0	0	0	52	S	0	0
Lerma Rojo 64	0.0	--	--	--	--	--	--	--	0	49	0-S	0	0
Mean	21.1	66.9	17.6	164.5	204.1	101.3	9.7	1.3	41.6	27.9		0.4	
L.S.D. of cultivar means (.05)	4.5	3.0	1.0	1.3	1.8	4.8	18.5	3.2	12.5	--		--	
Coefficient of variation (%)	14.6	3.1	4.0	0.6	0.6	3.4	135.6	177.5	21.4	--		--	
Local cultivar													
Nanbukomugi	34.4	78.4	--	153	192	107	0	0	66	99	S	0	0

KOREA

Suwon

COOPERATOR(S): H. O. Choi.

DATE OF PLANTING (EFFECTIVE GERMINATION): October 16, 1973.

PRECIPITATION DURING CYCLE OF TEST: 748.8 mm.

AMOUNT OF IRRIGATION APPLIED: None.

FERTILIZER USED: N = 150 kg/ha, P_2O_5 = 80 kg/ha, K_2O = 80 kg/ha.

GENERAL DESCRIPTION OF CLIMATIC CONDITIONS: Not reported.

DISEASE DEVELOPMENT: Not reported.

INSECT, WEED OR PEST PROBLEMS: Hand weeded once.

DATE OF HARVEST: July 10, 1974.

AREA HARVESTED FOR YIELD: 1.5 square meters.

DATES WHEN DIFFERENT NOTES WERE TAKEN:
Winter survival - March 2, 1974
Stripe rust - June 18, 1974
Leaf rust - June 18, 1974
Stem rust - June 20, 1974

Correlation Coefficients

	Yield	Test weight	Protein	Flowering	Ripening	Plant height	Lodging
Test weight	.59**						
Protein	-.02	.30**					
Flowering	-.53**	-.54**	-.23*				
Ripening	-.36**	-.41**	.02	.58**			
Plant height	-.22*	-.14	.10	.34**	.16		
Lodging	.01	.10	.47**	-.25**	-.15	.37**	
Winter survival	.18	.15	.09	.18*	.10	.09	.02

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

Table 24. Agronomic, grain quality, and disease data for the 30 cultivars in the Sixth International Winter Wheat Performance Nursery grown at Suwon, Korea, 1974.

Cultivar	Yield q/ha	Test weight kg/hl	Protein %	Date of Flowering (days from Jan. 1)	Date of Ripening (days from Jan. 1)	Plant height cm	Lodging %	Winter survival %	Rust: Stripe Sev. %	Rust: Stripe Resp.	Rust: Leaf Sev. %	Rust: Leaf Resp.
Sanja (Zg 5996/66)	55.7	76.6	12.8	145	183	75	0	90	25	R-S	26	R-MR
Blueboy II	55.1	70.3	13.9	148	185	105	70	93	25	R-MS	62	MS-S
Zlatna Dolina	53.6	76.7	11.8	146	174	80	1	83	6	R	15	R-MR
Rousalka	53.3	77.5	14.2	143	184	84	0	98	13	R-S	7	R-MR
Dacia	53.2	74.0	14.8	148	184	115	73	100	45	MS-S	40	S
Bezostaya 1	51.3	77.6	13.6	150	184	106	5	98	0	R	23	R-MR
Burgas 2	50.6	72.6	14.3	149	185	91	6	100	10	R-MR	35	R-MR
Marimp 3	47.2	76.5	13.6	147	182	99	0	100	70	MS-S	62	MS-S
Bolal	46.8	77.7	14.4	147	184	107	92	95	7	R-MR	30	R-MR
Blueboy	46.3	65.4	11.0	149	186	105	50	83	74	S	98	S
Aurora	45.6	74.8	15.1	152	186	106	35	100	0	R	4	R-S
Demar 4	45.1	78.3	14.1	148	183	92	0	93	69	MR-S	50	MR-MS
Moldova	44.0	77.5	14.7	144	181	110	79	100	17	MR-S	35	R-S
NS732	43.7	73.4	13.4	147	185	56	0	88	60	S	35	MS-S
Dwarf Bezostaya	42.2	68.5	14.6	150	189	62	0	90	3	R	7	R
Favorit	41.5	75.3	15.4	147	183	96	88	83	33	MR-S	62	MS-S
Caribo	41.3	65.0	12.2	158	187	--	0	70	12	R-MS	7	R-MR
Maris Nimrod	38.1	63.4	12.4	157	190	91	43	100	2	R	47	MR-MS
Kavkaz	37.0	70.8	14.8	154	187	109	23	100	0	R-MR	11	R-MR
Atlas 66	36.9	72.2	16.4	150	184	112	72	90	10	R	10	R
Zenith	33.8	71.0	12.8	157	190	103	23	85	0	R	18	R-MR
Carifen 12	33.6	63.0	12.4	155	186	81	1	100	45	MS-S	49	S
Lancota (NE701132)	33.2	70.2	15.1	149	182	103	92	65	12	R-MR	22	R-MS
Lerma Rojo 64	32.9	71.3	14.0	143	184	89	0	33	6	R-MR	17	R-MR
Jubilar	32.8	64.8	13.1	155	192	113	1	93	0	R	35	R-MR
Manella	32.0	70.8	13.5	155	187	100	19	95	50	MR-S	45	MS-S
Likafen	31.1	69.2	13.6	152	188	100	0	100	6	R-S	50	MS-S
Clarion	28.3	64.0	13.8	157	190	106	0	78	12	R-MR	30	MR-MS
Kirac 66	27.4	63.5	14.4	150	185	111	87	98	42	MR-S	84	MS-S
Diplomat	23.5	67.8	13.4	159	194	112	3	100	50	S	62	MS-S
Mean	41.2	71.3	13.8	150.3	185.4	97.6	27.4	89.8	23.5		35.9	
L.S.D. of cultivar means (.05)	7.8	5.5	1.0	1.0	4.8	9.1	24.6	7.2	--		--	
Coefficient of variation (%)	13.5	5.5	5.3	0.5	1.8	6.6	63.9	5.7	--		--	
Local cultivars												
Yungkwan	46.5	70.8	--	148	183	87	55	99	47	R-S	67	R-S
Shinkwan	43.7	71.3	--	144	183	100	95	100	30	MS-S	80	S

LEBANON

Beirut

COOPERATOR(S): Y. Klaimi; A. Program.

DATE OF PLANTING (EFFECTIVE GERMINATION): December 6, 1973.

PRECIPITATION DURING CYCLE OF TEST: 490 mm.

AMOUNT OF IRRIGATION APPLIED: 2 applications (no amount reported).

FERTILIZER USED: N = 150 kg/ha, P_2O_5 = 100 kg/ha.

GENERAL DESCRIPTION OF CLIMATIC CONDITIONS DURING TEST: Adequate rainfall up to mid April. Temperatures were normal.

DISEASE DEVELOPMENT: Normal stripe rust development. Leaf and stem rusts were almost totally absent.

INSECT, WEED OR PEST PROBLEMS: None.

DATE OF HARVEST: July 13, 1974.

AREA HARVESTED FOR YIELD: 2.7 square meters.

DATES WHEN DIFFERENT NOTES WERE TAKEN:
Stripe rust - early June, 1974
Agronomic score - late June, 1974

Correlation Coefficients

	Yield	Test weight	Protein	Ripening
Test weight	.13			
Number of observations	25			
Protein	-.56**	-.41*		
Number of observations	120	25		
Ripening	-.26	-.63**	.45*	
Number of observations	30	25	30	
Plant height	.52**	.19	-.12	-.11
Number of observations	30	25	30	30

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

Table 25. Agronomic, grain quality, and disease data for the 30 cultivars in the Sixth International Winter Wheat Performance Nursery grown at Beirut, Lebanon, 1974.

Cultivar	Yield g/ha	Test[a] weight kg/hl	Protein %	Date of[a] ripening days from Jan. 1	Plant[a] height cm	Stripe rust[a] Sev. %	Stripe rust[a] Resp.	Date of[a] heading days from Jan. 1	Agronomic[a] score 1-9
Marimp 3	18.5	76.8	15.9	160	80	0	0	123	6
Moldova	16.6	75.0	17.9	155	70	1	R	123	7
Bolal	16.4	78.7	15.4	162	70	1	MR	126	5
Zlatna Dolina	16.3	75.0	15.3	162	65	10	MS	125	7
Lerma Rojo 64	16.2	76.6	15.0	153	75	0	0	119	6
Rousalka	16.0	76.6	16.7	159	70	0	0	122	5
Blueboy II	15.1	73.2	15.6	169	75	0	0	130	6
Zenith	13.2	70.0	18.2	178	65	0	0	145	7
Favorit	13.2	74.6	18.8	163	70	0	0	130	6
Kavkaz	13.2	74.9	16.7	167	70	0	0	131	6
Aurora	13.1	75.7	18.1	167	60	0	0	133	7
Carifen 12	12.9	65.0	17.3	170	50	0	0	139	8
Burgas 2	12.8	73.8	16.8	168	70	0	0	135	7
Lancota (NE701132)	12.5	74.5	17.5	167	70	0	0	134	7
Dwarf Bezostaya	12.2	76.4	14.8	170	45	0	0	135	9
Dacia	11.8	73.7	17.5	167	70	0	0	131	7
Clarion	11.2	68.0	19.2	177	80	0	0	145	6
Bezostaya 1	10.8	76.0	15.6	165	60	0	0	131	8
Maris Nimrod	10.6	68.7	15.9	175	65	0	0	142	7
Demar 4	10.2	72.3	16.1	165	75	0	0	129	6
Sanja (Zg 5996/66)	10.1	72.9	15.8	163	60	0	0	127	8
Kirac 66	10.1	75.1	17.3	169	80	0	0	135	6
Blueboy	9.4	71.6	16.0	168	60	0	0	133	8
NS732	8.9	72.4	15.9	163	50	0	0	125	6
Atlas 66	8.6	70.4	19.4	165	70	10	S	131	7
Likafen	8.2	--	17.1	170	60	60	S	135	8
Caribo	7.3	--	18.5	178	70	1	MS	145	7
Diplomat	6.5	--	18.4	177	70	0	0	145	7
Manella	4.0	--	20.0	175	55	0	0	140	7
Jubilar	3.5	--	19.5	178	70	0	0	145	8
Mean	11.6	73.5	17.1	167.5	66.7	2.8		133.0	6.8
L.S.D. of cultivar means (.05)	8.1	--	1.7	--	--	--		--	--
Coefficient of variation (%)	49.8	--	7.1	--	--	--		--	--

a) One replication only.

MEXICO

Toluca

COOPERATOR(S): CIMMYT.

DATE OF PLANTING (EFFECTIVE GERMINATION): November 6, 1973.

PRECIPITATION DURING CYCLE OF TEST: 194.25 mm (November, 1973 - June, 1974).

AMOUNT OF IRRIGATION APPLIED: 194.2 mm.

FERTILIZER USED: N = 200 kg/ha, P_2O_5 = 114.5 kg/ha.

GENERAL DESCRIPTION OF CLIMATIC CONDITIONS DURING TEST: Mild winter with some frost. Early in the cycle there was little rainfall with low wind speed. In June and July rainfall increased with strong winds causing heavy lodging.

DISEASE DEVELOPMENT: Loose smut, snow mold, bacterial blight of barley and stripe rust were clearly developed.

INSECT, WEED OR PEST PROBLEMS: Some problems with aphids and birds.

DATE OF HARVEST: July, 1974.

AREA HARVESTED FOR YIELD: 3 square meters.

DATES WHEN DIFFERENT NOTES WERE TAKEN:
Frost damage - April 30, 1974
Flowering - May 4, 14, 22; June 2, 12, 1974
Stripe rust - May 26, 1974
Leaf fire - May 27, 1974
Height - June 22, 1974
Lodging - June 22, 1974

Correlation Coefficients

	Yield	Protein	Flowering	Plant height	Lodging
Protein	-.23*				
Number of observations	120				
Flowering	-.06	-.52**			
Number of observations	120	120			
Plant height	-.22	-.28*	.31*		
Number of observations	60	60	60		
Lodging	-.38**	.13	.08	.47**	
Number of observations	60	60	60	60	
Frost	-.16	.35**	-.49**	-.32*	-.22
Number of observations	120	120	120	60	60

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

Table 26. Agronomic, grain quality, and disease data for the 30 cultivars in the Sixth International Winter Wheat Performance Nursery grown at Toluca, Mexico,[a] 1974.

Cultivar	Yield q/ha	Protein %	Date of flowering days from Jan. 1	Plant[b] height cm	Lodging[b] %	Frost damage 0-9	Rust[b] Stripe Sev. %	Rust[b] Stripe Resp.	Rust[b] Leaf Sev. %	Rust[b] Leaf Resp.	Rust[b] Stem Sev. %	Rust[b] Stem Resp.	Leaf[b] fire 0-9	Tip[bc] fire Resp.
Rousalka	43.1	17.7	113	83	55	2	0	0-R	20	MS-S	45	S	7	L-H
Likafen	37.8	17.4	130	98	58	2	5	R-MR	30	MS-S	45	MS-S	5	L-M
Zenith	31.6	15.0	144	103	78	2	10	0-MR	35	MS	45	S	3	M
Dwarf Bezostaya	29.9	15.1	129	75	5	2	3	R-MR	15	0-MS	30	S	7	M
Burgas 2	29.4	16 7	128	95	10	2	7	MR	25	MR-MS	5	R-MS	5	L
Caribo	25.3	13.3	146	113	68	1	15	0-MR	35	MS-S	40	MS-S	4	L
NS732	25.3	15.9	115	73	0	3	10	MR	0	0	20	R-S	7	M
Clarion	24.2	14.3	152	108	40	1	5	0-MR	15	MR-MS	40	MS	4	M
Maris Nimrod	23.5	13.7	143	103	80	2	1	R	35	MS	45	S	3	L-M
Blueboy	23.0	15.3	127	98	83	2	15	R-MR	25	MS-S	35	S	5	L-M
Demar 4	22.9	16.5	132	103	45	2	10	MR	0	0	40	MS-S	4	M
Moldova	22.8	18.5	116	103	58	2	10	R-MR	0	0-MS	20	MS-S	7	L-M
Zlatna Dolina	22.7	16.3	146	85	40	2	5	R-MR	0	0	15	MS	7	L-M
Dacia	21.6	17.2	127	108	73	1	1	R	0	0	15	MS-S	7	L-M
Sanja (Zg 5996/66)	21.4	16.5	122	83	38	2	1	MR	0	0	12	MR-MS	7	L-M
Carifen 12	21.3	14.3	135	90	50	2	7	MR	40	MS-S	25	MS	4	L-M
Blueboy II	20.7	17.2	124	98	75	2	35	MR-S	32	MR-S	5	R-S	4	L
Diplomat	19.6	14.8	157	113	55	1	5	MR-MS	55	S	1	R	3	L
Bezostaya 1	17.8	16.3	128	103	90	1	15	MR	0	0	25	R-S	6	M
Manella	17.1	13.9	155	118	55	2	1	R	35	MS-S	20	MS	3	L-M
Aurora	16.9	16.4	135	100	58	2	22	MR	15	0-S	20	MS	4	L-M
Lancota (NE701132)	16.8	17.2	127	100	85	2	10	MR	25	0-S	30	MS-S	5	L-M
Favorit	15.3	19.4	128	93	93	2	35	MR-MS	10	0-MS	25	R-S	7	L-M
Marimp 3	15.2	16.7	117	90	78	3	5	R-MR	20	MR-S	25	MR-S	8	M-H
Lerma Rojo 64	13.9	17.9	96	93	15	4	35	MR-MS	10	0-MS	35	MS-S	7	M
Atlas 66	13.9	18.3	128	103	88	3	45	MR-MS	0	0	20	MS-S	5	L-M
Kavkaz	12.9	17.3	146	108	85	2	30	MR-MS	0	0-MR	12	MR-MS	3	L-M
Jubilar	11.9	15.1	156	103	60	2	20	R-MR	50	S	35	MS-S	4	L-M
Bolal	6.3	16.4	126	103	93	2	65	MS-S	10	0-MS	17	MS-S	6	L-M
Kirac 66	5.0	18.4	128	95	90	3	10	R-MR	35	MS-S	25	MS-S	7	M
Mean	21.0	16.3	131.8	97.7	59.8	1.9	14.6		19.1		25.7		5.3	
L.S.D. of cultivar means (.05)	7.3	0.8	13.4	9.9	36.6	0.5	--		--		--		--	
Coefficient of variation (%)	24.8	3.4	7.2	5.0	29.9	17.3	--		--		--		--	

a) Planted November 6, 1973.
b) Two replications only.
c) L = low
M = medium
H = high

MEXICO

Toluca

COOPERATOR(S): CIMMYT.

DATE OF PLANTING (EFFECTIVE GERMINATION): November 22, 1973.

PRECIPITATION DURING CYCLE OF TEST: 194.25 mm (November, 1973 - June, 1974).

AMOUNT OF IRRIGATION APPLIED: 194.2 mm.

FERTILIZER USED: N = 200 kg/ha, P_2O_5 = 114.5 kg/ha.

GENERAL DESCRIPTION OF CLIMATIC CONDITIONS DURING TEST: Mild winter with some frost. Early in the cycle there was little rainfall with low wind speed. In June and July rainfall increased with strong winds causing heavy lodging.

DISEASE DEVELOPMENT: Loose smut, snow mold, bacterial blight of barley, and stripe rust were clearly developed.

INSECT, WEED OR PEST PROBLEMS: Some problems with aphids and birds.

DATE OF HARVEST: July, 1974.

AREA HARVESTED FOR YIELD: 3 square meters.

DATES WHEN DIFFERENT NOTES WERE TAKEN:
Frost damage - April 30, 1974
Flowering - May 4, 14, 22; June 2, 12, 1974
Stripe rust - May 26, 1974
Leaf fire - May 27, 1974
Height - June 22, 1974
Lodging - June 22, 1974

Correlation Coefficients

	Yield	Flowering	Plant height	Lodging
Flowering	-.20*			
Number of observations	120			
Plant height	-.20	.33**		
Number of observations	60	60		
Lodging	-.48**	-.14	.54**	
Number of observations	60	60	60	
Frost	-.20*	-.51**	-.19	.29*
Number of observations	120	120	60	60

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

Table 27. Agronomic, grain quality, and disease data for the 30 cultivars in the Sixth International Winter Wheat Performance Nursery grown at Toluca, Mexico,[a] 1974.

Cultivar	Yield g/ha	Date of flowering days from Jan. 1	Plant[b] height cm	Lodging[b] %	Frost damage 0-9	Rust[b] Stripe Sev. %	Stripe Resp.	Leaf Sev. %	Leaf Resp.	Stem Sev. %	Stem Resp.	Leaf[b] fire 0-9	Tip[bc] fire Resp.
Rousalka	44.3	121	103	5	2	15	MR	0	0	22	MS	7	L
Likafen	38.9	136	120	30	1	3	R-MR	0	0	5	MS	5	M
Burgas 2	36.4	132	113	8	1	10	R-MR	20	MS-S	10	MR-MS	5	M
Zenith	25.9	147	115	38	1	12	MR	25	MR-MS	35	MS-S	5	L-M
Zlatna Dolina	25.7	126	95	5	1	25	MR	0	0-MR	25	MS	5	L-M
Maris Nimrod	25.6	147	113	60	1	7	R	40	MS-S	25	MS-S	3	L-M
Blueboy II	25.1	126	115	78	2	6	R	0	0-MR	3	R-MS	4	L-M
Blueboy	24.8	128	115	85	2	17	MR	5	0-MS	25	MS-S	5	M
Caribo	23.7	147	120	20	1	20	MR	45	MS-S	15	MR-S	5	M
Sanja (Zg 5996/66)	23.4	126	95	5	2	27	R-MR	0	0-MR	7	MR-MS	5	L-M
Dwarf Bezostaya	22.9	136	75	0	2	12	MR-MS	10	MR	25	MR-MS	4	M
Demar 4	22.4	134	110	45	1	7	R-MR	30	MR	35	MS-S	5	L-M
NS732	22.4	123	75	0	2	7	R	10	MR-MS	50	MS-S	7	M
Dacia	22.2	127	118	80	1	5	MR	2	0-MR	45	S	2	L-M
Bezostaya I	21.5	133	115	78	1	12	R-MR	0	0	20	MS-S	3	M
Marimp 3	21.3	124	100	65	2	10	MR	10	0-S	25	MR-S	7	M-H
Favorit	17.4	127	113	75	1	22	R-MS	15	MS	30	MR-MS	5	M
Carifen 12	17.3	142	100	10	1	15	R	0	0	40	MS-S	4	L-M
Moldova	16.3	125	120	75	2	20	MR	10	0-MS	50	MS	4	M
Lancota (NE701132)	15.0	128	118	85	2	25	MR-MS	10	MR-MS	1	MR-MS	4	M
Atlas 66	14.9	129	120	85	2	55	MR-MS	0	0-MS	3	MR-MS	7	M
Manella	13.9	159	118	63	1	6	0-MR	15	MR-MS	30	MR-S	2	L-M
Aurora	13.4	136	115	33	1	5	R-MR	15	MS	3	0-MR	6	M
Clarion	13.3	158	118	35	1	7	R	35	MR-S	50	MS-S	2	M
Jubilar	12.9	161	113	55	1	20	R-MR	25	MR-MS	17	MS-S	5	L-M
Kavkaz	11.8	148	115	75	1	5	R	0	0	3	MS	5	VL-M
Diplomat	9.7	168	120	45	1	3	R	55	S	20	MR-MS	2	L-M
Lerma Rojo 64	9.4	102	98	95	3	60	MR-S	20	MS-S	10	MR-MS	5	M
Kirac 66	8.9	129	118	93	2	30	MR	30	S	15	MR-S	7	M
Bolal	8.9	128	120	93	2	85	S	0	0	25	MS-S	4	L-M
Mean	20.3	135.0	109.9	50.5	1.4	18.4		14.2		22.3		4.6	
L.S.D. of cultivar means (.05)	7.1	2.6	7.3	28.9	0.5	--		--		--		--	
Coefficient of variation (%)	25.0	1.4	3.2	28.0	25.2	--		--		--		--	

a) Planted November 22, 1973.
b) Two replications only.
c) L = low
M = medium
H = high

NEPAL

Kathmandu

COOPERATOR(S): M. P. Panth; T. Pokheral; B. K. Thapa.

DATE OF PLANTING (EFFECTIVE GERMINATION): December 9, 1973.

PRECIPITATION DURING CYCLE OF TEST: 76 mm.

AMOUNT OF IRRIGATION APPLIED: None.

FERTILIZER USED: N = 100 kg/ha, P_2O_5 = 60 kg/ha, K_2O = 40 kg/ha.

GENERAL DESCRIPTION OF CLIMATIC CONDITIONS DURING TEST: Weather was favorable for plant growth. Rainfall was light after heading. Weather was good from maturity to harvest.

DISEASE DEVELOPMENT: Stem, leaf and stripe rust developed after heading.

INSECT, WEED OR PEST PROBLEMS: Not reported.

DATE OF HARVEST: May 15 - June 4, 1974

AREA HARVESTED FOR YIELD: 3 square meters.

DATES WHEN DIFFERENT NOTES WERE TAKEN:
Flowering - April 10 - May 5, 1974
Diseases - April 11, 18; May 4, 1974
Plant height - May 8, 1974
Shattering - June 14, 1974

Correlation Coefficients

	Yield	Ripening	height	Lodging	Shattering
Ripening	-.35**				
Number of observations	120				
Plant height	.20	.07			
Number of observations	30	30			
Lodging	.19	-.25	.42*		
Number of observations	30	30	30		
Shattering	.26	-.17	-.10	.16	
Number of observations	30	30	30	30	
1000-kernel weight	.77*	-.41**	.07	.02	.08
Number of observations	116	116	29	29	29

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

Table 28. Agronomic, grain quality, and disease data for the 30 cultivars in the Sixth International Winter Wheat Performance Nursery grown at Kathmandu, Nepal, 1974.

Cultivar	Yield q/ha	Date of ripening days from Jan. 1	Plant[a] height cm	Lodging[a] %	Shattering[a] %	1000-kernel weight gm	Date of heading days from Jan. 1	Rust[a] Leaf Sev. %	Rust[a] Leaf Resp.	Rust[a] Stem Sev. %	Rust[a] Stem Resp.
Lancota (NE701132)	33.5	169	96	1	1	35.3	134	0	0	5	MS
Bolal	33.6	162	94	4	15	37.1	129	30	S	60	S
Burgas 2	33.0	167	77	1	2	37.5	130	0	0	0	0
Blueboy II	32.5	165	86	1	25	31.5	128	0	0	40	S
Dacia	29.9	167	76	1	1	38.6	131	60	S	99	S
Likafen	28.2	169	76	1	10	33.5	131	0	0	10	S
Kirac 66	27.2	169	95	1	2	36.1	131	30	S	5	MS
Kavkaz	26.9	173	82	1	0	39.3	136	0	0	0	0
Aurora	26.6	169	83	1	0	37.8	134	0	0	0	0
Marimp 3	25.9	158	81	1	0	29.2	126	5	S	10	S
Lerma Rojo 64	25.1	147	85	2	0	38.2	119	0	0	99	S
Atlas 66	24.2	164	98	3	0	30.4	130	5	S	1	S
Favorit	24.2	163	86	1	0	39.4	130	40	S	80	S
Moldova	23.6	161	94	1	1	37.9	129	0	0	80	S
Rousalka	23.4	161	64	1	0	39.0	131	0	0	8	MS
Demar 4	23.4	167	79	1	0	25.2	130	0	0	99	S
Bezostaya 1	22.9	167	83	1	0	37.3	133	0	0	10	S
Sanja (Zg 5996/66)	21.6	164	58	1	1	28.8	130	0	0	0	0
Zlatna Dolina	21.2	160	62	1	1	32.7	129	5	S	80	S
Blueboy	20.5	159	89	2	0	30.4	129	0	0	0	0
NS732	19.5	159	54	1	25	29.4	125	0	0	99	S
Dwarf Bezostaya	15.3	168	50	1	0	29.9	134	0	0	0	0
Manella	13.8	168	72	1	0	23.0	139	0	0	99	S
Caribo	11.7	174	86	1	0	20.6	142	0	0	99	S
Diplomat	10.6	181	88	1	0	25.9	133	5	S	99	S
Maris Nimrod	9.1	171	75	1	0	--	143	1	S	99	S
Zenith	7.0	174	84	1	2	17.2	138	1	S	99	S
Clarion	6.5	176	73	1	0	14.6	138	99	S	99	S
Jubilar	4.8	175	92	2	0	15.8	139	0	0	99	S
Carifen 12	4.6	167	57	1	1	19.3	136	0	0	99	S
Mean	21.0	166.5	79.2	1.3	2.9	30.7	132.2	9.4		52.6	
L.S.D. of cultivar means (.05)	6.0	5.7	--	--	--	2.4	8.2	--		--	
Coefficient of variation (%)	20.3	2.4	--	--	--	5.5	4.4	--		--	

a} Based on one replication only.

NETHERLANDS

Wageningen

COOPERATOR(S): A. C. Zeven.

DATE OF PLANTING (EFFECTIVE GERMINATION): October 26, 1973.

PRECIPITATION DURING CYCLE OF TEST: 520.1 mm.

AMOUNT OF IRRIGATION APPLIED: Not reported.

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

GENERAL DESCRIPTION OF CLIMATIC CONDITIONS DURING TEST: Very soft winter, very dry srping, normal summer.

DISEASE DEVELOPMENT: Most varieties were attacked by mildew, several by leaf rust, and a few by stripe rust.

INSECT, WEED OR PEST PROBLEMS: None.

DATE OF HARVEST: July 23 - August 9, 1974.

AREA HARVESTED FOR YIELD: 4.5 square meters.

DATES WHEN DIFFERENT NOTES WERE TAKEN:
Winter survival - March 27, 1974
Mildew - June 27, 1974
Height - June 27, 1974
Lodging - July 2, 1974

Correlation Coefficients

	Yield	Test weight	Protein	Flowering	Ripening	Plant height	Lodging	Shattering
Test weight	-.05							
Protein	-.78**	.07						
Flowering	.48**	.08	-.55**					
Ripening	.52**	-.20*	-.50**	.44**				
Plant height	.04	.23*	-.09	.41**	-.17			
Lodging	-.58**	.19*	.57**	-.15	-.50**	.38**		
Shattering	.10	-.44**	-.01	-.13	.36**	-.32**	-.23*	
Winter survival	.50**	.02	-.44**	.40**	.37**	.11	-.32**	-.08

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

Table 29. Agronomic, grain quality, and disease data for the 30 cultivars in the Sixth International Winter Wheat Performance Nursery grown at Wageningen, The Netherlands, 1974.

Cultivar	Yield q/ha	Test weight kg/hl	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. %	Mildew Sev. %
Caribo	60.7	78.0	8.9	160	218	113	0	9	95	11	12
Carifen 12	60.4	73.3	10.3	157	209	85	0	21	90	0	18
Clarion	60.2	76.5	9.3	161	221	103	0	5	95	5	13
Maris Nimrod	59.8	77.0	8.9	156	218	102	0	5	90	1	0
Aurora	59.2	81.8	10.8	157	218	103	0	22	95	0	13
Manella	59.2	78.5	9.8	160	218	109	0	10	95	5	[illegible]
Demar 4	59.2	79.5	10.5	148	218	102	0	21	90	1	3
Kavkaz	56.8	72.5	10.6	157	218	112	0	30	94	2	1
Jubilar	55.2	78.5	10.4	163	221	105	0	15	94	6	11
Zenith	53.1	81.8	10.7	162	218	108	0	5	90	3	1
Bezostaya 1	52.3	82.3	11.3	150	206	108	5	2	95	0	6
Blueboy	51.5	78.3	9.8	153	210	111	3	9	91	0	23
Zlatna Dolina	49.8	79.3	11.1	148	206	89	0	11	91	2	5
Dwarf Bezostaya	49.0	82.0	11.0	150	218	74	0	4	95	0	6
Sanja (Zg 5996/66)	49.0	78.0	11.0	147	218	82	0	20	90	0	10
Diplomat	48.7	80.3	10.7	163	221	111	0	14	93	0	26
Marimp 3	47.6	79.8	11.1	146	206	102	1	14	90	0	2
Likafen	47.0	79.5	10.2	155	218	103	0	21	90	0	22
Blueboy II	47.0	79.8	11.6	154	212	111	19	6	90	0	28
Burgas 2	44.6	80.3	12.6	156	217	86	0	15	90	0	1
Dacia	43.6	82.0	11.3	154	206	112	4	5	91	0	10
Favorit	39.9	81.5	13.3	148	210	106	34	8	90	3	7
Rousalka	35.7	80.0	13.9	146	210	84	0	6	91	0	15
Lancota (NE701132)	35.0	81.3	13.0	157	206	114	39	2	90	0	12
Atlas 66	34.9	82.0	13.6	154	210	117	55	15	90	0	6
Bolal	34.7	81.0	12.3	153	205	108	75	10	90	6	16
Kirac 66	33.7	79.0	13.0	154	210	120	65	6	90	0	31
Moldova	33.2	76.8	14.4	147	210	110	30	16	91	0	12
NS732	31.4	68.8	13.5	142	218	65	0	33	89	0	2
Lerma Rojo 64	28.9	79.5	14.3	142	204	102	38	6	86	0	28
Mean	47.4	78.9	11.4	153.3	213.2	101.8	12.2	12.2	91.4	1.5	11.9
L.S.D. of cultivar means (.05)	6.0	4.6	0.8	2.9	1.0	6.0	13.4	2.9	2.1	--	--
Coefficient of variation (%)	9.1	4.1	4.9	1.3	0.3	4.2	78.0	16.8	1.6	--	--

POLAND

Warsaw

COOPERATOR(S): S. Starzycki.

DATE OF PLANTING (EFFECTIVE GERMINATION): September 20, 1973.

PRECIPITATION DURING CYCLE OF TEST: 489.5 mm (September, 1973 - August, 1974).

AMOUNT OF IRRIGATION APPLIED: None.

FERTILIZER USED: N = 120 kg/ha (NH_4NO_3), P_2O_5 = 229 kg/ha ($Ca(H_2PO_4)_2$), K_2O = 72 kg/ha (KCl).

GENERAL DESCRIPTION OF CLIMATIC CONDITIONS DURING TEST: Spring and summer were cold and cloudy.

DISEASE DEVELOPMENT: Septoria and mildew infections were observed.

INSECT, WEED OR PEST PROBLEMS: None.

DATE OF HARVEST: July 27 - August 18, 1974.

AREA HARVESTED FOR YIELD: 8 square meters.

DATES WHEN DIFFERENT NOTES WERE TAKEN:

Winter survival - March 21, 1974
Heading - June 11, 1974
Mildew - June 22, 1974
Flowering - June 24, 1974
Septoria - July 20, 1974
Plant height - July 24, 1974
Lodging - July 24 - August 18, 1974
Shattering - September 3, 1974

Correlation Coefficients

	Yield	Test weight	Protein	Flowering	Ripening	Plant height	Lodging	Shattering	Winter survival
Test weight	.21*								
Protein	-.40**	.13							
Flowering	.33**	-.30**	-.34**						
Ripening	.23*	-.36**	-.34**	.79**					
Plant height	.17	-.02	.11	.43**	.23*				
Lodging	-.31**	-.11	.33**	-.13	-.22*	.46**			
Shattering	.01	.04	-.09	-.31*	-.07	.21*	-.16		
Winter survival	.35**	-.13	-.33**	.02	-.05	.22*	.04	.12	
1000-kernel weight	.42**	.41**	.05	-.33**	-.32**	-.04	-.11	.32**	.22*

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

Table 30. Agronomic, grain quality, and disease data for the 30 cultivars in the Sixth International Winter Wheat Performance Nursery grown at Warsaw, Poland, 1974.

Cultivar	Yield q/ha	Test weight kg/hl	Protein %	Date of Flowering days from Jan. 1	Date of Ripening days from Jan. 1	Plant height cm	Lodging %	Shattering %	Winter survival %	1000-kernel weight gm	Date of heading days from Jan. 1	Leaf rust Sev. %	Leaf rust Resp.	Mildew Sev. %	Septoria Sev. %
Caribo	63.7	72.9	12.3	169	226	110	0	2	74	46.9	157	1	0-MR	15	3
Maris Nimrod	62.5	70.1	12.4	169	224	95	0	3	76	43.3	156	0	0	3	3
Jubilar	59.7	73.3	12.7	170	227	106	13	7	71	43.2	160	6	0-MS	15	3
Diplomat	59.5	73.1	13.6	171	228	113	0	6	83	46.0	160	2	0-MR	21	2
Kavkaz	55.4	73.2	13.8	169	223	109	0	1	75	47.8	156	1	0-MR	12	3
Aurora	55.3	74.7	13.7	166	214	103	3	1	78	47.6	154	17	0-S	35	5
Clarion	55.0	71.5	13.2	173	230	104	0	1	71	36.9	159	0	0	17	4
Dacia	54.4	74.1	15.8	159	210	109	28	2	78	51.8	147	0	0	16	4
Zenith	53.8	75.7	13.2	170	227	105	0	1	65	33.2	157	0	0	1	4
Demar 4	52.8	76.4	12.5	161	213	95	0	4	85	43.9	149	1	0-MR	10	3
Manella	51.1	73.4	12.6	169	216	106	0	3	73	38.4	158	1	0-MR	12	4
Bezostaya 1	50.6	76.7	13.5	162	214	98	18	0	78	46.8	150	1	0-MR	12	5
Zlatna Dolina	49.5	74.3	13.1	160	213	78	0	2	71	41.8	146	0	0	8	4
Atlas 66	46.5	75.3	14.9	163	213	110	53	1	55	41.5	150	0	0	3	2
Favorit	46.1	74.1	15.5	159	211	96	46	3	80	41.6	147	0	0	31	4
Sanja (Zg 5996/66)	45.5	74.4	12.5	160	213	73	0	3	74	38.6	148	0	0	2	4
Marimp 3	45.5	75.9	14.0	160	216	95	1	6	66	40.1	149	0	0	11	4
Moldova	44.2	74.6	14.6	158	210	106	35	7	79	43.8	146	0	0	38	3
Burgas 2	43.4	73.0	14.6	163	214	89	0	0	79	44.5	151	10	0-MS	40	6
Bolal	41.6	75.0	13.6	161	212	118	83	1	75	48.2	149	0	0	38	5
Blueboy	41.5	70.6	13.3	164	218	115	23	1	81	38.0	151	0	0	41	5
Rousalka	40.2	74.2	14.3	156	210	78	0	7	78	50.5	142	0	0	16	4
Carifen 12	39.9	66.7	13.2	167	218	80	0	1	69	34.4	154	1	0-MR	33	7
Dwarf Bezostaya	39.6	74.6	13.5	162	216	74	0	1	71	36.9	152	0	0	12	7
Blueboy II	37.9	69.7	13.4	165	219	108	16	1	76	29.9	152	0	0	38	5
Lancota (NE7G1132)	37.3	75.5	15.8	160	212	110	44	2	78	42.9	148	0	0	1	3
Likafen	33.2	68.8	13.9	167	225	100	10	1	74	32.4	154	0	0	55	6
NS732	30.5	70.4	13.2	155	217	65	0	13	69	45.9	142	0	0	10	5
Kirac 66	25.6	69.6	14.4	167	219	126	90	1	71	32.7	153	20	0-S	32	6
Lerma Rojo 64	22.2	75.9	16.2	162	217	81	0	1	3	36.5	151	1	0-MR	18	6
Mean	46.1	73.3	13.8	163.8	217.4	98.4	15.3	2.7	71.8	41.5	151.5	2.1		19.9	4.3
L.S.D. of cultivar means (05)	11.1	3.1	1.0	1.3	3.5	6.4	22.4	3.5	8.5	3.8	1.9	--		--	--
Coefficient of variation (%)	17.1	3.0	5.3	0.5	1.2	4.6	104.1	93.3	8.4	6.5	0.9	--		--	--
Local cultivars															
Luna	43.7	71.9	--	165	216	90	0	0	80	36.6	153	11	0-MS	19	5
Grana	57.5	73.1	--	169	223	105	0	2	78	42.9	157	0	0	11	3

REPUBLIC OF SOUTH AFRICA

Bethlehem

COOPERATOR(S): B. Lombard; I. B. J. Smit.

DATE OF PLANTING (EFFECTIVE GERMINATION): May 23, 1974.

PRECIPITATION DURING CYCLE OF TEST: 342.3 mm (May 1 - December 31, 1974).

AMOUNT OF IRRIGATION APPLIED: None.

FERTILIZER USED: N = 10 kg/ha, P_2O - 34.3 kg/ha.

GENERAL DESCRIPTION OF CLIMATIC CONDITIONS DURING TEST: Initial soil moisture was adequate. Winter conditions were normal. Insufficient spring moisture reduced yield.

DISEASE DEVELOPMENT: Severe infections of leaf and rust were observed.

INSECT, WEED OR PEST PROBLEMS: No problems.

DATE OF HARVEST: November 29 - December 30, 1974.

AREA HARVESTED FOR YIELD: 6 square meters.

DATES WHEN DIFFERENT NOTES WERE TAKEN:
Flowering - October 8 - November 12, 1974
Height - November 15 - December 24, 1974
Lodging - November 15 - December 24, 1974
Ripeness - November 15 - December 24, 1974
Rusts - November 29, December 9, December 23, 1974

Correlation Coefficients

	Yield	Test weight	Protein	Flowering	Ripening	Plant height
Test weight	.26**					
Protein	-.53**	.18				
Flowering	.54**	-.13	-.58**			
Ripening	.49**	-.05	-.49**	.93**		
Plant height	.26**	.06	-.17	.41**	.45**	
Shattering	-.38**	-.35**	.12	-.11	-.02	-.18

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

Table 31. Agronomic, grain quality, and disease data for the 30 cultivars in the Sixth International Winter Wheat Performance Nursery grown at Bethlehem, Republic of South Africa.

Cultivar	Yield q/ha	Test weight kg/hl	Protein %	Date of Flowering (days from Jan. 1)	Date of Ripening (days from Jan. 1)	Plant height cm	Shattering %	Rust Leaf Sev. %	Rust Leaf Resp.	Rust Stem Sev. %	Rust Stem Resp.
Clarion	25.2	75.3	14.4	311	352	66	0	79	S	74	S
Caribo	23.6	76.7	12.7	306	347	61	0	89	S	87	S
Kavkaz	21.8	78.9	16.8	298	340	58	0	2	0-MR	0	0
Manella	21.0	78.2	14.7	306	345	57	0	8	MS-S	69	S
Zenith	20.9	78.9	15.3	305	346	62	0	54	S	94	S
Jubilar	20.6	76.0	12.9	311	349	74	18	49	MS-S	91	S
Aurora	20.5	80.3	16.4	294	336	55	0	0	0	0	0
Dwarf Bezostaya	19.8	80.1	14.1	293	336	41	0	0	0	0	0
Diplomat	19.2	75.2	11.7	315	358	75	0	91	S	99	S
Maris Nimrod	18.9	75.9	12.8	309	340	56	0	27	MR	99	S
Bolal	18.8	79.2	15.0	287	327	58	0	0	0	0	0
Bezostaya 1	18.6	81.0	15.2	291	327	56	0	0	0	0	0-S
Blueboy	18.3	76.4	14.9	291	336	64	0	10	S	69	S
Burgas 2	17.5	77.6	16.6	292	333	46	0	0	0	0	0
Blueboy II	16.8	75.3	15.1	289	335	59	23	4	0-S	0	0
Favorit	16.4	78.5	16.7	289	327	59	0	0	0-MR	0	0-S
Dacia	16.2	78.3	17.4	293	335	56	11	3	0-MS	94	S
Marimp 3	16.1	77.4	16.2	287	326	51	15	1	0-S	0	0-MS
Lancota (NE701132)	15.8	78.7	18.5	295	341	60	0	23	MS	77	S
Carifen 12	15.7	74.5	17.0	301	342	50	20	27	S	80	S
Zlatna Dolina	15.6	75.2	16.3	289	324	41	11	0	0-S	1	0-S
Rousalka	15.6	77.1	16.6	288	326	55	0	0	0-MR	0	0-MS
Demar 4	15.2	77.7	16.1	292	336	47	16	11	MS-S	49	S
Lerma Rojo 64	14.3	76.6	17.3	281	319	70	0	0	0	0	0
Moldova	14.0	76.5	17.3	387	321	61	0	0	0	0	0
Kirac 66	13.8	78.2	16.8	291	340	63	23	40	S	79	S
Likafen	13.6	78.4	17.9	296	341	61	42	30	MS	99	S
Sanja (Zg 5996/66)	13.1	75.9	16.5	289	326	39	8	0	0-MS	0	0
NS732	12.0	71.3	14.9	288	326	40	34	0	0	1	0-S
Atlas 66	11.9	76.6	19.0	292	336	65	0	3	MS	64	S
Mean	17.4	77.2	15.8	295.1	336.0	56.7	7.3	18.4		40.9	
L.S.D. of cultivar means (.05)	3.3	0.7	0.9	1.6	1.0	3.4	4.9	--		--	
Coefficient of variation (%)	13.6	0.7	4.0	0.4	0.2	4.3	48.2	--		--	

ROMANIA

Fundulea

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

DATE OF PLANTING (EFFECTIVE GERMINATION): October 12, 1973.

PRECIPITATION DURING CYCLE OF TEST: 412 mm (August 1, 1973 - July 1, 1974).

AMOUNT OF IRRIGATION APPLIED: None.

FERTILIZER USED: N = 120 kg/ha; P_2O_5 = 70 kg/ha.

GENERAL DESCRIPTION OF CLIMATIC CONDITIONS DURING TEST: Emergence took place only in early February, because of a very severe drought during the autumn and winter. (Therefore there was no winterkilling.) Good weather in spring facilitated an almost normal growth, but temperatures in July affected grain filling, especially in the late varieties.

DISEASE DEVELOPMENT: Powdery mildew was very severe. Rust was only sporadic.

INSECT, WEED OR PEST PROBLEMS: None.

DATE OF HARVEST: July 15, 1974.

AREA HARVESTED FOR YIELD: 3 square meters.

DATES WHEN DIFFERENT NOTES WERE TAKEN:
Powdery mildew - June 21, 1974
Height - June 25, 1974
Puccinia recondita - July 2, 1974
Puccinia graminis tritici - July 2, 1974
Lodging - July 2, 1974

Correlation Coefficients

	Yield	Test weight	Protein	Flowering	Ripening	Plant height	Lodging
Test weight Number of observations	.09 120						
Protein Number of observations	-.32** 120	.33** 120					
Flowering Number of observations	-.29** 120	-.50** 120	-.10 120				
Ripening Number of observations	-.26** 120	-.58** 120	-.11 120	.93** 120			
Plant height Number of observations	-.19* 120	.23* 120	.43** 120	.25** 120	.29** 120		
Lodging Number of observations	-.03 120	.24** 120	.31** 120	-.13 120	-.18* 120	.54** 120	
Shattering Number of observations	-.25* 70	-.06 70	-.18 70	.20 70	.21 70	.17 70	-.05 70

**Significant at the 1% level.

*Significant at the 5% level.

Table 32. Agronomic, grain quality, and disease data for the 30 cultivars in the Sixth International Winter Wheat Performance Nursery grown at Fundulea, Romania, 1974.

Cultivar	Yield q/ha	Test weight kg/hl	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.	Mildew Sev. %
Bolal	53.2	77.0	12.8	148	180	110	65	80	S	10	0-S	50
Favorit	53.0	78.5	13.9	149	180	100	28	45	S	55	S	40
Dacia	51.1	76.3	14.1	150	181	100	0	10	MS	55	S	47
Lerma Rojo 64	51.1	77.0	12.8	146	178	89	6	0	0	0	0	52
Blueboy	51.0	72.0	11.5	151	184	94	0	9	R-MR	60	S-VS	67
Lancota (NE701132)	50.8	76.3	14.1	152	181	109	77	11	R-MR	5	MR	32
Sanja (Zg 5996/66)	50.5	72.0	12.4	149	179	74	0	5	R	35	S	40
Zlatna Dolina	49.8	74.5	11.8	148	181	74	0	7	R	6	R-MR	37
Clarion	49.4	67.0	12.1	159	188	90	0	9	MR	12	MR-S	55
Manella	49.3	73.3	12.4	156	184	96	0	50	S-VS	62	S	57
Rousalka	49.0	75.0	12.7	146	180	76	0	10	MR	57	S	42
Maris Nimrod	48.7	67.5	12.1	159	189	92	0	37	MS-S	40	S	27
Blueboy II	48.5	74.0	12.4	151	181	93	0	20	MR-MS	10	0-R	70
Zenith	48.3	71.8	13.6	157	187	98	0	55	VS	50	S-VS	45
NS732	48.2	68.0	12.2	147	179	54	0	40	S	75	VS	42
Burgas 2	48.1	75.0	13.5	153	182	80	0	32	MS-S	10	R	70
Dwarf Bezostaya	47.8	76.0	12.4	151	181	61	0	22	MR-MS	22	MS-VS	47
Bezostaya 1	47.0	74.0	13.4	150	183	90	0	35	MS	20	S	37
Marimp 3	45.5	75.3	13.6	149	181	94	0	47	S	10	MS	25
Caribo	45.3	69.5	11.9	158	188	100	0	45	MR-MS	70	VS	57
Kavkaz	45.1	74.0	14.0	154	183	99	0	55	S-VS	10	R	62
Demar 4	44.5	77.0	12.7	150	180	89	0	42	S	30	S	60
Carifen 12	43.4	67.0	12.1	154	183	69	0	70	VS	75	VS	62
Moldova	42.8	75.0	14.5	147	181	104	6	5	R	5	R-MR	52
Aurora	41.6	77.3	13.9	152	181	89	0	35	S	10	R	75
Likafen	41.5	76.0	12.7	153	182	85	0	9	R-MR	10	MR	75
Jubilar	41.1	72.0	12.9	159	188	104	0	17	MR-MS	55	S-VS	65
Diplomat	38.9	73.8	13.2	160	189	97	0	45	S-VS	35	S-VS	75
Atlas 66	37.6	71.5	16.1	152	184	115	43	5	R	7	R	32
Kirac 66	35.9	74.8	13.9	153	182	114	68	50	S-VS	45	S	65
Mean	46.6	73.6	13.0	152.1	182.7	91.2	9.7	30.1		31.5		52.1
L.S.D. of cultivar means (.05)	4.6	0.8	0.7	--	0.3	6.3	14.7	--		--		--
Coefficient of variation (%)	7.0	0.7	3.8	--	0.1	4.9	107.2	--		--		--
Local cultivars												
F26-70	42.6	77.0	--	147	179	86	0	55	S	0	0	20
F53-70	40.7	77.0	--	150	183	96	0	13	MR	28	MS-S	40
F54-70	39.6	78.0	--	150	183	91	0	13	MR	20	MS	40

SPAIN

Logrono

COOPERATOR(S): P de la Hera.

DATE OF PLANTING (EFFECTIVE GERMINATION): November 24, 1973.

PRECIPITATION DURING CYCLE OF TEST: 744.1 mm.

AMOUNT OF IRRIGATION APPLIED: None.

FERTILIZER USED: N = 30 kg/ha, P_2O_5 = 30 kg/ha, K_2O = 30 kg/ha.

GENERAL DESCRIPTION OF CLIMATIC CONDITIONS DURING TEST: Rains during September caused a postponement of harvest.

DISEASE DEVELOPMENT: Not reported.

INSECT, WEED OR PEST PROBLEMS: Not reported.

DATE OF HARVEST: September 23, 1974.

AREA HARVESTED FOR YIELD: 3 square meters.

DATES WHEN DIFFERENT NOTES WERE TAKEN:
Not reported.

Correlation Coefficients

	Yield	Flowering	Ripening
Flowering	.07		
Ripening	-.02	.93**	
Plant height	-.42**	.15	.27**

**Significant at the 1% level.

Table 33. Agronomic, grain quality, and disease data for the 30 cultivars in the Sixth International Winter Wheat Performance Nursery grown at Logrono, Spain, 1974.

Cultivar	Yield	Date of flowering	Date of ripening	Plant height	Rust: Stripe Resp.	Rust: Leaf Resp.	Rust: Stem Resp.
	g/ha	days from Jan. 1		cm			
Kavkaz	69.5	186	218	84	VR-R	R-MR	R-M
MS732	57.9	178	205	49	VR-M	VR-R	VR
Dwarf Bezostaya	55.6	185	217	58	O-MR	O-MR	VR-R
Sanja (Zg 5996/66)	54.0	177	203	56	R-MS	MR-M	R-MR
Carifen 12	51.7	182	211	59	O-VR	VR-R	VR
Blueboy II	50.2	187	217	74	VR	VR-R	VR-M
Zlatna Dolina	49.2	186	216	50	VR-MR	O-MR	R-MR
Aurora	48.5	182	213	75	O-VR	O-VR	O-VR
Likafen	47.5	183	213	75	O	O-R	VR
Rousalka	47.0	176	204	65	O-VR	VR	O-R
Manella	45.4	185	210	75	R-MR	R	R-MS
Bez ostaya 1	42.7	181	21[illegible]	79	VR-M	VR-MR	R
Marimp 3	42.4	183	212	71	VR-MR	R-MR	VR
Dacia	42.4	181	213	74	VR	R	VR-MR
Jubilar	41.7	187	220	84	VR-R	VR	VR-M
Maris Nimrod	41.6	188	220	70	VR-R	VR-R	VR-R
Burgas 2	41.3	189	218	64	VR-MS	R-MR	VR-MR
Blueboy	41.0	183	213	[illegible]	R-M	VR-MR	R-MR
Demar 4	39.8	177	205	82	O-VR	O-VR	VR-R
Bolal	38.9	182	215	74	O-VR	VR-M	O-MR
Zenith	38.6	182	215	74	VR-R	VR-R	MR-M
Clarion	37.9	191	222	66	R-MR	R	VR
Moldova	37.8	180	209	78	O-VR	O	VR
Caribo	36.6	186	218	83	O-R	VR	VR
Atlas 66	35.7	188	220	96	R-MR	VR-R	R-MR
Diplomat	35.0	184	220	78	O-VR	O-MR	O-VR
Favorit	35.0	182	214	74	VR-M	MR	VR-M
Lancota (NE701132)	34.6	183	212	78	VR-M	O-R	VR-R
Kirac 66	32.8	187	218	90	VR-MS	VR-MR	VR-R
Lerma Rojo 64	29.3	167	195	76	R-MR	R-M	R-MR
Mean	43.4	182.8	213.5	73.1			
L.S.D. of cultivar means (.05)	4.6	1.6	1.9	3.5			
Coefficient of variation (%)	7.6	0.6	0.6	3.4			

SWEDEN

Svalof

COOPERATOR(S): G. Olsson.

DATE OF PLANTING (EFFECTIVE GERMINATION): October 4, 1973.

PRECIPITATION DURING CYCLE OF TEST: 201 mm (March 1 - July 31, 1974).

AMOUNT OF IRRIGATION APPLIED: None.

FERTILIZER USED: N = 120 kg/ha, P_2O_5 = 73 kg/ha, K_2O = 72 kg/ha.

GENERAL DESCRIPTION OF CLIMATIC CONDITIONS DURING TEST: A very mild winter, with a long growing season.

DISEASE DEVELOPMENT: A normal attack of mildew. A little more stripe rust than usual.

INSECT, WEED OR PEST PROBLEMS: None.

DATE OF HARVEST: August 8 -18, 1974.

AREA HARVESTED FOR YIELD: 2.1 square meters.

DATES WHEN DIFFERENT NOTES WERE TAKEN:
Winter survival - April 8, 1974
Height - July 5, 1974
Mildew - July 5, 1974
Stripe rust - July 29, 1974
Lodging - August 7, 1974

Correlation Coefficients

	Yield	Test weight	Protein	Flowering	Ripening	Plant height	Lodging	Shattering
Test weight	.51**							
Protein	-.74**	-.36**						
Flowering	.81**	.53**	-.56**					
Ripening	.44**	.30**	-.27**	.63**				
Plant height	.62**	.54**	-.21*	.62**	.54**			
Lodging	.56**	.40**	-.30**	.45**	.30**	.62**		
Shattering	-.25**	-.16	-.01	-.28**	-.04	-.15	-.34**	
1000-kernel weight	.22*	-.19*	-.06	.05	.04	.05	.11	-.08

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

Table 34. Agronomic, grain quality, and disease data for the 30 cultivars in the Sixth International Winter Wheat Performance Nursery grown at Svalof, Sweden, 1974.

Cultivar	Yield q/ha	Test weight kg/hl	Protein %	Date of Flowering: days from Jan. 1	Date of Ripening: days from Jan. 1	Plant height cm	Lodging %	Shattering %	1000-kernel weight gm	Stripe rust Sev. %	Mildew Sev. %	Pearling[a] resistance 1-9
Clarion	99.6	81.2	12.9	167	224	91	40	0	47.4	0	12	6
Maris Nimrod	99.1	80.7	12.6	167	223	85	76	0	58.1	0	0	5
Caribo	98.6	81.3	12.4	166	223	96	61	0	54.4	0	22	6
Manella	95.9	81.2	13.1	166	223	95	60	0	56.3	0	12	6
Jubilar	90.6	81.6	13.4	167	224	96	58	0	53.1	0	11	6
Zenith	83.8	83.6	14.7	165	222	89	44	0	42.1	0	7	7
Diplomat	83.0	83.5	13.9	167	228	96	26	1	51.6	0	30	6
Carifen 12	81.5	79.0	13.3	164	218	75	3	0	46.6	0	47	7
Bolal	80.4	81.3	15.8	161	221	91	78	0	56.6	9	7	7
Bezostaya 1	74.1	82.5	15.5	163	223	88	48	0	53.8	1	15	6
Kavkaz	73.9	76.1	16.7	168	225	89	28	0	55.5	0	4	6
Aurora	73.0	79.8	16.6	165	222	84	14	0	56.0	1	13	6
Likafen	72.5	80.9	15.7	164	223	90	38	0	43.9	0	55	7
Blueboy	72.4	81.5	15.0	163	222	84	51	0	49.5	3	46	6
Demar 4	71.6	81.1	14.2	161	222	83	10	1	50.9	1	8	6
Favorit	69.0	80.5	18.4	160	222	85	41	0	51.6	0	3	6
Dwarf Bezostaya	66.6	82.0	13.7	163	222	70	7	0	47.4	0	7	7
Burgas 2	65.6	76.8	17.0	164	225	75	2	0	52.1	0	8	7
Blueboy II	65.3	80.7	16.3	163	223	86	75	0	42.5	2	17	6
Zlatna Dolina	64.0	80.4	14.9	160	220	69	1	0	48.3	3	13	6
Kirac 66	62.3	80.3	16.3	163	222	88	84	0	45.8	2	30	6
Atlas 66	58.6	81.7	17.9	162	222	94	29	0	44.6	0	3	6
Marimp 3	58.3	79.9	16.3	160	221	81	34	1	43.6	2	1	6
Dacia	58.1	79.0	19.2	160	220	82	13	0	57.8	0	11	6
Moldova	57.3	78.3	18.9	160	221	84	15	0	50.4	1	38	6
Sanja (Zg 599C/66)	50.6	79.9	15.7	160	221	66	0	0	58.3	0	20	6
Lerma Rojo 64	46.4	78.4	18.6	156	221	78	29	0	51.8	0	27	6
Lancota (NE701132)	42.8	79.5	18.9	160	223	83	4	0	45.0	1	11	7
Rousalka	41.4	78.1	17.6	155	218	71	0	1	54.0	0	8	6
NS732	40.6	70.3	15.7	153	221	61	1	1	52.0	0	0	6
Mean	69.9	80.0	15.7	162.3	222.0	83.4	31.2	0.2	50.4	0.9	16.2	6.2
L.S.D. of cultivar means (.05)	6.6	0.7	0.5	0.5	0.8	5.7	14.0	0.6	2.0	--	--	--
Coefficient of variation (%)	6.8	0.6	2.4	0.2	0.2	4.9	31.8	184.4	2.8	--	--	--

a) One replication only.

SWITZERLAND

Zurich

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

DATE OF PLANTING (EFFECTIVE GERMINATION): October 27, 1973.

PRECIPITATION DURING CYCLE OF TEST: 639 mm (October 27, 1973 - August 14, 1974).

AMOUNT OF IRRIGATION APPLIED: None.

FERTILIZER USED: N = 120 kg/ha, P_2O_5 = 80 kg/ha, K_2O = 240 kg/ha.

GENERAL DESCRIPTION OF CLIMATIC CONDTIONS DURING TEST: Relatively mild winter; dry, warm srping, cool summer, but very hot at harvest.

DISEASE DEVELOPMENT: Heavy attack of septoria glume blotch.

INSECT, WEED OR PEST PROBLEMS: None.

DATE OF HARVEST: July 27 and August 14, 1974.

AREA HARVESTED FOR YIELD: 4.6 square meters.

DATES WHEN DIFFERENT NOTES WERE TAKEN:
Stripe rust - May 30, 1974
Height - July 7, 1974
Lodging - July 24, 1974

Correlation Coefficients

	Yield	Test weight	Protein	Flowering	Ripening	Plant height	Lodging
Test weight	.51**						
Protein	.05	.22*					
Flowering	.31**	.11	-.12				
Ripening	.52**	.15	.08	.71**			
Plant height	.23*	.18	.36**	.50**	.51**		
Lodging	-.25**	-.05	.54**	.19*	.00	.40**	
1000-kernel weight	-.05	-.07	.01	-.11	-.06	-.12	.06

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

Table 35. Agronomic, grain quality, and disease data for the 30 cultivars in the Sixth International Winter Wheat Performance Nursery grown at Zurich, Switzerland, 1974.

Cultivar	Yield q/ha	Test weight kg/hl	Protein %	Date of Flowering (days from Jan. 1)	Date of Ripening (days from Jan. 1)	Plant height cm	Lodging %	1000-kernel weight gm	Seed[a] note 1-9	Stripe rust Sev. %	Stripe rust Resp.	Zeleny[b] value %	Protein[b] content %
Kavkaz	73.5	69.4	14.7	167	224	111	6	36	4	1	0-MR	39	10.1
Aurora	72.4	75.2	14.6	164	217	109	9	39	4	0	0	42	11.0
Maris Nimrod	70.8	72.7	13.2	168	224	105	33	36	4	0	0	48	11.6
Caribo	63.3	76.2	12.7	173	224	115	2	30	4	0	0	34	10.6
Burgas 2	61.8	74.9	15.1	163	217	88	6	29	5	1	0-MR	47	10.8
Favorit	56.2	76.4	15.6	157	224	105	54	36	4	1	0-MR	48	10.4
Demar 4	54.7	71.8	12.8	158	217	100	5	27	5	7	MR	41	10.2
Bezostaya 1	53.8	79.0	14.0	158	217	104	13	32	4	20	MR-M	48	9.8
Jubilar	53.7	74.5	13.6	177	224	116	5	28	5	0	0	41	10.3
Dacia	53.7	77.9	15.4	158	217	113	46	31	5	0	0	42	10.7
Manella	52.8	74.0	12.8	168	224	110	11	35	4	2	0-MR	45	10.7
Clarion	51.2	69.7	14.2	178	224	108	6	39	4	0	0	33	10.0
Zenith	50.6	75.9	14.2	177	224	106	8	28	5	5	MR	41	11.7
Atlas 66	50.3	79.1	16.5	163	216	126	66	35	3	5	0-MR	43	11.3
Rousalka	49.2	77.6	14.7	152	207	83	6	34	3	2	0-MR	54	11.8
Blueboy	47.5	67.1	12.4	166	217	108	7	33	3	1	0-MR	43	10.5
Moldova	46.9	73.3	15.6	153	224	103	56	38	3	22	MR	44	11.0
Diplomat	46.2	79.4	13.9	178	224	116	3	36	4	0	0	41	11.0
Blueboy II	44.0	58.8	13.2	164	217	110	18	29	4	1	0-MR	51	12.1
Carifen 12	41.2	59.7	13.3	167	224	83	6	42	2	11	0-MR	56	12.6
Dwarf Bezostaya	41.2	73.7	13.6	159	217	71	5	39	4	31	MR-M	31	10.7
Lerma Rojo 64	39.6	75.6	15.6	153	207	96	38	32	4	1	0-MR	36	9.8
Likafen	38.0	71.7	13.4	166	217	104	5	30	6	0	0	34	9.7
Lancota (NE701132)	36.0	70.0	15.5	165	217	118	64	33	4	20	M	51	11.1
Marimp 3	34.3	73.0	13.6	158	207	98	10	42	3	20	MR-M	53	12.4
Sanja (Zg 5096/66)	32.9	67.2	12.6	154	207	75	24	40	3	32	MR-S	47	11.2
Zlatna Dolina	31.3	67.7	12.2	154	207	79	4	38	4	43	M-S	40	11.4
Bolal	24.3	55.9	15.0	159	217	120	67	36	3	57	S	51	11.3
Kirac 66	24.2	69.1	14.8	167	217	129	90	35	5	2	0-MR	46	11.4
NS732	23.8	58.8	13.1	152	207	64	4	34	5	32	M-S	46	11.0
Mean	47.3	71.5	14.1	163.1	217.5	102.3	22.8	34.4	3.9	10.6		43.9	10.9
L.S.D. of cultivar means (.05)	6.8	3.7	0.5	2.8	0.4	5.3	23.3	11.5	2.0	--		16.3	2.1
Coefficient of variation (%)	10.2	3.7	2.7	1.2	0.1	3.7	72.6	23.7	37.4	--		26.6	14.0

a) Seed note: 1 = good; 9 = poor.
b) Zeleny protein, as measured by cooperator.

TURKEY

Ankara

COOPERATOR(S): A. Demirlicakmak; Ali Bayraktar; K. Yakar; Y. Ergun.

DATE OF PLANTING (EFFECTIVE GERMINATION): October 5, 1973, but lack of rain until December 8 delayed emergence until March, 1974.

PRECIPITATION DURING CYCLE OF TEST: 295 mm.

AMOUNT OF IRRIGATION APPLIED: None.

FERTILIZER USED: N = 60 kg/ha, P_2O_5 = kg/ha.

GENERAL DESCRIPTION OF CLIMATIC CONDITIONS DURING TEST: Rains started very late in fall (December), and this delayed emergence to early March. Late March, April and early May was very dry. Late May and June had good rainfall.

DISEASE DEVELOPMENT: None.

INSECT, WEED OR PEST PROBLEMS: None.

DATE OF HARVEST: July 25, 1974.

AREA HARVESTED FOR YIELD: 6 square meters.

DATES WHEN DIFFERENT NOTES WERE TAKEN:
Not reported.

Correlation Coefficients

	Yield
Test weight	.51**

**Significant at the 1% level.

Table 36. Agronomic, grain quality, and disease data for the 30 cultivars in the Sixth International Winter Wheat Performance Nursery grown at Ankara, Turkey, 1974.

Cultivar	Yield q/ha	Test weight[a] kg/hl	Protein[a] %
Blueboy	21.9	72.1	15.5
Bezostaya 1	21.3	77.8	16.7
Kirac 66	21.0	78.7	17.3
Blueboy II	19.5	73.9	15.7
Bolal	19.4	79.7	15.0
Lancota (NE701132)	18.9	77.3	18.4
Burgas 2	18.2	75.6	17.1
Favorit	17.7	75.7	16.8
Clarion	17.4	66.8	17.7
Likafen	17.1	75.9	17.8
Kavkaz	17.0	75.4	17.8
Caribo	16.8	68.9	18.2
Manella	15.8	71.9	17.3
Rousalka	15.5	76.5	17.3
Aurora	15.3	75.7	18.1
Zenith	14.6	70.3	18.0
Carifen 12	13.6	69.3	18.6
Dacia	12.1	74.1	19.3
Dwarf Bezostaya	11.9	74.9	15.6
Maris Nimrod	11.5	67.5	17.8
Jubilar	11.2	66.8	19.1
Moldova	11.1	74.2	19.0
Lerma Rojo 64	11.1	75.5	17.5
Demar 4	10.7	73.8	16.8
Zlatna Dolina	9.6	72.1	17.8
NS72	9.2	71.5	16.8
Sa ia (Zg 5996/66)	8.6	71.8	17.4
Di omat	7.5	68.1	20.1
Atlas 66	6.7	69.0	22.4
Marimp 3	5.6	72.6	19.5
Mean	14.2	73.1	17.7
L.S.D. of cultivar means (.05)	4.2	--	--
Coefficient of variation (%)	21.2	--	--

a) One replication only.

TURKEY

Erzurum

COOPERATOR(S): B. Yilmaz; T. Yilmaz.

DATE OF PLANTING (EFFECTIVE GERMINATION): October 20, 1973.

PRECIPITATION DURING CYCLE OF TEST: 368.2 mm (October 1, 1973 - August 31, 1974).

AMOUNT OF IRRIGATION APPLIED: 2 applications (no amounts reported).

FERTILIZER USED: N = 60 kg/ha, P_2O_5 = 50 kg/ha.

GENERAL DESCRIPTION OF CLIMATIC CONDITIONS DURING TEST: Not reported.

DISEASE DEVELOPMENT: No diseases observed.

INSECT, WEED OR PEST PROBLEMS: Birds were a problem. Plots were hand weeded.

DATE OF HARVEST: August 13, 1974.

AREA HARVESTED FOR YIELD: 4.0 square meters.

DATES WHEN DIFFERENT NOTES WERE TAKEN:
Winter survival - April 15, 1974
Flowering - June 17, 21, 25, 29, 1974

Correlation Coefficients

	Yield	Test weight	Protein	Flowering	Ripening	Plant height	Shattering
Test weight	.19*						
Number of observations	120						
Protein	-.35**	-.26**					
Number of observations	120	120					
Flowering	.13	-.52**	.14				
Number of observations	120	120	120				
Ripening	.05	-.50**	.26**	.82**			
Number of observations	120	120	120	120			
Plant height	.36**	.11	.34**	.13	.18*		
Number of observations	120	120	120	120	120		
Shattering	-.11	.03	-.03	-.13	-.15	-.10	
Number of observations	119	119	119	119	119	119	
Winter survival	.45**	.23*	-.37**	.08	-.13	.05	-.20*
Number of observations	120	120	120	120	120	120	119

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

Table 37. Agronomic, grain quality, and disease data for the 30 cultivars in the Sixth International Winter Wheat Performance Nursery grown at Erzurum, Turkey, 1974.

Cultivar	Yield q/ha	Test weight kg/hl	Protein %	Date of Flowering (days from Jan. 1)	Date of Ripening (days from Jan. 1)	Plant height cm	Shattering %	Winter survival %
Blueboy	44.2	73.8	13.8	17[illegible]	208	71	0	73
Caribo	40.9	72.1	15.5	180	220	70	0	70
Bezostaya 1	34.2	77.8	14.5	17[illegible]	204	75	15	60
Lancota (NE701132)	34.1	76.3	16.7	171	212	82	1	63
Maris Nimrod	33.8	69.0	15.7	179	219	71	10	50
Zenith	33.3	69.9	16.8	179	212	64	0	53
Dwarf Bezostaya	33.2	74.4	13.9	174	201	52	23	68
Kirac 66	32.9	76.5	15.9	174	212	81	20	55
Bolal	32.7	76.7	14.4	173	202	69	15	65
Likafen	32.6	75.9	16.0	175	214	64	15	50
Blueboy II	32.3	73.7	14.4	174	210	66	0	58
Favorit	28.5	76.1	16.3	17[illegible]	205	69	5	58
Burgas 2	28.3	75.3	16.2	17[illegible]	212	60	10	53
Jubilar	28.0	69.2	16.4	183	218	73	0	43
Carifen 12	27.8	70.4	15.8	17[illegible]	218	60	5	50
Clarion	27.6	70.1	17.0	18[illegible]	220	73	28	46
Manella	27.2	72.3	16.4	18[illegible]	217	57	0	43
Dacia	27.1	72.0	17.3	170	205	73	5	60
Moldova	27.0	75.8	17.5	170	208	79	5	50
Kavkaz	26.4	75.1	16.2	175	210	62	0	58
Aurora	25.0	75.3	16.1	174	211	68	10	55
Lerma Rojo 64	23.1	74.8	16.3	169	202	69	25	30
Sanja (Zg 5996/66)	21.7	73.0	15.0	172	205	45	30	60
Zlatna Dolina	21.2	73.5	15.4	172	205	53	0	63
Marimp 3	19.5	67.2	16.6	176	213	58	10	35
Atlas 66	19.2	71.3	18.7	173	209	78	30	26
Rousalka	19.1	77.2	16.9	169	203	56	0	55
Demar 4	18.0	72.8	14.4	174	211	58	20	48
Diplomat	17.6	71.2	17.3	183	221	74	0	48
NS732	11.6	72.6	15.3	171	212	46	20	39
Mean	27.6	73.4	15.9	174.5	210.6	65.7	10.1	53.0
L.S.D. of cultivar means (.05)	8.2	2.9	0.6	[illegible].3	--	3.7	17.3	19.3
Coefficient of variation (%)	21.1	2.9	2.9	[illegible].5	0.0	4.0	121.5	25.9

TURKEY

Eskisehir

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

DATE OF PLANTING (EFFECTIVE GERMINATION): October 20, 1973.

PRECIPITATION DURING CYCLE OF TEST: 392.3 mm (September 1, 1973 - August 31, 1974).

AMOUNT OF IRRIGATION APPLIED: None.

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

GENERAL DESCRIPTION OF CLIMATIC CONDITIONS DURING TEST: Not reported.

DISEASE DEVELOPMENT: No disease problem.

INSECT, WEED OR PEST PROBLEMS: None reported.

DATE OF HARVEST: July 25, 1974.

AREA HARVESTED FOR YIELD: 8 square meters.

DATES WHEN DIFFERENT NOTES WERE TAKEN:
Frost damage - March 25, 1974
Plant height - July 10, 1974
Lodging - July 25, 1974
Shattering - July 25 - August 15, 1974

Correlation Coefficients

	Yield	Test weight	Protein	Flowering	Ripening	Plant height	Lodging
Test weight	.30**						
Protein	-.20	.35**					
Flowering	-.17	-.43**	-.26*				
Ripening	-.19	-.44**	-.25*	.84**			
Plant height	.37**	.18	-.04	.19	.22*		
Lodging	.40**	.26*	-.12	-.02	-.08	.41**	
Frost	-.24*	-.60**	-.31**	.61**	.71**	.05	-.19

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

Table 38. Agronomic, grain quality, and disease data for the 30 cultivars in the Sixth International Winter Wheat Performance Nursery grown at Eskisehir, Turkey, 1974.

Cultivar	Yield[a] q/ha	Test[a] weight kg/hl	Protein[a] %	Date of Flowering days from Jan. 1	Date of Ripening days from Jan. 1	Plant[a] height cm	Lodging[a] %	Frost[a] damage 0-9
Blueboy	39.3	77.9	10.2	141	199	96	5	2
Bolal	38.7	84.1	10.8	133	191	103	3	1
Favorit	37.7	84.0	12.0	136	193	89	2	2
Bezostaya 1	37.3	84.7	11.5	140	199	89	0	2
Kirac 66	36.1	84.8	11.6	139	199	113	2	2
Likafen	35.7	82.4	11.5	140	199	82	0	2
Lerma Rojo 64	34.5	85.0	13.3	135	193	89	5	1
Caribo	34.0	76.8	11.4	145	209	90	0	4
Rousalka	32.4	82.9	13.4	135	191	69	0	1
Demar 4	31.5	81.1	11.2	135	193	76	0	2
Dacia	31.1	82.4	12.1	134	191	97	0	1
Blueboy II	31.1	79.8	11.2	141	201	91	2	2
Carifen 12	31.0	74.3	10.9	139	199	69	0	3
Lancota (NE701132)	30.0	83.1	12.9	140	199	99	2	2
Moldova	28.5	82.9	12.7	135	193	89	0	1
Sanja (Zg 5996/66)	28.4	80.9	12.9	136	193	63	0	2
Aurora	28.2	83.9	11.8	140	199	87	0	2
Burgas 2	27.8	82.0	12.4	137	201	79	0	2
Manella	27.7	78.4	11.8	139	199	86	0	3
Clarion	27.5	75.3	10.3	144	208	81	0	4
Dwarf Bezostaya	27.5	83.0	11.5	141	201	57	0	2
Kavkaz	27.3	82.0	12.6	142	201	90	0	3
Zlatna Dolina	26.2	80.8	12.1	133	191	66	0	2
Diplomat	25.8	79.2	12.1	143	209	92	0	3
Atlas 66	25.2	80.6	14.2	141	199	110	0	2
Jubilar	25.2	76.3	11.1	145	209	95	0	3
NS732	24.8	79.3	12.7	137	193	52	0	1
Marimp 3	24.0	81.4	12.6	135	191	71	0	2
Zenith	23.2	79.5	12.7	138	199	86	0	2
Maris Nimrod	21.9	82.0	11.3	143	209	78	0	4
Mean	30.0	81.0	12.0	138.8	198.4	84.5	1.0	2.2
L.S.D. of cultivar means (.05)	4.1	1.2	0.9	3.1	3.3	6.1	2.9	0.6
Coefficient of variation (%)	8.4	0.9	4.7	1.3	1.0	4.4	177.8	17.4

a) Three replications only.

UNITED STATES

California

Davis

COOPERATOR(S): C. O. Qualset; H. E. Vogt.

DATE OF PLANTING (EFFECTIVE GERMINATION): October 19, 1973.

PRECIPITATION DURING CYCLE OF TEST: 508 mm.

AMOUNT OF IRRIGATION APPLIED: Application in late April. No amount reported.

FERTILIZER USED: $N(NH_4NO_3)$ = 44.8 kg/ha.

GENERAL DESCRIPTION OF CLIMATIC CONDITIONS DURING TEST: Wind damage caused severe shattering between maturity and harvest, thus lowering yields in some entries.

DISEASE DEVELOPMENT: Stripe rust was moderately severe. Barley yellow dwarf virus and Septoria caused light infections.

INSECT, WEED OR PEST PROBLEMS: Not reported.

DATE OF HARVEST: June 15, 1974.

AREA HARVESTED FOR YIELD: 3 square meters.

DATES WHEN DIFFERENT NOTES WERE TAKEN:
Not reported

Correlation Coefficients

	Yield	Test weight	Protein	Plant height	Lodging
Test weight	-.13				
Number of observations	30				
Protein	-.54**	.27			
Number of observations	120	30			
Plant height	-.39**	-.22	.35**		
Number of observations	120	30	120		
Lodging	.00	.36*	.21*	-.11	
Number of observations	120	30	120	120	
Shattering	-.83**	-.05	.47**	.57**	-.09
Number of observations	120	30	120	120	120

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

Table 39. Agronomic, grain quality, and disease data for the 30 cultivars in the Sixth International Winter Wheat Performance Nursery grown at Davis, California, U.S.A., 1974.

Cultivar	Yield q/ha	Test[a] weight kg/hl	Protein %	Date of Flowering (days from Jan. 1)	Date of Ripening (days from Jan. 1)	Plant height cm	Lodging %	Shattering %	Stripe rust Sev. %
Carifen 12	55.0	69.4	9.0	121	150	90	0	0	0
Clarion	46.3	69.9	9.3	126	155	105	0	1	0
Caribo	42.8	69.9	10.0	125	152	120	0	9	0
Likafen	42.6	73.5	9.1	118	150	99	0	5	0
Manella	39.8	70.4	10.1	122	152	108	0	4	0
Diplomat	38.3	73.9	10.2	129	156	111	0	5	0
Zenith	38.2	72.0	10.9	129	156	107	0	5	0
Dwarf Bezostaya	37.6	76.9	10.3	113	146	73	0	0	2
Rousalka	35.8	78.9	10.4	97	133	88	0	4	0
Lerma Rojo 64	34.0	79.6	11.2	82	125	92	92	0	0
Bezostaya 1	32.8	76.9	10.2	115	144	111	0	19	5
Jubilar	31.7	69.4	10.5	125	155	117	0	19	0
Maris Nimrod	31.6	70.4	9.9	123	149	112	0	10	0
Burgas 2	31.6	76.9	11.1	110	143	88	0	5	1
NS732	30.5	77.3	9.7	100	137	69	0	8	5
Sanja (Zg 5996/66)	30.3	72.8	10.1	104	140	82	0	13	6
Aurora	27.7	77.4	10.3	116	146	106	0	15	0
Lancota (NE701132)	27.7	77.8	10.7	116	145	123	0	48	3
Kavkaz	27.0	76.5	10.4	118	146	112	0	10	0
Zlatna Dolina	24.1	73.8	10.5	105	139	88	0	25	22
Blueboy	20.5	71.6	9.1	111	145	112	0	74	40
Blueboy II	19.3	72.2	11.0	111	145	114	0	70	8
Marimp 3	19.2	73.7	10.6	102	136	109	8	50	0
Atlas 66	17.1	74.0	11.6	115	144	135	1	78	20
Bolal	17.1	72.8	9.9	104	141	122	0	84	77
Favorit	16.2	75.9	11.0	107	142	111	4	83	13
Demar 4	15.3	69.4	11.7	107	144	102	0	61	1
Moldova	12.4	13.4	11.5	100	135	114	19	80	0
Kitac 66	12.2	75.9	12.3	116	149	130	3	97	0
Dacia	7.2	73.1	11.7	112	143	122	0	97	0
Mean	28.7	73.9	10.5	113	145	105.6	4.2	32.5	6.8
L.S.D. of cultivar means (.05)	6.0	--	0.7	--	--	5.8	4.8	11.[illegible]	--
Coefficient of variation (%)	14.8	--	4.9	--	--	3.9	81.8	25.2	--
Local cultivars									
Anza	54.6	78.4	--	91	113	89	0	3	0
WW33	46.7	77.9	--	102	140	87	0	0	2

a) One replication only.

UNITED STATES

Colorado

Akron

COOPERATOR(S): G. Henze.

DATE OF PLANTING (EFFECTIVE GERMINATION): October 3, 1973.

PRECIPITATION DURING CYCLE OF TEST: 152.4 mm (March 1 - July 15, 1973).

AMOUNT OF IRRIGATION APPLIED: None.

FERTILIZER USED: None.

GENERAL DESCRIPTION OF CLIMATIC CONDITIONS DURING TEST: Very dry. Crop development depended on subsoil moisture, except for rainfall in early June.

DISEASE DEVELOPMENT: None.

INSECT, WEED OR PEST PROBLEMS: None.

DATE OF HARVEST: July 15, 1974.

AREA HARVESTED FOR YIELD: 5.53 square meters.

DATES WHEN DIFFERENT NOTES WERE TAKEN:
Height - immediately prior to harvest

Correlation Coefficients

	Yield	Test weight
Test weight	.44*	
Plant height	.49**	.49**

**Significant at the 1% level.

*Significant at the 5% level.

Table 40. Agronomic, grain quality, and disease data for the 30 cultivars in the Sixth International Winter Wheat Performance Nursery grown at Akron, Colorado, U.S.A., 1974.

Cultivar	Yield q/ha	Test weight[a] kg/hl	Plant height[a] cm
Bolal	27.6	77.5	71
Blueboy	27.1	71.6	71
Kavkaz	26.6	74.0	76
Dwarf Bezostaya	26.4	75.9	56
Favorit	26.3	75.9	71
Dacia	26.2	75.2	76
Mol wa	25.2	74.9	81
B ostaya 1	25.2	77.0	71
Lancota (NE701132)	25.0	75.9	76
Blueboy II	24.7	73.7	76
Rousalka	23.9	74.0	61
Burgas 2	23.7	75.2	61
Demar 4	22.1	73.8	66
Carifen 12	22.1	66.6	61
Kirac 66	21.8	77.9	76
Aurora	21.3	75.2	71
Lerma Rojo 64	21.2	76.4	76
Zenith	21.2	69.0	66
Zlatna Dolina	21.1	74.3	56
Likafen	20.2	74.8	66
Atlas 66	20.1	73.1	81
Clarion	19.8	66.4	56
Manella	19.0	68.4	56
Caribo	18.9	65.5	61
Sanja (Zg 5996/66)	18.6	73.8	51
Maris Nimrod	18.4	62.7	56
Marimp 3	18.4	75.3	66
Jubilar	18.1	67.1	66
NS732	17.2	70.7	45
Diplomat	12.0	70.8	61
Mean	22.0	72.8	66.1
L.S.D. of cultivar means (.05)	3.1	--	--
Coefficient of variation (%)	10.2	--	--

a) One replication only.

UNITED STATES

Colorado

Fort Collins

COOPERATOR(S): J. R. Welsh.

DATE OF PLANTING (EFFECTIVE GERMINATION): September 26, 1973.

PRECIPITATION DURING CYCLE OF TEST: 152.4 mm (during growing season).

AMOUNT OF IRRIGATION APPLIED: 1 application of 10.2 mm (May 20, 1974).

FERTILIZER USED: None.

GENERAL DESCRIPTION OF CLIMATIC CONDITIONS DURING TEST: Very dry during test.

DISEASE DEVELOPMENT: Stem rust developed as a rusult of artificial innoculation in late May.

INSECT, WEED OR PEST PROBLEMS: None.

DATE OF HARVEST: July 30, 1974.

AREA HARVESTED FOR YIELD: 3.75 square meters.

DATES WHEN DIFFERENT NOTES WERE TAKEN:
All notes taken immediately prior to harvest.

Correlation Coefficients

	Yield	weight	Protein	Flowering	Plant height
Test weight	-.09				
Number of observations	30				
Protein	-.42**	.58**			
Number of observations	120	30			
Flowering	.28	-.53**	-.48**		
Number of observations	30	30	30		
Plant height	.48**	.09	.07	.41*	
Number of observations	30	30	30	30	
Lodging	-.01	.33	.30	-.32	.38*
Number of observations	30	30	30	30	30

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

Table 41. Agronomic, grain quality, and disease data for the 30 cultivars in the Sixth International Winter Wheat Performance Nursery grown at Fort Collins, Colorado, U.S.A., 1974.

Cultivar	Yield q/ha	Test[a] weight kg/hl	Protein %	Date of flowering days from Jan. 1	Plant[a] height cm	Lodging[a] %	Stem rust[a] Sev. %	Stem rust[a] Resp.
Likafen	83.9	77.8	14.3	153	107	10	5	S
Zenith	79.5	76.0	14.7	160	110	10	20	S
Blueboy II	78.4	74.6	14.2	150	116	10	30	S
Blueboy	77.5	74.0	13.6	150	110	30	20	S
Caribo	75.9	73.3	13.5	159	110	10	15	S
Carifen 12	75.1	68.1	13.1	155	85	10	55	S
Dwarf Bezostaya	75.0	78.7	13.5	151	75	10	90	S
Maris Nimrod	74.1	70.8	12.7	163	100	10	30	S
Burgas 2	73.9	76.9	16.5	150	90	10	20	S
Aurora	72.8	79.5	16.1	152	100	20	5	S
Clarion	72.7	69.0	14.4	164	100	10	50	S
Lancota (NE701132)	72.5	78.6	16.7	149	115	30	10	S
Rousalka	69.9	77.8	15.8	145	82	10	10	S
Kavkaz	67.6	79.1	16.0	158	105	10	5	S
Manella	66.5	74.7	13.5	160	107	10	70	S
Bolal	65.8	78.9	14.9	149	115	60	10	S
Favorit	64.5	77.5	17.4	146	95	30	30	S
Bezostaya 1	64.4	80.0	15.2	150	98	10	80	S
Kirac 66	63.4	77.7	15.9	150	112	70	15	S
Dacia	62.2	77.5	17.5	147	100	20	10	S
Zlatna Dolina	62.2	76.2	14.2	147	62	10	20	S
Sanja (Zg 5996/66)	61.5	76.1	14.3	147	75	10	10	S
Diplomat	59.1	74.2	14.0	165	105	10	50	S
Moldova	56.8	76.6	17.6	145	105	30	15	S
Demar 4	55.7	76.9	14.7	149	92	10	40	S
Jubilar	54.9	72.2	14.3	164	115	10	70	S
NS732	54.2	73.0	14.7	146	56	10	15	S
Marimp 3	52.4	75.1	17.1	147	74	10	30	S
Atlas 66	49.9	77.5	17.8	152	115	20	5	S
Lerma Rojo 64	48.9	77.5	17.9	145	98	30	5	S
Mean	66.4	75.9	15.2	152.3	97.6	18.0	28.0	
L.S.D. of cultivar means (.05)	9.2	--	0.6	--	--	--	--	
Coefficient of variation (%)	9.9	--	3.0	--	--	--	--	

a) Based on one replication only.

UNITED STATES

Nebraska

Lincoln

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

DATE OF PLANTING (EFFECTIVE GERMINATION): October 5, 1973.

PRECIPITATION DURING CYCLE OF TEST: Not reported.

AMOUNT OF IRRIGATION APPLIED: None.

FERTILIZER USED: N = 44.8 kg/ha, P_2O_5 = 19.5 kg/ha.

GENERAL DESCRIPTION OF CLIMATIC CONDITIONS DURING TEST: Abundant fall moisture, but very hot and dry during spring and summer. Good snow cover in winter, although temperatures were as low as -36°C at the nursery site. Survival was generally good for hardy types.

DISEASE DEVELOPMENT: Leaf rust and stem rust were both present in damaging proportions.

INSECT, WEED OR PEST PROBLEMS: Not reported.

DATE OF HARVEST: July 8, 1974.

AREA HARVESTED FOR YIELD: 1.5 square meters.

DATES WHEN DIFFERENT NOTES WERE TAKEN:
Height - July 5, 1974
Lodging - July 5, 1974
Shattering - July 20, 1974

Correlation Coefficients

	Yield	Test weight	Protein	Ripening	Plant height	Lodging	Shattering	Winter survival
Test weight	.76**							
Number of observations	29							
Protein	-.42**	-.14						
Number of observations	119	29						
Ripening	-.42**	-.62**	.37**					
Number of observations	120	29	119					
Plant height	.21*	.17	.19*	.20*				
Number of observations	120	29	119	120				
Lodging	-.04	.26	.21*	-.28**	.27**			
Number of observations	120	29	119	120	120			
Shattering	.10	.20	.01	-.17	.48**	.23*		
Number of observations	120	29	119	120	120	120		
Winter survival	.39*	-.24	-.18	.49**	.28	-.67**	.11	
Number of observations	30	29	30	30	30	30	30	
1000-kernel weight	.76**	.86**	-.21*	-.70**	.02	.27**	.16	-.26
Number of observations	117	29	117	117	117	117	117	29

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

Table 42. Agronomic, grain quality, and disease data for the 30 cultivars in the Sixth International Winter Wheat Performance Nursery grown at Lincoln, Nebraska, U.S.A., 1974.

Cultivar	Yield q/ha	Test[a] weight kg/hl	Protein %	Date of ripening days from Jan. 1	Plant height cm	Lodging %	Shattering %	Winter[a] survival %	1000-kernel weight gm	Date of heading[b] days from Jan. 1	Rust Leaf Sev. %	Rust Leaf Resp.	Rust Stem Sev. %
Kavkaz	33.1	78.0	16.6	181	93	2	2	80	36.8	144	1	R	12
Aurora	33.0	79.7	16.0	182	90	2	2	85	38.2	142	6	R-MR	21
Bezostaya 1	32.6	80.4	14.4	181	93	5	1	85	37.8	139	8	R-MS	87
Lancota (NE701132)	32.4	80.1	17.1	182	102	8	4	75	33.2	143	0	R	0
Favorit	31.7	79.3	16.2	181	91	2	14	80	37.5	138	40	MR-S	37
Bolal	29.4	80.0	13.6	181	102	4	18	85	33.6	139	98	S	6
Rousalka	28.3	77.7	16.4	180	71	2	1	95	40.5	134	2	R	32
Blueboy	27.3	66.8	12.4	182	94	1	9	90	27.7	141	8	R-MR	92
Dacia	27.2	76.4	15.7	181	99	6	13	85	37.0	141	3	R	66
Burgas 2	26.7	77.1	16.2	182	78	1	2	80	34.7	142	2	R	15
Zlatna Dolina	26.5	76.0	14.7	180	70	2	3	85	35.1	138	6	R-MR	5
Blueboy II	25.8	73.7	15.1	181	95	2	46	90	30.0	141	2	R	20
Dwarf Bezostaya	25.3	74.9	14.3	182	62	0	0	70	29.3	141	1	R-MS	91
Sanja (Zg 5996/66)	24.5	74.9	15.5	180	66	2	1	80	32.2	137	8	R-MR	4
Kirac 66	22.9	75.9	15.8	182	106	4	20	90	28.4	144	82	S	10
Demar 4	22.3	73.9	14.9	182	86	1	23	80	28.8	140	82	S	28
NS737	20.9	71.0	14.6	180	55	3	0	80	34.3	137	35	MR-MS	57
Atlas 66	19.7	75.2	18.3	182	106	8	30	80	29.1	144	10	R-MR	10
Likafen	19.6	69.7	15.4	181	83	1	0	80	22.7	144	99	S	12
Caribo	18.6	63.9	16.8	185	95	2	3	95	21.8	150	70	S	31
Moldova	18.6	77.8	17.2	181	98	7	43	80	36.9	136	15	R-MR	28
Manella	16.0	63.3	17.2	185	89	1	5	85	22.3	149	46	S	55
Clarion	15.1	59.3	18.7	185	84	1	1	90	20.4	151	15	MR-S	58
Zenith	13.2	67.1	16.8	185	90	2	1	100	18.8	150	67	S	52
Marimp 3	12.3	71.3	15.7	183	81	4	2	70	25.6	138	68	S	38
Maris Nimrod	12.0	66.3	16.9	185	83	3	1	95	23.9	151	81	MS-S	37
Diplomat	11.6	66.4	17.1	185	85	1	6	98	22.0	154	95	S	37
Carifen 12	11.5	49.5	14.3	183	72	1	0	80	17.9	146	94	S	81
Jubilar	10.2	62.3	17.1	185	91	2	4	80	21.0	152	72	S	68
Lerma Rojo 64	2.5	--	18.2	180	75	9	0	2	31.8	136	91	S	1
Mean	21.7	72.0	15.9	182.0	86.1	2.8	8.3	81.7	29.6	142.4	40.2		36.4
L.S.D. of cultivar means (.05)	5.2	--	0.5	1.1	3.6	3.9	9.1	--	1.4	1.6	--		--
Coefficient of variation (%)	17.2	--	2.2	0.4	3.0	97.6	77.8	--	3.4	0.6	--		--

a) One replication only.
b) Two replications only.

UNITED STATES

New York

Ithaca

COOPERATOR(S): Neal F. Jensen.

DATE OF PLANTING (EFFECTIVE GERMINATION): September 26, 1973.

PRECIPITATION DURING CYCLE OF TEST: 875.8 mm (August 1, 1973 - July 31, 1974).

AMOUNT OF IRRIGATION APPLIED: None.

FERTILIZER USED: N = 33.6 kg/ha, P = 30.3 kg/ha, K = 57 kg/ha (applied preplant as a 10-20-20 formulation). On March 11, 1974 18.5 kg/ha of N was applied (as NH_4NO_3).

GENERAL DESCRIPTION OF CLIMATIC CONDITIONS DURING TEST: Normal, except unusually dry at maturity.

DISEASE DEVELOPMENT: Generally diseases were low or absent.

INSECT, WEED OR PEST PROBLEMS: Minimal.

DATE OF HARVEST: July 25 - 31, 1974.

AREA HARVESTED FOR YIELD: 3 square meters.

DATES WHEN DIFFERENT NOTES WERE TAKEN:
Winter survival - May 15, 1974
Height - mid July, 1974

Correlation Coefficients

	Yield	Test weight	Protein	Plant height
Test weight	.23*			
Number of observations	115			
Protein	-.19*	.10		
Number of observations	116	115		
Plant height	.33**	.30**	.23*	
Number of observations	116	115	116	
Winter survival	.58**	.18	-.10	.24**
Number of observations	120	115	116	116

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

Table 43. Agronomic, grain quality, and disease data for the 30 cultivars in the Sixth International Winter Wheat Performance Nursery grown at Ithaca, New York, U.S.A., 1974.

Cultivar	Yield q/ha	Test weight kg/hl	Protein %	Plant height cm	Winter survival %
Kavkaz	48.4	73.2	13.4	112	90
Aurora	47.5	76.3	13.8	105	85
Burgas 2	42.0	74.1	15.5	88	80
Zenith	36.2	63.6	14.9	98	79
Maris Nimrod	36.1	64.9	12.4	93	83
Blueboy	35.0	71.8	11.8	102	88
Bezostaya 1	34.0	78.4	13.2	96	82
Caribo	33.8	66.3	12.5	100	82
Blueboy II	33.4	73.4	13.2	101	89
Demar 4	32.8	77.8	12.9	87	86
Jubilar	32.1	64.2	12.5	110	84
Manella	31.6	70.3	12.5	94	83
Dacia	30.4	77.0	14.2	107	85
Sanja (Zg 5996/66)	30.1	72.6	12.0	76	86
Favorit	29.5	77.0	14.8	99	85
Atlas 66	29.1	75.5	15.1	115	77
Marimp 3	28.7	74.6	14.1	81	62
Lancota (NE701132)	28.5	77.5	14.5	107	88
Dwarf Bezostaya	27.9	72.9	13.2	68	86
Moldova	25.7	76.2	15.0	109	84
Zlatna Dolina	25.2	71.5	12.4	77	81
Diplomat	25.2	76.9	14.3	95	82
Clarion	22.2	65.0	13.9	88	80
Rousalka	22.0	72.1	14.1	78	86
Likafen	21.2	73.8	14.2	83	82
Kirac 66	20.6	73.7	15.1	109	79
NS732	20.3	67.0	12.9	57	71
Carifen 12	18.0	56.3	13.9	71	79
Bolal	16.2	76.1	13.9	113	89
Lerma Rojo 64	0.0	--	--	--	0
Mean	28.8	72.0	13.7	93.5	79.9
L.S.D. of cultivar means (.05)	5.5	5.3	0.8	4.9	6.7
Coefficient of variation (%)	13.6	5.2	4.4	3.8	6.0

UNITED STATES

North Carolina

Rowan County

COOPERATOR(S): C. F. Murphy.

DATE OF PLANTING (EFFECTIVE GERMINATION): October 12, 1973.

PRECIPITATION DURING CYCLE OF TEST: Not reported.

AMOUNT OF IRRIGATION APPLIED: Not reported.

FERTILIZER USED: N = 101 kg/ha, P_2O_5 = 103 kg/ha, K_2O = 97 kg/ha.

GENERAL DESCRIPTION OF CLIMATIC CONDITIONS DURING TEST: Warmest winter in 74 years. Wheat planted this early developed too fast. Blueboy filler planted five weeks later yielded 42 - 48 q/ha. A lot of wheat in South Carolina and Georgia didn't even vernalize.

DISEASE DEVELOPMENT: Some mildew, barley yellow dwarf virus, and a late infection of leaf rust.

INSECT, WEED OR PEST PROBLEMS: Not reported.

DATE OF HARVEST: June 5, 1974.

AREA HARVESTED FOR YIELD: 1.484 square meters.

DATES WHEN DIFFERENT NOTES WERE TAKEN:
Winter survival - March 29, 1974
Height - May 22, 1974
Lodging - May 22, 1974

Correlation Coefficients

	Yield	Test weight	Protein	Plant height	Lodging
Test weight	.62**				
Number of observations	29				
Protein	-.23*	.01			
Number of observations	116	29			
Plant height	.47**	.27	-.14		
Number of observations	116	29	116		
Lodging	-.09	.20	.32**	.39**	
Number of observations	116	29	116	116	
Winter survival	.59**	.31	-.34	.07	-.31
Number of observations	30	29	29	29	29

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

Table 44. Agronomic, grain quality, and disease data for the 30 cultivars in the Sixth International Winter Wheat Performance Nursery grown at Rowan County, North Carolina, U.S.A., 1974.

Cultivar	Yield q/ha	Test weight kg/hl	Protein %	Plant height cm	Lodging %	Winter[a] survival %
Dacia	38.9	76.6	13.6	108	8	100
Aurora	32.7	77.8	14.7	105	8	100
Kavkaz	28.7	75.9	14.6	105	18	100
Manella	27.4	67.5	13.5	96	0	100
Lancota (NE701132)	26.0	75.7	14.1	111	20	100
Burgas 2	25.9	71.7	15.1	82	3	100
Clarion	24.5	64.2	13.7	98	0	100
Bezostaya 1	23.9	72.9	14.8	94	10	90
Demar 4	23.8	74.1	13.9	89	1	100
Dwarf Bezostaya	23.2	75.6	14.1	72	0	100
Caribo	23.1	70.0	13.3	98	0	100
Blueboy II	22.5	67.6	13.7	89	5	100
Blueboy	22.2	68.9	12.2	91	6	100
Favorit	22.1	74.8	15.7	97	13	100
Maris Nimrod	21.6	64.1	12.6	95	0	100
Zenith	20.9	63.8	14.2	95	0	100
Zlatna Dolina	20.3	71.5	14.6	73	3	100
Diplomat	19.8	73.0	14.0	102	0	100
Jubilar	19.5	70.7	13.2	101	0	100
Marimp 3	19.3	72.9	14.3	73	0	80
Atlas 66	18.3	71.6	16.9	102	14	80
Moldova	17.1	72.6	16.0	95	15	100
Sanja (Zg 5996/66)	15.6	69.9	15.0	71	4	100
Bolal	14.5	73.5	14.4	99	35	100
Rousalka	14.2	71.0	14.7	68	4	90
Carifen 12	11.9	48.1	13.8	76	1	100
NS732	11.7	67.1	14.6	62	0	100
Likafen	11.0	67.1	14.0	87	1	100
Kirac 66	7.0	55.5	14.2	101	23	50
Lerma Rojo 64	0.0	--	--	--	--	2
Mean	20.2	69.9	14.3	90.7	6.5	93.1
L.S.D. of cultivar means (.05)	4.7	--	1.0	7.5	6.1	--
Coefficient of variation (%)	16.6	--	5.2	5.9	66.2	--

a) One replication only.

UNITED STATES

Oklahoma

Stillwater

COOPERATOR(S): E. L. Smith.

DATE OF PLANTING (EFFECTIVE GERMINATION): October 5, 1973.

PRECIPITATION DURING CYCLE OF TEST: 585 mm October 1, 1973 - June 30, 1974. From July 1, 1973 - June 30, 1974, 1064 mm of precipitation was measured.

AMOUNT OF IRRIGATION APPLIED: None.

FERTILIZER USED: N = 45 kg/ha. Top-dressed as NH_4NO_3 on January 29, 1974.

GENERAL DESCRIPTION OF CLIMATIC CONDITIONS DURING TEST: Freezing temperatures on March 21-25 (-9°C on March 21) and drought plus hot winds during the seed filling period in May caused severe damage to the nursery.

DISEASE DEVELOPMENT: Leaf rust, barley yellow dwarf virus, powdery mildew, and root rot caused some damage.

INSECT, WEED OR PEST PROBLEMS: None.

DATE OF HARVEST: June 12, 1974.

AREA HARVESTED FOR YIELD: 1.5 square meters.

DATES WHEN DIFFERENT NOTES WERE TAKEN:
Heading - April and May, 1974
Freeze damage - April and May, 1974
Leaf rust - May 15, 1974
Height - June 5, 1974
Ripening - June, 1974

Correlation Coefficients

	Yield	Test weight	Protein	Flowering	Ripening	Plant height
Test weight	.55**					
Number of observations	68					
Protein	.10	-.25*				
Number of observations	114	68				
Flowering	-.01	-.60**	.50**			
Number of observations	116	68	114			
Ripening	-.07	-.55**	.47**	.91**		
Number of observations	116	68	114	116		
Plant height	.28**	-.02	.23*	.30**	.36**	
Number of observations	116	68	114	116	116	
Frost	-.60**	.39**	-.38**	-.62**	-.47**	-.41**
Number of observations	115	67	113	115	115	115

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

Table 45. Agronomic, grain quality, and disease data for the 30 cultivars in the Sixth International Winter Wheat Performance Nursery grown at Stillwater, Oklahoma, U.S.A., 1974.

Cultivar	Yield q/ha	Test weight kg/hl	Protein %	Date of Flowering (days from Jan. 1)	Date of Ripening (days from Jan. 1)	Plant height cm	Frost damage 0-9	Leaf rust[a] Sev. %	Leaf rust[a] Resp.
Dwarf Bezostaya	17.1	72.4	19.0	119	146	46	1	7	S
Kavkaz	12.5	74.9	21.1	122	150	66	2	0	0
Burgas 2	12.1	72.1	20.3	115	147	61	6	0	0
Manella	11.2	63.3	21.8	126	151	66	1	20	S
Rousalka	11.1	72.9	18.9	111	141	58	3	10	0-S
Dacia	10.8	72.1	19.8	120	149	68	4	10	S
Bezostaya 1	10.4	73.8	19.3	118	147	56	5	5	0-S
Aurora	10.2	74.2	20.5	121	149	59	4	0	0
Blueboy II	9.3	69.5	19.8	117	152	67	4	2	0-S
Clarion	9.0	60.5	22.6	130	157	67	1	5	M-S
Lancota (NE701132)	9.0	72.0	21.2	121	149	73	3	2	0-S
Sanja (Zg 5996/66)	7.8	66.4	19.6	112	142	52	6	10	S
Maris Nimrod	7.6	63.8	18.4	129	156	59	2	5	0-S
Favurit	7.3	71.7	20.4	116	146	61	6	20	S
Carifen 12	7.3	60.5	18.7	126	150	55	1	50	S
Blueboy	6.9	67.6	17.5	115	149	64	6	40	S
Caribo	6.7	64.4	19.9	129	156	63	3	12	S
Zenith	6.6	62.8	22.0	131	156	61	1	10	S
Jubilar	6.5	63.4	22.0	133	158	63	1	7	S
Zlatna Dolina	4.8	69.0	20.1	112	143	48	9	3	S
Demar 4	4.7	--	18.3	116	143	57	6	40	S
Diplomat	4.5	--	21.0	136	160	60	1	10	S
Likafen	4.1	--	19.4	122	150	62	6	60	S
Moldova	4.0	--	20.2	114	145	59	8	5	0-S
Bolal	3.8	71.1	17.2	114	146	66	6	50	S
MS732	3.8	--	17.9	111	140	46	6	30	S
Marimp 3	1.2	--	19.1	115	148	44	9	10	0-S
Atlas 66	1.0	--	21.1	123	153	55	9	3	S
Kirac 66	0.8	--	18.7	122	151	57	9	30	0-S
Lerma Rojo 64	0.0	--	--	--	--	--	--	--	--
Mean	7.1	68.4	19.8	120.5	149.2	59.1	4.3	15.2	
L.S.D. of cultivar means (.05)	2.6	3.6	1.0	1.2	1.5	5.2	1.2	--	
Coefficient of variation (%)	26.7	3.2	3.4	0.7	0.7	6.2	20.5	--	

a) Two replications only.

UNITED STATES

Oregon

Corvallis

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

DATE OF PLANTING (EFFECTIVE GERMINATION): October 5, 1973.

PRECIPITATION DURING CYCLE OF TEST: 1854.2 mm.

AMOUNT OF IRRIGATION APPLIED: None.

FERTILIZER USED: Fall - N = 11.5 kg/ha (NH_4SO_4), Spring - N = 75.6 kg/h (Urea).

GENERAL DESCRIPTION OF CLIMATIC CONDITIONS DURING TEST: Extremely wet until the end of May.

DISEASE DEVELOPMENT: Stripe rust, some late season leaf rust.

INSECT, WEED OR PEST PROBLEMS: None.

DATE OF HARVEST: July 28, 1974.

AREA HARVESTED FOR YIELD: 4.46 square meters.

DATES WHEN DIFFERENT NOTES WERE TAKEN:
Stripe rust - June 7, 1974
Height - July 19, 1974

Correlation Coefficients

	Yield	Test weight	Protein	Plant height
Test weight	.24			
Number of observations	28			
Protein	-.39**	-.19		
Number of observations	111	28		
Plant height	-.09	.42*	-.05	
Number of observations	28	28	28	
Winter survival	.81**	.42*	-.04	.36
Number of observations	32	28	29	29

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

Table 46. Agronomic, grain quality, and disease data for the 30 cultivars in the Sixth International Winter Wheat Performance Nursery grown at Corvallis, Oregon, U.S.A., 1974.

Cultivar	Yield q/ha	Test[a] weight kg/hl	Protein %	Plant[a] height cm	Winter[a] survival %	Stripe rust[a] Sev. %	Stripe rust[a] Resp.
Maris Nimrod	79.0	77.8	11.7	125	60	0	0
Caribo	75.0	78.4	10.8	135	70	1	MS-S
Clarion	74.5	77.4	11.2	120	70	0	0-MS
Carifen 12	74.0	79.9	11.1	90	80	2	MR
Demar 4	72.6	78.7	12.5	110	50	10	S
Manella	68.9	79.1	11.5	125	80	1	MR-MS
Zenith	68.0	80.2	13.0	125	70	1	MR-MS
Diplomat	65.9	81.5	12.2	130	80	0	0-MS
Kavkaz	65.7	77.4	14.5	120	40	19	R-S
Jubilar	64.6	78.4	11.6	130	90	3	MR
Blueboy II	62.1	74.1	12.7	125	60	25	MS
Dwarf Bezostaya	61.6	78.7	13.5	85	50	13	MS
Dacia	61.3	77.4	13.9	140	PD	25	MS
Aurora	60.6	78.3	15.4	120	70	4	MR
Zlatna Dolina	60.5	72.2	12.0	100	60	82	S
Blueboy	59.2	74.3	11.1	125	60	56	MS-S
Sanja (Zg 5996/66)	59.1	74.2	12.2	95	50	13	MS
Likafen	58.8	77.4	11.8	115	40	0	0-MS
Bezostaya 1	57.8	78.3	13.4	120	60	15	R-MS
Burgas 2	54.7	73.9	17.4	95	60	1	MR
Rousalka	53.2	77.8	15.4	95	60	1	R-MS
Favorit	52.0	76.8	14.2	115	70	31	MS-S
Moldova	48.6	73.3	16.2	120	60	10	S
Atlas 66	42.3	78.4	14.9	150	50	43	R-S
Lancota (NE701132)	40.5	77.7	16.4	135	60	17	MR
Marimp 3	37.4	75.5	14.1	100	20	68	S-VS
NS732	33.7	72.0	13.3	70	30	60	S
Kirac 66	22.0	78.4	13.4	140	40	5	MR-MS
Lerma Rojo 64	0.0	--	11.1	--	0	0	0
Bolal	-- [b]	--	11.7	125	70	75	MS-S
Mean	56.3	77.1	13.2	116.6	52.7	20.4	
L.S.D. of cultivar means (.05)	10.0	--	0.9	--	--	--	
Coefficient of variation (%)	12.7	--	4.9	--	--	--	

a) Based on 1 replication only.
b) Cultivar was not harvested.

UNITED STATES

Washington

Pullman

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

DATE OF PLANTING (EFFECTIVE GERMINATION): October 8, 1973.

PRECIPITATION DURING CYCLE OF TEST: 718 mm (September 1, 1973 - September 1, 1974)

AMOUNT OF IRRIGATION APPLIED: None.

FERTILIZER USED: Each plot was split and separate rates were used on each half. N = 67 kg/ha, and 134 kg/ha.

GENERAL DESCRIPTION OF CLIMATIC CONDITIONS DURING TEST: Early fall was dry. The spring was very cold, resulting in decreased yields.

DISEASE DEVELOPMENT: Not reported.

INSECT, WEED OR PEST PROBLEMS: None.

DATE OF HARVEST: August 14, 1974.

AREA HARVESTED FOR YIELD: 3 square meters.

DATES WHEN DIFFERENT NOTES WERE TAKEN:
Not reported

Correlation Coefficients

	Yield	Test weight	Protein
Test weight	-.20*		
Number of observations	120		
Protein	.13	.36**	
Number of observations	119	119	
Plant height	.54**	.20	.19
Number of observations	60	60	59

**Significant at the 1% level.

*Significant at the 5% level.

Table 47. Agronomic, grain quality, and disease data for the 30 cultivars in the Sixth International Winter Wheat Performance Nursery grown at Pullman, Washington, U.S.A., 1974.

Cultivar	Yield q/ha	Test weight kg/hl	Protein %	Plant[a] height cm	Date of heading days from Jan. 1	Rust: Stripe Sev. %	Rust: Leaf Sev. %
Maris Nimrod	41.1	56.4	12.6	76	168	7	25
Blueboy II	37.8	59.5	13.3	84	163	20	12
Caribo	33.4	56.3	11.9	84	168	6	70
Lancota (NE701132)	33.0	62.5	15.2	84	162	27	20
Burgas 2	32.0	61.0	14.6	76	163	5	30
Blueboy	32.0	58.5	12.4	83	164	37	25
Clarion	31.8	58.4	13.1	64	167	12	22
Likafen	31.3	62.9	13.6	74	165	2	62
Aurora	30.9	62.0	14.6	79	163	16	40
Manella	29.2	57.4	11.7	75	165	12	62
Moldova	28.9	60.6	15.7	77	160	32	30
Favorit	27.6	61.5	14.5	75	161	37	32
Jubilar	27.3	58.9	12.1	94	168	5	72
Zenith	27.0	59.9	12.8	81	166	12	72
Diplomat	26.8	60.3	13.4	86	170	3	70
Carifen 12	26.1	52.9	12.3	64	168	2	82
Demar 4	26.0	60.1	12.2	81	161	12	72
Dacia	25.9	61.1	14.6	79	161	18	15
Dwarf Bezostaya	25.9	60.8	12.3	64	163	27	62
Bolal	24.6	61.6	10.8	86	161	62	5
Marimp 3	24.6	59.8	13.6	72	160	32	57
Bezostaya 1	24.4	63.3	13.4	83	163	17	65
Atlas 66	22.9	60.5	16.0	92	164	22	10
Kavkaz	22.6	61.6	13.6	85	165	2	25
Rousalka	22.5	61.5	14.3	64	159	11	7
Zlatna Dolina	22.0	58.9	13.1	61	164	27	32
Sanja (Zg 5996/66)	20.5	60.0	12.8	57	161	45	12
Kirac 66	20.4	63.0	13.7	93	164	5	77
MS732	13.4	57.6	12.8	50	159	32	57
Lerma Rojo 64	12.3	59.9	10.0	59	160	27	30
Mean	26.8	59.9	13.4	75.8	163.4	19.1	41.7
L.S.D. of cultivar means (.05)	9.1	1.6	0.8	12.8	1.9	—	—
Coefficient of variation (%)	24.3	1.9	4.5	8.3	0.8	—	—
Local cultivars							
Rugaines	28.4	60.0	10.6	62.2	165	15	78
Cerco	31.0	58.6	12.1	63.5	165	4	85

a) Two replications only.

U.S.S.R.

Krasnodar

COOPERATOR(S): Y. M. Puchkov.

DATE OF PLANTING (EFFECTIVE GERMINATION): October 23, 1973.

PRECIPITATION DURING CYCLE OF TEST: 466 mm (October 20, 1973 - July 1, 1974).

AMOUNT OF IRRIGATION APPLIED: None.

FERTILIZER USED: N = 120 kg/ha, P_2O_5 = 206 kg/ha, K_2O = 54 kg/ha.

GENERAL DESCRIPTION OF CLIMATIC CONDITIONS DURING TEST: Moderately hot summer with a satisfactory water supply provided good development conditions. Lowest winter temperature was -15°C with 15 - 20 cm of snow.

DISEASE DEVELOPMENT: Very weak.

INSECT, WEED OR PEST PROBLEMS: Stink bugs, sawflies and cereal leaf beetle.

DATE OF HARVEST: July 2 - 12, 1974.

AREA HARVESTED FOR YIELD: 6.6 square meters.

DATES WHEN DIFFERENT NOTES WERE TAKEN:
Winter hardiness - March 19, 1974
Powdery mildew - May 14 and June 3, 1974
Stripe rust - June 13, 1974
Lodging - June 24, 1974
Leaf rust - June 25, 1974
Stem rust - June 29, 1974

Correlation Coefficients

	Yield	Test weight	Protein	Flowering	Ripening	Plant height	Lodging	Shattering
Test weight	.46**							
Protein	.13	.45**						
Flowering	-.48**	-.61**	-.16					
Ripening	-.54**	-.65**	-.29**	.93**				
Plant height	.03	.13	.52**	.25**	.11			
Lodging	.07	.20*	.47**	-.09	-.15	.73**		
Shattering	.11	.02	-.19*	-.24**	-.17	-.28**	-.18*	
1000-kernel weight	.57**	.62**	.34**	-.71**	-.68**	-.08	.05	.07

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

Table 48. Agronomic, grain quality, and disease data for the 30 cultivars in the Sixth International Winter Wheat Performance Nursery grown at Krasnodar, U.S.S.R., 1974.

Cultivar	Yield g/ha	Test weight kg/hl	Protein %	Date of Flowering (days from Jan. 1)	Date of Ripening (days from Jan. 1)	Plant height cm	Lodging %	Shattering %	1000-kernel weight gm	Rust[a] Stripe Sev. %	Rust[a] Stripe Resp.	Rust[a] Leaf Sev. %	Rust[a] Leaf Resp.	Rust[a] Stem Sev. %	Rust[a] Stem Resp.	Mildew[a] Sev. %
Zlatna Dolina	70.1	78.0	13.8	147	179	76	0	1	38.4	5	MS	1	MR	0	MR	5
Favorit	68.2	81.0	16.8	142	180	107	73	0	44.5	5	S	1	MS	1	MS	1
Kavkaz	67.7	80.0	16.1	149	185	103	10	2	46.7	0	VR	2	S	0	VR	6
Bolal	66.4	81.1	14.6	143	180	117	80	0	43.1	0	VR	1	MS	0	VR	0
Blueboy II	66.1	75.1	13.8	147	182	107	43	10	33.2	0	MS	0	VR	1	MS	47
Dacia	65.5	80.3	16.6	148	180	111	45	1	44.9	0	VR	0	VR	1	MS	3
Blueboy	65.1	74.2	13.2	148	182	104	40	0	35.2	0	VR	2	MS	2	S	21
Bezostaya 1	64.4	80.7	14.6	145	182	99	35	0	42.8	1	MS	3	MS	5	S	14
Aurora	64.2	79.5	15.6	147	182	99	20	0	45.0	0	VR	5	S	0	VR-R	13
Moldova	64.0	79.5	16.9	140	176	114	53	0	42.1	0	VR	0	VR	3	S	0
Demar 4	63.2	80.4	13.8	143	181	91	5	3	39.4	0	VR	5	S	8	S	1
Rousalka	63.0	78.2	15.3	138	175	79	0	0	48.4	0	VR	0	VR	3	S	4
Burgas 2	63.0	75.4	15.5	148	185	82	15	0	40.2	0	VR	5	S	0	VR	32
Marimp 3	61.7	81.1	15.8	145	179	94	18	4	35.0	0	R	1	MS	1	MR-MS	1
Sanja (Zg 5996/66)	60.0	77.6	14.1	144	179	74	3	3	35.2	1	MS	0	VR	0	VR	0
Lancota (NE701132)	58.9	81.4	16.8	149	182	115	70	0	37.1	0	VR	0	MR	0	VR	0
Lerma Rojo 64	57.8	80.2	15.0	138	176	94	48	0	39.7	0	VR	0	0	0	VR	8
Manella	55.6	75.6	13.5	153	188	105	33	0	33.5	0	VR	2	S	5	S	1
NS732	54.1	77.1	13.5	138	180	60	0	10	44.9	0	VR	0	VR	0	VR	0
Zenith	49.9	75.4	14.6	155	190	98	10	0	28.9	0	VR	1	MS	15	S	4
Maris Nimrod	49.7	68.9	13.4	154	190	96	45	0	32.9	0	VR	3	MS	5	S	0
Likafen	49.7	78.5	14.4	151	187	90	8	0	30.9	5	S	0	MS	0	VR	13
Jubilar	48.5	70.5	14.5	155	191	105	55	1	29.5	0	VR	2	S	8	S	3
Caribo	47.0	72.8	13.6	155	189	105	10	0	33.5	0	VR	1	MS	3	S	3
Dwarf Bezostaya	46.6	78.3	13.2	144	183	67	0	0	39.3	10	S	2	MS	3	R	14
Carifen 12	46.4	69.8	13.2	152	187	79	0	0	29.4	0	VR	15	S	3	S	15
Kirac 66	45.4	79.8	15.7	150	184	118	75	0	34.3	0	VR	8	S	0	VR	32
Atlas 66	44.0	76.8	17.7	148	182	122	70	0	35.6	10	S	0	VR	1	MR	0
Diplomat	43.7	75.2	14.9	157	193	100	5	2	32.8	0	VR	1	MS	3	S	47
Clarion	40.4	69.9	14.9	158	191	95	8	0	28.3	0	VR	1	MS	1	MR-MS	10
Means	57.0	77.1	14.8	147.6	183.3	96.7	29.1	1.2	37.5	1.2		2.1		2.4		9.9
L.S.D. of cultivar means (.05)	10.6	2.5	0.4	0.5	0.5	4.5	16.5	1.4	2.4	--		--		--		--
Coefficient of variation (%)	13.2	2.3	1.9	0.2	0.2	3.3	40.3	84.6	4.5	--		--		--		--

a) Based on two replications only.

WEST GERMANY

Monsheim

COOPERATOR(S): A. Lein.

DATE OF PLANTING (EFFECTIVE GERMINATION): October 26, 1973.

PRECIPITATION DURING CYCLE OF TEST: 421 mm (October, 1973 - July, 1974).

AMOUNT OF IRRIGATION APPLIED: None.

FERTILIZER USED: N = 140 kg/ha (80 kg/ha on February 26, 60 kg/ha on May 6)
K_2O - 200 kg/ha.

GENERAL DESCRIPTION OF CLIMATIC CONDITIONS DURING TEST: No frost damage. Dry weather in December, January and April. Water was sufficient for ripening.

DISEASE DEVELOPMENT: Mildew was present in the spring, but no rusts were observed.

INSECT, WEED OR PEST PROBLEMS: None.

DATE OF HARVEST: August 13, 1974.

AREA HARVESTED FOR YIELD: 5.25 square meters.

DATES WHEN DIFFERENT NOTES WERE TAKEN:
Mildew - May 9, 1974
Lodging - July 19, 1974

Correlation Coefficients

	Yield	Protein	Flowering	Plant height	Lodging
Protein	-.41**				
Flowering	.44**	-.13			
Plant height	-.11	.51**	.16		
Lodging	-.14	.19*	-.14	.29**	
1000-kernel weight	.18*	.02	-.27**	-.10	-.08

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

Table 49. Agronomic, grain quality, and disease data for the 30 cultivars in the Sixth International Winter Wheat Performance Nursery grown at Monsheim, West Germany, 1974.

Cultivar	Yield q/ha	Protein %	Date of flowering days from Jan. 1	Plant height cm	Lodging %	1000-kernel weight gm
Maris Nimrod	60.2	13.6	151	65	0	47
Aurora	53.8	14.9	148	68	0	46
Bezostaya 1	51.7	13.8	146	70	2	42
Manella	50.4	13.8	149	74	0	44
Kavkaz	50.3	15.0	150	72	0	46
Zlatna Dolina	49.5	13.6	139	64	0	40
Zenith	49.0	14.8	152	68	0	34
Dwarf Bezostaya	48.4	12.3	146	45	0	38
Caribo	48.3	13.3	152	70	0	38
Jubilar	48.1	13.6	151	70	0	38
Burgas 2	47.9	16.2	147	63	0	41
Clarion	47.7	13.6	152	68	0	41
Sanja (Zg 5996/66)	47.3	13.8	140	60	0	38
Blueboy	47.3	12.5	146	73	1	35
Carifen 12	46.9	13.9	149	55	1	34
Favorit	46.8	15.4	142	72	23	41
Bolal	45.2	14.0	143	73	71	38
Marimp 3	44.8	14.8	141	67	1	39
Dacia	42.4	16.6	146	77	10	42
Blueboy II	41.5	13.8	147	72	1	32
Diplomat	39.4	14.2	152	70	0	40
Likafen	39.4	14.2	149	66	0	32
Atlas 66	39.3	18.1	146	80	29	37
Moldova	38.4	15.9	140	74	17	40
Rousalka	37.1	15.7	138	66	0	47
Kirac 66	36.4	15.9	148	74	13	35
Demar 4	35.8	14.0	141	69	0	41
Lancota (NE701132)	35.7	18.9	147	76	3	35
NS732	34.2	13.3	134	45	0	49
Lerma Rojo 64	32.9	16.6	133	76	11	44
Mean	44.5	14.7	145.4	68.0	6.1	39.6
L.S.D. of cultivar means (.05)	4.8	0.5	2.8	3.3	12.0	2.6
Coefficient of variation (%)	7.6	2.4	1.4	3.5	139.8	4.7

WEST GERMANY

Weihenstephan

COOPERATOR(S): G. Fischbeck.

DATE OF PLANTING (EFFECTIVE GERMINATION): October 17, 1974.

PRECIPITATION DURING CYCLE OF TEST: 772 mm.

AMOUNT OF IRRIGATION APPLIED: None.

FERTILIZER USED: N = 20 kg/ha, P_2O_5 = 100 kg/ha, K_2O = 200 kg/ha.

GENERAL DESCRIPTION OF CLIMATIC CONDITIONS DURING TEST: Mild winter. The growing season was cool and rainy.

DISEASE DEVELOPMENT: Root rot, stem and leaf diseases generally low to medium. Ear diseases (mildew and head blight) were medium to severe.

INSECT, WEED OR PEST PROBLEMS: None.

DATE OF HARVEST: August 12 - 19, 1974.

AREA HARVESTED FOR YIELD: 1.52 square meters.

DATES WHEN DIFFERENT NOTES WERE TAKEN:
Not reported.

Correlation Coefficients

	Yield	Test weight	Protein	Flowering	Ripening	Plant height
Test weight	.55**					
Number of observations	120					
Protein	-.67**	-.32**				
Number of observations	120	120				
Flowering	.31**	.20*	-.44**			
Number of observations	120	120	120			
Ripening	.24	.10	-.43*	.89**		
Number of observations	30	30	30	30		
Plant height	-.08	.17	.15	.41**	.32	
Number of observations	120	120	120	120	30	
Lodging	-.61**	-.34**	.58**	.16	-.12	.55**
Number of observations	120	120	120	120	30	120

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

Table 50. Agronomic, grain quality, and disease data for the 30 cultivars in the Sixth International Winter Wheat Performance Nursery grown at Weihenstephan, West Germany, 1974.

Cultivar	Yield q/ha	Test weight kg/hl	Protein %	Date of Flowering[a] days from Jan. 1	Date of Ripening[a] days from Jan. 1	Plant height cm	Lodging %	Spike[b] discoloration 1-9	Ears/m^2	Plant[c] growth 1-9	Mildew Sev. %
Caribo	93.0	77.4	10.3	159	229	121	0	3	615	3	2
Maris Nimrod	92.3	74.6	10.1	158	229	107	8	4	639	2	1
Zenith	86.1	80.2	11.6	158	229	111	3	3	597	3	1
Demar 4	81.2	78.8	11.5	147	224	99	3	4	706	6	1
Marimp 3	80.8	77.7	12.7	149	225	99	5	4	577	6	2
Sanja (Zg 5996/66)	80.1	75.8	11.4	145	224	83	8	2	722	4	2
Clarion	79.7	76.0	11.0	162	237	107	8	4	573	2	1
Zlatna Dolina	79.3	76.3	11.3	145	224	89	5	3	712	4	1
Diplomat	75.9	80.8	11.6	164	231	121	3	3	569	3	3
Kavkaz	75.0	78.0	12.3	156	229	114	30	3	634	6	3
Bezostaya 1	74.7	81.0	11.0	150	228	106	18	3	606	5	3
Aurora	73.8	80.4	11.0	154	229	104	20	4	580	5	2
Blueboy	70.4	73.6	10.5	150	227	109	48	4	659	4	4
Carifen 12	69.5	66.8	10.9	156	229	83	0	5	771	4	3
Manella	67.2	74.4	12.5	158	229	111	40	5	660	2	2
Dacia	66.2	76.0	12.8	148	226	112	40	3	510	5	3
Moldova	63.5	73.4	14.0	142	224	109	53	4	569	7	2
Burgas 2	63.3	76.3	12.4	150	227	90	0	4	630	5	3
Favorit	63.1	74.6	13.4	148	226	104	60	3	681	5	2
Dwarf Bezostaya	62.7	77.1	12.3	154	229	77	0	4	682	5	3
Blueboy II	62.6	73.2	11.6	150	227	115	43	5	738	5	4
Jubilar	62.6	74.4	11.8	164	231	110	13	3	590	2	2
Rousalka	61.2	76.8	13.5	140	224	84	8	3	571	5	1
NS732	55.2	68.5	13.7	140	224	72	0	4	583	6	1
Likafen	52.6	73.0	12.1	156	229	109	28	5	795	3	5
Atlas 66	52.2	75.2	15.3	150	228	129	70	3	711	6	1
Lerma Rojo 64	50.4	73.5	13.9	139	224	99	25	4	688	7	4
Bolal	44.3	71.6	13.7	148	226	117	73	4	727	6	3
Lancota (NE701132)	43.0	75.2	15.1	150	227	117	65	3	783	3	2
Kirac 66	38.8	70.6	13.9	153	228	123	75	5	752	3	3
Mean	67.3	75.3	12.3	151.4	227.4	104.2	24.8	3.7	654.1	4.4	2.3
L.S.D. of cultivar means (.05)	8.3	2.1	1.0	0.7	--	5.6	18.3	1.0	122.8	0.7	--
Coefficient of variation (%)	8.7	2.0	5.8	0.3	--	3.8	52.5	20.6	13.4	11.0	--

a) One replication only.
b) 1 = good; 9 = bad.
c) 1 = prostrate; 9 = upright.

YUGOSLAVIA

Novi Sad

COOPERATOR(S): S. Borojevic'.

DATE OF PLANTING (EFFECTIVE GERMINATION): November 3, 1973.

PRECIPITATION DURING CYCLE OF TEST: 488.3 mm.

AMOUNT OF IRRIGATION APPLIED: None.

FERTILIZER USED: N = 60 kg/ha, P_2O_5 = 90 kg/ha, K_2O = 60 kg/ha.

GENERAL DESCRIPTION OF CLIMATIC CONDITIONS DURING TEST: Not reported.

DISEASE DEVELOPMENT: Not reported.

INSECT, WEED OR PEST PROBLEMS: None.

DATE OF HARVEST: July 31, 1974.

AREA HARVESTED FOR YIELD: 4 square meters.

DATES WHEN DIFFERENT NOTES WERE TAKEN:
Not reported

Correlation Coefficients

	Yield	Test weight	Protein	Flowering	Ripening	Plant height
Test weight	.11					
Protein	-.50**	.33**				
Flowering	.04	.09	.19*			
Ripening	.20*	.27**	.21*	.79**		
Plant height	-.14	.51**	.61**	.19*	.26**	
Lodging	-.51**	-.22*	.35**	-.39**	-.49**	.23*

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

Table 51. Agronomic, grain quality, and disease data for the 30 cultivars in the Sixth International Winter Wheat Performance Nursery grown at Novi Sad, Yugoslavia, 1974.

Cultivar	Yield q/ha	Test weight kg/hl	Protein %	Date of Flowering (days from Jan. 1)	Date of Ripening (days from Jan. 1)	Plant height cm	Lodging %	Rust: Stripe Sev. %	Rust: Leaf Sev. %	Rust: Leaf Resp.	Rust: Stem Sev. %	Rust: Stem Resp.
Blueboy	54.7	74.3	13.5	145	189	96	40	47	10	MS-VS	21	MS-VS
Dwarf Bezostaya	53.8	74.1	12.7	144	189	67	0	52	3	O-VS	6	O-VS
Zlatna Dolina	53.1	74.1	12.6	142	188	84	15	18	1	O-S	3	O-VS
Caribo	53.0	74.6	14.0	151	197	95	0	42	22	VS	32	VS
Sanja (Zg 5996/66)	52.5	73.7	12.3	142	187	75	10	18	3	R-S	10	MS-S
Blueboy II	51.3	72.7	13.9	145	191	94	38	52	3	O-MS	0	O-MS
Carifen 12	50.5	68.7	13.9	150	189	74	10	40	8	S-VS	47	S-VS
Zenith	49.8	75.2	15.6	143	197	94	0	20	15	VS	42	VS
Demar 4	49.1	75.8	13.5	144	189	88	0	30	10	S-VS	40	MS-VS
Maris Nimrod	48.9	71.1	13.9	150	196	86	73	7	1	S-VS	37	S-VS
Clarion	48.0	72.8	14.6	154	195	91	0	42	4	S-VS	40	S-VS
Rousalka	48.0	74.1	14.1	140	189	79	48	27	1	R-S	3	O-VS
Burgas 2	47.6	72.9	14.7	145	192	85	13	55	3	MR-MS	0	0
Bezostaya 1	46.8	77.0	14.4	143	189	92	45	45	1	MR-VS	16	S-VS
Favorit	46.5	75.9	16.3	142	189	92		37	1	S-VS	13	S-VS
Likafen	46.4	75.3	15.1	147	193	85	3	67	3	MS-S	22	S-VS
Bolal	46.3	74.5	14.1	141	186	104	99	52	0	O-VS	0	O-S
Aurora	45.2	76.0	15.3	146	190	97	15	57	3	MS-VS	0	O-S
Jubilar	45.2	74.1	15.3	154	197	96	20	15	11	S-VS	50	S-VS
Moldova	44.4	72.4	15.8	140	186	100	90	35	0	O-S	3	MS-S
Diplomat	44.0	77.8	14.6	155	198	95	0	57	17	VS	42	VS
Dacia	43.6	76.1	16.0	146	189	100	75	35	1	S-VS	21	S-VS
Kavkaz	42.9	74.8	16.6	149	193	101	8	40	2	MS-S	2	MS-S
Manella	41.0	73.2	15.4	150	194	95	58	26	10	S-VS	40	S-VS
Lerma Rojo 64	37.8	73.6	15.2	139	186	95	95	57	0	0	0	0
Atlas 66	36.7	75.0	18.0	146	191	100	87	8	3	MR-S	9	MR-S
Lancota (NE701132)	35.3	74.9	17.6	147	190	99	95	35	4	R-S	7	O-MS
NS732	35.0	64.1	12.3	141	184	58	92	7	0	O-VS	2	O-VS
Marimp 3	32.0	74.4	14.4	143	187	88	58	37	3	O-VS	7	MS-VS
Kirac 66	29.7	72.5	16.4	147	189	98	99	52	4	S-VS	55	S-VS
Mean	45.3	73.8	14.7	145.7	190.6	90.0	42.5	37.1	4.9		19.0	
L.S.D. of cultivar means (.05)	6.2	1.5	0.7	1.0	0.1	6.8	18.0	--	--		--	
Coefficient of variation (%)	9.7	1.5	3.6	0.5	0.0	5.4	30.2	--	--		--	

YUGOSLAVIA

Zagreb

COOPERATOR(S): J. Potocanac, R. Milnar.

DATE OF PLANTING (EFFECTIVE GERMINATION): October 29, 1973.

PRECIPITATION DURING CYCLE OF TEST: 799.7 mm.

AMOUNT OF IRRIGATION APPLIED: None.

FERTILIZER USED: Preplant: N = 45 kg/ha, P_2O_5 = 90 kg/ha, K = 90 kg/ha.
Spring: N = 135 kg/ha (KAN).

GENERAL DESCRIPTION OF CLIMATIC CONDITIONS DURING TEST: The autumn was dry and cold. The winter was mild without snow. April was dry, May was rainy, June was moderately rainy and it rained during the harvesting period.

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

INSECT, WEED OR PEST PROBLEMS: None.

DATE OF HARVEST: July 23, 1974.

AREA HARVESTED FOR YIELD: 4.00 square meters.

DATES WHEN DIFFERENT NOTES WERE TAKEN:
Winter survival - April 3, 1974
Lodging - July 22, 1974
Leaf rust - July 1, 1974
Stem rust - July 8, 1974

Correlation Coefficients

	Yield	Test weight	Protein	Flowering	Ripening	Plant height	Lodging
Test weight	.54						
Protein	-.07	.33					
Flowering	-.44**	-.54**	-.49**				
Ripening	-.22*	-.24	-.23*	.66**			
Plant height	-.38**	-.25	.07	.45**	.43**		
Lodging	-.52**	-.07	.57**	-.09	.06	.48**	
Winter survival	.09	-.12	.01	-.09	-.20*	.02	.01

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

Table 52. Agronomic, grain quality, and disease data for the 30 cultivars in the Sixth International Winter Wheat Performance Nursery grown at Zagreb, Yugoslavia, 1974.

Cultivar	Yield q/ha	Test[a] weight kg/hl	Protein %	Date of Flowering days from Jan. 1	Date of Ripening days from Jan. 1	Plant height cm	Lodging %	Winter survival %	Rust[a] Leaf Sev. %	Rust[a] Leaf Resp.	Rust[a] Stem Sev. %	Rust[a] Stem Resp.
Kavkaz	65.7	79.9	13.6	150	197	115	21	98	1	R	4	MR
Aurora	63.4	80.3	13.1	149	190	109	8	100	5	R	5	MR
Demar 4	61.0	70.4	12.5	147	189	103	8	100	40	S	55	S
Zlatna Dolina	58.2	75.9	12.8	144	191	89	4	100	10	R	5	S
Sanja (Zg 5996/66)	56.1	76.1	12.4	144	191	84	1	99	2	R	10	MS
Marimp 3	54.1	75.7	13.8	143	185	105	43	99	50	S	20	S
Rousalka	53.3	78.0	14.6	141	186	91	21	100	5	S	50	MS
Burgas 2	51.1	77.0	14.1	149	193	97	0	99	5	R	10	R
Bezostaya 1	48.4	78.2	13.1	146	195	107	55	99	5	S	10	S
NS732	48.2	74.7	13.0	141	189	66	8	98	2	R	35	S
Dacia	47.0	76.7	13.8	147	195	120	59	99	50	S	25	S
Blueboy II	45.9	69.2	12.9	149	197	111	57	99	10	R	20	MR
Favorit	43.2	77.4	14.9	146	194	106	98	100	60	S	55	S
Moldova	43.2	77.2	14.7	142	183	110	80	99	30	S	15	MS
Dwarf Bezostaya	43.1	78.0	12.5	147	191	75	0	99	5	R	20	S
Jubilar	40.3	64.9	10.8	157	197	118	5	99	60	S	50	S
Manella	39.5	70.3	11.3	153	196	111	38	99	45	S	45	S
Carifen 12	39.4	77.5	11.9	153	185	94	0	100	60	S	45	S
Diplomat	38.7	75.3	11.4	163	198	120	0	99	20	S	25	MS
Bolal	37.9	75.9	13.7	146	194	118	99	100	70	S	15	R
Lerma Rojo 64	37.6	77.7	15.6	140	180	102	99	100	0	0	15	R
Maris Nimrod	35.9	59.4	11.8	156	194	109	50	100	15	S	40	MS
Lancota (NE701132)	35.1	76.9	13.9	149	195	123	92	99	10	S	20	S
Likafen	33.9	73.6	13.5	153	198	104	55	99	5	MR	10	MR
Clarion	32.2	60.0	12.5	159	195	109	5	98	40	S	35	S
Atlas 66	29.9	73.9	15.9	149	198	123	93	99	15	S	15	MS
Zenith	28.5	72.0	12.9	161	200	109	70	99	40	S	30	MS
Caribo	27.7	59.9	12.2	161	195	118	81	99	25	S	30	S
Blueboy	27.0	57.7	11.1	149	189	114	45	99	50	S	60	MS
Kirac 66	16.7	68.9	15.0	151	192	119	99	99	15	S	10	MR
Mean	42.7	73.0	13.2	149.4	192.4	105.8	43.1	99.1	25.0		26.1	
L.S.D. of cultivar means (.05)	6.6	--	0.9	0.3	0.4	4.1	27.6	1.3	--		--	
Coefficient of variation (%)	11.0	--	4.9	0.2	0.1	2.8	45.6	0.9	--		--	

a) One replication only.

Table 53. Summary of average yield in quintals per hectare for cultivars grown in the Sixth International Winter Wheat Performance Nursery, 1974.

Cultivar	Kabul, Afghanistan	Kunduz, Afghanistan	Balcarce, Argentina	Bordenave, Argentina	Vienna, Austria	Tolbukhin, Bulgaria	Temuco, Chile	Cambridge,[a] England
Kavkaz	57.0	41.4	8.6	17.9	51.7	37.3	62.7	44.1
Aurora	64.1	38.1	6.4	28.3	47.5	39.6	60.2	37.2
Burgas 2	61.3	40.4	13.3	32.5	43.3	36.7	54.7	43.5
Bezostaya 1	57.8	42.3	18.2	28.1	48.4	45.0	43.2	48.4
Maris Nimrod	46.6	29.8	12.9	13.4	55.4	38.0	68.2	62.9
Blueboy	61.7	41.4	25.5	35.1	53.4	36.3	57.8	44.8
Caribo	42.4	31.9	12.8	17.4	49.1	37.6	63.2	54.3
Blueboy II	59.5	42.4	11.4	36.8	42.0	38.6	50.4	33.8
Zlatna Dolina	52.9	40.0	6.4	33.2	67.1	47.6	39.3	--
Dacia	58.0	40.7	10.0	31.2	50.4	41.0	51.9	24.4
Rousalka	61.0	41.7	7.9	32.3	51.4	43.3	51.0	--
Dwarf Bezostaya	59.1	27.5	22.7	29.0	49.0	34.0	44.4	56.7
Demar 4	46.2	40.3	3.9	25.8	52.6	38.6	51.1	--
Sanja (Zg 5996/66)	56.6	37.1	11.3	32.5	65.8	38.6	35.7	--
Favorit	55.1	41.9	21.8	30.2	53.6	42.7	27.4	39.2
Manella	51.9	27.8	13.5	23.4	50.6	34.3	64.6	46.7
Zenith	43.0	28.1	14.6	22.6	48.7	35.0	52.6	50.9
Clarion	40.7	21.7	13.9	17.9	47.6	41.3	70.0	51.2
Carifen 12	45.3	36.3	17.3	29.8	52.0	30.6	58.5	52.0
Likafen	49.9	34.3	18.6	27.8	43.3	24.7	69.3	39.9
Bolal	54.5	41.5	13.9	28.2	53.4	45.0	26.0	44.1
Moldova	57.1	40.1	8.3	26.6	42.2	39.0	46.5	34.0
Jubilar	43.2	25.6	10.5	11.2	43.9	33.6	55.6	43.7
Marimp 3	54.2	43.7	4.9	26.7	47.7	32.3	40.6	--
Lancota (NE701132)	48.1	33.6	17.6	28.4	39.9	33.3	41.3	28.3
Diplomat	37.0	18.1	7.9	15.6	41.0	32.0	59.7	38.5
NS732	56.7	27.9	16.8	32.7	43.2	31.0	28.4	--
Atlas 66	42.8	29.1	9.6	21.9	41.2	26.3	25.7	30.8
Lerma Rojo 64	54.1	49.8	8.5	24.8	50.1	36.0	45.7	--
Kirac 66	48.5	35.2	12.5	28.9	36.3	36.6	46.4	34.3
Mean	52.2	37.7	12.7	26.3	48.7	36.9	49.7	42.7

a) Cambridge, England is not included in overall mean values.

Table 53. Summary of average yield in quintals per hectare for cultivars grown in the Sixth International Winter Wheat Performance Nursery, 1974. Continued.

Cultivar	Orgerus, France	Martonvasar, Hungary	Szeged, Hungary	Simla, India	Hamadan, Iran	Karaj, Iran	Sulaimaniya, Iraq	Milano, Italy	Rieti, Italy
Kavkaz	74.7	75.9	32.0	7.6	27.6	28.4	21.3	84.3	59.9
Aurora	69.4	63.5	34.9	12.5	26.1	29.0	22.4	82.8	65.8
Burgas 2	56.4	59.3	32.3	13.7	27.8	31.4	19.5	81.5	52.6
Bezostaya 1	61.0	68.9	36.9	11.0	28.4	32.7	21.2	63.5	52.5
Maris Nimrod	88.7	58.5	42.2	6.4	26.0	17.1	12.9	70.4	54.5
Blueboy	59.2	65.3	41.2	11.9	28.1	34.2	27.6	56.8	41.8
Caribo	72.4	62.4	44.6	3.8	25.0	21.5	18.0	60.6	42.7
Blueboy II	49.9	60.3	38.3	11.8	29.7	33.9	26.8	60.3	57.5
Zlatna Dolina	63.1	76.4	39.8	9.7	32.3	24.9	26.6	81.9	55.3
Dacia	58.0	66.5	42.9	7.5	26.9	28.6	18.9	66.4	55.8
Rousalka	47.4	67.1	40.5	13.0	27.7	24.0	25.7	76.3	63.2
Dwarf Bezostaya	59.9	57.0	33.8	8.9	31.6	36.3	16.9	79.6	45.5
Demar 4	63.7	69.7	41.0	11.8	26.9	28.7	26.0	67.7	61.0
Sanja (Zg 5996/66)	66.6	71.1	43.4	10.0	27.4	26.9	23.3	79.7	50.9
Favorit	59.2	70.9	38.5	10.0	29.4	30.5	22.8	56.2	57.8
Manella	67.3	59.0	40.4	3.6	24.5	19.5	19.5	55.0	46.9
Zenith	67.6	66.5	42.0	5.3	27.4	21.0	14.1	49.9	36.6
Clarion	72.1	48.5	47.6	3.1	26.7	16.4	14.8	58.9	40.2
Carifen 12	68.5	68.1	34.4	6.7	25.0	24.9	14.0	56.9	55.4
Likafen	55.6	40.8	37.1	8.9	27.3	30.1	21.6	53.3	51.1
Bolal	53.1	66.3	28.1	14.1	28.4	33.8	30.8	50.5	57.7
Moldova	51.6	60.7	37.3	10.9	26.0	30.8	17.4	61.9	46.9
Jubilar	65.2	59.7	41.5	3.3	23.9	14.2	12.0	68.3	40.0
Marimp 3	61.3	56.8	36.5	9.1	29.2	28.8	23.1	47.3	63.6
Lancota (NE701132)	47.5	63.5	36.2	8.5	26.4	28.1	18.9	55.5	49.2
Diplomat	59.1	52.1	42.0	3.6	22.3	14.7	11.9	65.9	38.1
MS732	44.5	49.5	26.8	5.7	22.1	22.8	20.2	76.0	51.1
Atlas 66	55.0	61.3	34.3	7.7	22.4	28.1	17.4	71.8	43.9
Lerma Rojo 64	49.2	61.7	36.2	11.0	34.4	36.8	34.3	49.2	51.3
Kirac 66	45.6	51.9	32.7	9.1	28.0	35.8	21.5	38.0	38.6
Mean	60.4	62.0	37.8	8.7	27.2	27.1	20.7	64.2	50.9

Table 53. Summary of average yield in quintals per hectare for cultivars grown in the Sixth International Winter Wheat Performance Nursery, 1974. Continued.

Cultivar	Morioka Iwate, Japan	Suwon, Korea	Beirut, Lebanon	Toluca,[a] Mexico	Toluca,[b] Mexico	Kathmandu, Nepal	Wageningen, Netherlands	Warsaw, Poland	Fundulea, Romania
Kavkaz	49.4	37.0	13.2	12.9	11.8	26.9	56.8	55.4	45.1
Aurora	47.6	45.6	13.1	16.9	13.4	26.6	59.2	55.3	41.6
Burgas 2	40.4	50.6	12.8	29.4	36.4	33.0	44.6	43.4	48.1
Bezostaya 1	42.5	51.3	10.8	17.8	21.5	22.9	52.3	50.6	47.0
Maris Kimrod	4.1	38.1	10.6	23.5	25.6	9.1	59.8	62.5	48.7
Blueboy	27.3	46.3	9.4	23.0	24.8	20.5	51.5	41.5	51.0
Caribo	13.7	41.3	7.3	25.3	23.7	11.7	60.7	63.7	45.3
Blueboy II	32.7	55.1	15.1	20.7	25.1	32.5	46.9	37.9	48.5
Zlatna Dolina	12.8	53.6	16.3	22.7	25.7	21.2	49.8	49.5	49.8
Dacia	37.3	53.2	11.8	21.6	22.2	29.9	43.6	54.4	51.1
Rousalka	23.5	53.3	16.0	43.1	44.3	23.4	35.7	40.2	49.0
Dwarf Bezostaya	35.9	42.2	12.2	29.9	22.9	15.3	49.0	39.6	47.8
Demar 4	11.4	45.1	10.2	22.9	22.4	23.4	59.2	52.8	44.5
Sanja (Zg 5996/66)	12.9	55.7	10.1	21.4	23.4	21.6	49.0	45.5	50.5
Favorit	33.5	41.5	13.2	15.3	17.4	24.2	39.9	46.1	53.0
Manella	32.3	32.0	4.0	17.1	13.9	13.8	59.2	51.1	49.3
Zenith	27.3	33.8	13.2	31.6	25.9	7.0	53.1	53.8	48.3
Clarion	24.7	28.3	11.2	24.2	13.3	6.5	60.2	55.0	49.4
Carifen 12	1.9	33.6	12.9	21.3	17.3	4.6	60.4	39.9	43.4
Likafen	13.3	31.1	8.1	37.8	38.9	28.2	47.0	33.2	41.5
Bolal	31.0	46.8	16.4	6.3	8.9	33.5	34.7	41.6	53.2
Moldova	39.6	44.0	16.6	22.8	16.3	23.6	33.2	44.2	42.8
Jubilar	10.7	32.8	3.5	11.9	12.9	4.8	55.2	59.7	41.1
Marimp 3	0.6	47.2	18.5	15.2	21.3	25.9	47.6	45.5	45.5
Lancota (NE701132)	30.0	33.2	12.5	16.8	15.0	33.5	35.0	37.3	50.8
Diplomat	20.6	23.5	6.5	19.6	9.7	10.6	48.7	59.5	38.9
MS732	3.7	43.7	8.9	25.3	22.4	19.5	31.4	30.5	48.2
Atlas 66	2.0	36.9	8.6	13.9	14.9	24.2	34.9	46.5	37.6
Lerma Rojo 64	0.0	32.9	16.2	13.9	9.4	25.1	28.9	22.2	51.1
Kirac 66	1.4	27.4	10.1	5.0	8.9	27.2	33.7	25.6	35.9
Mean	22.1	41.2	11.6	21.0	20.3	21.0	47.4	46.1	46.6

a) Planted November 6, 1973.
b) Planted November 22, 1973.

Table 53. Summary of average yield in quintals per hectare for cultivars grown in the Sixth International Winter Wheat Performance Nursery, 1974. Continued.

Cultivar	Bethlehem, Republic of South Africa	Logrono, Spain	Svalof, Sweden	Zurich, Switzerland	Ankara, Turkey	Erzurum, Turkey	Eskisehir, Turkey	Davis, California U.S.A.
Kavkaz	21.8	69.5	73.9	73.5	17.0	26.4	27.3	27.0
Aurora	20.5	48.5	73.0	72.4	15.3	25.0	28.2	27.7
Burgas 2	17.5	41.3	65.6	61.8	18.2	28.3	27.8	31.6
Bezostaya 1	18.6	42.7	74.1	53.8	21.3	34.2	37.3	32.8
Maris Nimrod	18.9	41.6	99.1	70.8	11.5	33.8	21.9	31.6
Blueboy	18.3	41.0	72.4	47.5	21.9	44.2	39.3	20.5
Caribo	23.6	36.6	98.6	63.3	16.8	40.9	34.0	42.8
Blueboy II	16.8	50.2	65.3	44.0	19.5	32.3	31.1	19.3
Zlatna Dolina	15.6	49.2	64.0	31.3	9.6	21.2	26.2	24.1
Dacia	16.2	42.4	58.1	53.7	12.1	27.1	31.1	7.2
Rousalka	15.6	47.0	41.4	49.2	15.5	19.1	32.4	35.8
Dwarf Bezostaya	19.8	55.6	66.6	41.2	11.9	33.2	27.5	37.6
Demar 4	15.2	39.8	71.6	54.7	10.7	18.0	31.5	15.3
Sanja (Zg 5996/66)	13.1	54.0	50.6	32.9	8.6	21.7	28.4	30.3
Favorit	16.4	35.0	69.0	56.2	17.7	28.5	37.7	16.2
Manella	21.0	45.4	95.9	52.8	15.8	27.2	27.7	39.8
Zenith	20.9	38.6	83.8	50.6	14.6	33.3	23.2	38.2
Clarion	25.3	37.9	99.6	51.2	17.4	27.6	27.5	46.3
Carifen 12	15.7	51.7	81.5	41.2	13.6	27.8	31.0	55.0
Likafen	13.6	47.5	72.5	38.0	17.1	32.6	35.7	42.6
Bolal	18.8	38.9	80.4	24.3	19.4	32.7	38.7	17.1
Moldova	14.0	37.8	57.3	46.9	11.1	27.0	28.5	12.4
Jubilar	20.6	41.7	90.6	53.7	11.2	28.0	25.2	31.7
Marimp 3	16.1	42.4	58.3	34.3	5.6	19.5	24.0	19.2
Lancota (NE701132)	15.8	34.6	42.8	36.0	18.9	34.1	30.0	27.7
Diplomat	19.2	35.0	83.0	46.2	7.5	17.6	25.8	38.3
NS732	12.0	57.9	40.6	23.8	9.2	11.6	24.8	30.5
Atlas 66	11.9	35.7	58.6	50.3	6.7	19.2	25.2	17.1
Lerma Rojo 64	14.3	29.3	46.4	39.6	11.1	23.1	34.5	34.0
Kirac 66	13.8	32.8	62.3	24.2	21.9	32.9	36.1	12.2
Mean	17.4	43.4	69.9	47.3	14.2	27.6	30.0	28.7

Table 53. Summary of average yield in quintals per hectare for cultivars grown in the Sixth International Winter Wheat Performance Nursery, 1974. Continued.

Cultivar	Akron, Colorado U.S.A.	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.
Kavkaz	26.6	67.6	33.1	48.4	28.7	12.5	65.7
Aurora	21.3	72.8	33.0	47.5	32.7	10.2	60.6
Burgas 2	23.7	73.9	26.7	42.0	25.9	12.1	54.7
Bezostaya 1	25.2	64.4	32.6	34.0	23.9	10.4	57.8
Maris Nimrod	18.4	74.1	12.0	36.1	21.6	7.6	79.0
Blueboy	27.1	77.5	27.3	35.0	22.2	6.9	59.2
Caribo	18.9	75.9	18.6	33.8	23.1	6.7	75.0
Blueboy II	24.7	78.4	25.8	33.4	22.5	9.3	62.1
Zlatna Dolina	21.1	62.2	26.5	25.2	20.3	4.8	60.5
Dacia	26.2	62.2	27.2	30.4	38.9	10.8	61.3
Rousalka	23.9	69.9	28.3	22.0	14.2	11.1	53.2
Dwarf Bezostaya	26.4	75.0	25.3	27.9	23.2	17.1	61.6
Demar 4	22.1	55.7	22.3	32.8	23.8	4.7	72.6
Sanja (Zg 5996/66)	18.6	61.5	24.5	30.1	15.6	7.8	59.1
Favorit	26.3	64.5	31.7	29.5	22.1	7.3	52.0
Manella	19.0	66.6	16.0	31.6	27.4	11.2	68.9
Zenith	21.2	79.5	13.2	36.2	20.9	6.6	68.0
Clarion	19.8	72.7	15.1	22.2	24.5	9.0	74.5
Carifen 12	22.1	75.1	11.5	18.0	11.9	7.3	74.0
Likafen	20.2	83.9	19.6	21.2	11.0	4.1	58.8
Bolal	27.6	65.8	29.4	16.2	14.5	3.8	--[a]
Moldova	25.2	56.8	18.6	25.7	17.1	4.0	48.6
Jubilar	18.1	54.9	10.2	32.1	19.5	6.5	64.6
Marimp 3	18.4	52.4	12.3	28.7	19.3	1.2	37.4
Lancota (NE701132)	25.0	72.5	32.4	28.5	26.0	9.0	40.5
Diplomat	12.0	59.1	11.6	25.2	19.8	4.5	65.9
NS732	17.2	54.2	20.9	20.3	11.7	3.8	33.7
Atlas 66	20.1	49.9	19.7	29.1	18.3	1.0	42.3
Lerma Rojo 64	21.2	48.9	2.5	0.0	0.0	0.0	0.0
Kirac 66	21.8	63.4	22.9	20.6	7.0	0.8	22.0
Mean	22.0	66.4	21.7	28.8	20.2	7.1	56.3

a) Bolal was not harvested at Corvallis, Oregon.

Table 53. Summary of average yield in quintals per hectare for cultivars grown in the Sixth International Winter Wheat Performance Nursery, 1974. Concluded.

Cultivar	Pullman, Washington U.S.A.	Krasnodar, U.S.S.R.	Monsheim, West Germany	Weihenstephan, West Germany	Novi Sad, Yugoslavia	Zagreb, Yugoslavia	Cultivar yield mean 46 sites[a]	
							q/ha	% of Bezostaya 1
Kavkaz	22.6	67.7	50.3	75.0	42.9	65.7	42.2	105.0
Aurora	30.9	64.2	53.8	73.8	45.2	63.4	42.0	104.5
Burgas 2	32.0	63.0	47.9	63.3	47.6	51.1	40.3	100.2
Bezostaya 1	24.4	64.4	51.7	74.7	46.8	48.4	40.2	100.0
Maris Nimrod	41.1	49.7	60.2	92.3	48.9	35.9	39.9	99.3
Blueboy	32.0	65.1	47.3	70.4	54.7	27.0	39.8	99.0
Caribo	33.4	47.0	48.3	93.0	53.0	27.7	39.3	97.8
Blueboy II	37.8	66.1	41.5	62.6	51.3	45.9	39.3	97.8
Zlatna Dolina	22.0	70.1	49.5	79.3	53.1	58.2	39.0	97.0
Dacia	25.9	65.5	42.4	66.2	43.6	47.0	38.6	96.0
Rousalka	22.5	63.0	37.1	61.2	48.0	53.3	38.4	95.5
Dwarf Bezostaya	25.9	46.6	48.4	62.7	53.8	43.1	38.3	95.3
Demar 4	26.0	63.2	35.8	81.2	49.1	61.0	38.2	95.0
Sanja (Zg 5996/66)	20.5	60.0	47.3	80.1	52.5	56.1	37.9	94.3
Favorit	27.6	68.2	46.8	63.1	46.5	43.3	37.8	94.0
Manella	29.2	55.6	50.4	67.2	41.0	39.5	37.5	93.3
Zenith	27.0	49.9	49.0	86.1	49.8	28.5	37.2	92.5
Clarion	31.8	40.4	47.7	79.7	48.0	32.2	37.1	92.3
Carifen 12	26.1	46.4	46.9	69.5	50.5	39.4	36.4	90.5
Likafen	31.3	49.7	39.4	52.6	46.4	33.9	35.7	88.8
Bolal	24.6	66.4	45.2	44.3	46.3	37.9	35.3	87.8
Moldova	28.9	64.0	38.4	63.5	44.4	43.2	34.8	86.6
Jubilar	27.3	48.5	48.1	62.6	45.2	40.3	34.0	84.6
Marimp 3	24.6	61.7	44.8	80.8	32.0	54.1	34.0	84.6
Lancota (NE701132)	33.0	58.9	35.7	43.0	35.3	35.1	33.8	84.1
Diplomat	26.8	43.7	39.4	75.9	44.0	38.7	32.6	81.1
NS732	13.4	54.1	34.3	55.2	35.0	48.2	30.5	75.9
Atlas 66	22.9	44.0	39.3	52.2	36.7	29.9	30.2	75.1
Lerma Rojo 64	12.3	57.8	32.9	50.4	37.8	37.6	29.7	73.9
Kirac 66	20.4	45.4	36.4	38.8	29.7	16.7	28.2	70.1
Mean	26.8	57.0	44.5	67.3	45.3	42.7	36.6	90.8

a) Does not include the location at Cambridge, England.

Table 54. Summary of yield rankings for cultivars grown in the Sixth International Winter Wheat Performance Nursery, 1974.

Cultivar	Kabul, Afghanistan	Kunduz, Afghanistan	Balcarce, Argentina	Bordenave, Argentina	Vienna, Austria	Tolbukhin, Bulgaria	Temuco, Chile	Cambridge,[a] England	Orgerus, France
Kavkaz	10	8	22	26	9	15	6	11	2
Aurora	1	15	28	14	20	8	7	17	5
Burgas 2	3	11	13	6	22	16	12	13	20
Bezostaya 1	8	4	5	16	17	2	22	7	14
Maris Nimrod	22	22	14	29	3	13	3	1	1
Blueboy	2	9	1	2	6	18	10	9	16
Caribo	28	21	15	27	14	14	5	3	3
Blueboy II	5	3	17	1	26	10	17	20	25
Zlatna Dolina	17	14	27	3	1	1	25	--	12
Dacia	7	10	20	8	12	7	14	23	19
Rousalka	4	6	26	7	10	4	16	--	28
Dwarf Bezostaya	6	27	2	11	15	22	21	2	15
Desar 4	23	12	30	20	7	11	15	--	11
Sanja (Zg 5996/66)	12	16	18	5	2	12	26	--	9
Favorit	13	5	3	9	4	5	28	15	17
Manella	18	26	12	22	11	21	4	8	8
Zenith	26	24	9	23	16	20	13	6	7
Clarion	29	29	11	25	19	6	1	5	4
Carifen 12	24	17	7	10	8	28	9	4	6
Likafen	19	19	4	17	23	30	2	14	21
Bolal	14	7	10	15	5	3	29	10	23
Moldova	9	13	24	19	25	9	18	19	24
Jubilar	25	28	19	30	21	23	11	12	10
Marimp 3	15	2	29	18	18	25	24	--	13
Lancota (NE701132)	21	20	6	13	29	24	23	22	27
Diplomat	30	30	25	28	28	26	8	16	18
NS732	11	25	8	4	24	27	27	--	30
Atlas 66	27	23	21	24	27	29	30	21	22
Lerma Rojo 64	16	1	23	21	13	19	20	--	26
Kirac 66	20	18	16	12	30	17	19	18	29

a) Cambridge, England is not included in the overall mean rankings.

Table 54. Summary of yield rankings for cultivars grown in the Sixth International Winter Wheat Performance Nursery, 1974. Continued.

Cultivar	Martonvasar, Hungary	Szeged, Hungary	Simla, India	Hamadan, Iran	Karaj, Iran	Sulaimaniya, Iraq	Milano, Italy	Rieti, Italy	Morioka Iwate, Japan	Suwon, Korea
Kavkaz	2	27	20	13	16	14	1	5	1	19
Aurora	14	22	4	21	12	11	2	1	2	11
Burgas 2	21	28	2	11	8	18	4	13	4	7
Bezostaya 1	6	18	8	7	7	15	15	14	3	6
Maris Nimrod	23	5	23	22	27	28	10	12	24	18
Blueboy	12	9	5	9	4	3	21	25	13	10
Caribo	15	2	26	25	24	21	17	24	18	17
Blueboy II	19	15	6	4	5	4	18	8	9	2
Zlatna Dolina	1	13	13	2	21	5	3	11	21	3
Dacia	9	4	21	18	15	20	13	9	6	5
Rousalka	8	11	3	12	22	7	7	3	16	4
Dwarf Bezostaya	24	25	17	3	2	24	6	22	7	15
Demar 4	5	10	7	17	14	6	12	4	22	12
Sanja (Zg 5996/66)	3	3	12	15	19	8	5	18	20	1
Favorit	4	14	11	5	10	10	22	6	8	16
Manella	22	12	28	26	26	17	24	20	10	26
Zenith	10	6	25	14	25	26	27	30	14	21
Clarion	29	1	30	19	28	25	19	26	15	28
Carifen 12	7	23	22	24	20	27	20	10	27	22
Likafen	30	17	16	16	11	12	25	17	19	27
Bolal	11	29	1	8	6	2	26	7	11	9
Moldova	18	16	10	23	9	22	16	21	5	13
Jubilar	20	8	29	27	30	29	11	27	23	25
Marimp 3	25	19	14	6	13	9	29	2	29	8
Lancota (NE701132)	13	20	18	20	18	19	23	19	12	23
Diplomat	26	7	27	29	29	30	14	29	17	30
NS732	28	30	24	30	23	16	8	16	25	14
Atlas 66	17	24	19	28	17	23	9	23	26	20
Lerma Rojo 64	16	21	9	1	1	1	28	15	30	24
Kirac 66	27	26	15	10	3	13	30	28	28	29

Table 54. Summary of yield rankings for cultivars grown in the Sixth International Winter Wheat Performance Nursery, 1974. Continued.

Cultivar	Beirut, Lebanon	Toluca, Mexico	Toluca, Mexico	Kathmandu, Nepal	Wageningen, Netherlands	Warsaw, Poland	Fundulea, Romania	Bethlehem, South Africa	Logrono, Spain	Svalof, Sweden
Kavkaz	10	27	26	8	8	5	21	3	1	11
Aurora	11	21	23	9	5	6	25	7	8	12
Burgas 2	13	5	3	3	20	19	16	14	17	18
Bezostaya 1	18	19	15	17	11	12	18	12	12	10
Maris Nimrod	19	9	6	26	4	2	12	10	16	2
Blueboy	23	10	8	20	12	21	5	13	18	14
Caribo	27	6	9	24	1	1	20	2	24	3
Blueboy II	7	17	7	4	19	25	13	15	6	19
Zlatna Dolina	4	13	5	19	13	13	8	21	7	20
Dacia	16	14	14	5	21	8	3	17	14	24
Rousalka	6	1	1	15	23	22	11	22	10	29
Dwarf Bezostaya	15	4	11	22	14	24	17	8	3	17
Demar 4	20	11	12	16	7	10	22	23	19	15
Sanja (Zg 5996/66)	21	15	10	18	15	16	7	28	4	26
Favorit	9	23	17	13	22	15	2	16	27	16
Manella	29	20	22	23	6	11	10	4	11	4
Zenith	8	3	4	27	10	9	14	5	21	6
Clarion	17	8	24	28	3	7	9	1	22	1
Carifen 12	12	16	18	30	2	23	23	20	5	8
Likafen	26	2	2	6	18	27	26	27	9	13
Bolal	3	29	30	2	26	20	1	11	20	9
Moldova	2	12	19	14	28	18	24	25	23	25
Jubilar	30	28	25	29	9	3	27	6	15	5
Marimp 3	1	24	16	10	17	17	19	18	13	23
Lancota (NE701132)	14	22	20	1	24	26	6	19	28	28
Diplomat	28	18	27	25	16	4	28	9	26	7
NS732	24	7	13	21	29	28	15	29	2	30
Atlas 66	25	26	21	12	25	14	29	30	25	22
Lerma Rojo 64	5	25	28	11	30	30	4	24	30	27
Kirac 66	22	30	29	7	27	29	30	26	29	21

Table 54. Summary of yield rankings for cultivars grown in the Sixth International Winter Wheat Performance Nursery, 1974. Continued.

Cultivar	Zurich, Switzerland	Ankara, Turkey	Erzurum, Turkey	Eskisehir, Turkey	Davis, California U.S.A.	Akron, Colorado U.S.A.	Fort Collins, Colorado U.S.A.	Lincoln, Nebraska U.S.A.	Ithaca, New York U.S.A.	Rowan County, North Carolina U.S.A.
Kavkaz	1	11	20	22	19	3	14	1	1	3
Aurora	2	15	21	17	17	16	10	2	2	2
Burgas 2	5	7	13	18	14	12	9	10	3	6
Bezostaya 1	8	2	3	4	11	8	18	3	7	8
Maris Nimrod	3	20	5	30	13	26	8	26	5	15
Blueboy	16	1	1	1	21	2	4	8	6	13
Caribo	4	12	2	8	3	24	5	20	8	11
Blueboy II	19	4	11	12	22	10	3	12	9	12
Zlatna Dolina	27	25	24	23	20	19	21	11	21	17
Dacia	10	18	18	11	30	6	20	9	13	1
Rousalka	15	14	27	9	9	11	13	7	24	25
Dwarf Bezostaya	21	19	7	21	8	4	7	13	19	10
Demar 4	7	24	28	10	27	13	25	16	10	9
Sanja (Zg 5996/66)	26	27	23	16	16	25	22	14	14	23
Favorit	6	8	12	3	26	5	17	5	15	14
Manella	11	13	17	19	5	23	15	22	12	4
Zenith	13	16	6	29	7	18	2	24	4	16
Clarion	12	9	16	20	2	22	11	23	23	7
Carifen 12	20	17	15	13	1	14	6	28	28	26
Likafen	23	10	10	6	4	20	1	19	25	28
Bolal	28	5	9	2	25	1	16	6	29	24
Moldova	17	22	19	15	28	7	24	21	20	22
Jubilar	9	21	14	26	12	28	26	29	11	19
Marimp 3	25	30	25	28	23	27	28	25	17	20
Lancota (NE701132)	24	6	4	14	18	9	12	4	18	5
Diplomat	18	28	29	24	6	30	23	27	22	18
MS732	30	26	30	27	15	29	27	17	27	27
Atlas 66	14	29	26	25	24	21	29	18	16	21
Lerma Rojo 64	22	23	22	7	10	17	30	30	30	30
Kirac 66	29	3	8	5	29	15	19	15	26	29

Table 54. Summary of yield rankings for cultivars grown in the Sixth International Winter Wheat Performance Nursery, 1974. Concluded.

Cultivar	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
Kavkaz	2	9	24	3	5	10	23	1
Aurora	8	14	9	9	2	12	18	2
Burgas 2	3	20	5	13	11	18	13	8
Bezostaya 1	7	19	22	8	3	11	14	9
Maris Nimrod	13	1	1	21	1	2	10	22
Blueboy	16	16	6	7	14	13	1	29
Caribo	17	2	3	24	9	1	4	28
Blueboy II	9	11	2	5	20	21	6	12
Zlatna Dolina	20	15	26	1	6	8	3	4
Dacia	6	13	18	6	19	16	22	11
Rousalka	5	21	25	12	25	23	12	7
Dwarf Bezostaya	1	12	19	25	8	20	2	15
Demar 4	21	5	17	11	27	4	9	3
Sanja (Zg 5996/66)	12	17	27	15	13	6	5	5
Favorit	14	22	12	2	16	19	15	13
Manella	4	6	10	18	4	15	24	17
Zenith	18	7	14	20	7	3	8	27
Clarion	10	3	7	30	12	7	11	25
Carifen 12	15	4	16	26	15	14	7	18
Likafen	23	18	8	22	22	25	16	24
Bolal	25	—[a]	20	4	17	28	17	20
Moldova	24	23	11	10	24	17	20	14
Jubilar	19	10	13	23	10	22	19	16
Mariup 3	27	26	21	14	18	5	29	6
Lancota (NE701132)	11	25	4	16	28	29	27	23
Diplomat	22	8	15	29	21	9	21	19
MS732	26	27	29	19	29	24	28	10
Atlas 66	28	24	23	28	23	26	26	26
Lerma Rojo 64	30	29	30	17	30	27	25	21
Kirac 66	29	28	28	27	26	30	30	30

a) Bolal was not harvested at Corvallis, Oregon, U.S.A.

Table 55. Summary of agronomic, quality and yield data for cultivars grown in the Sixth International Winter Wheat Performance Nursery, 1974.

Cultivar	Test weight		Date of Flowering		Date of Ripening		Plant height		Shattering		Lodging	
	kg/hl	rank	days from Jan. 1	rank	days from Jan. 1	rank	cm	rank	%	rank	%	rank
Number of sites	20		33		30		37		16		25	
Kavkaz	76.1	10	170.3	22	206.5	23	97.5	22	4.2	13	7.9	12
Aurora	78.3	2	167.7	20	204.5	19	93.2	17	5.1	15	8.9	15
Maris Nimrod	71.4	27	173.5	25	210.3	25	89.0	11	2.0	4	13.7	18
Burgas 2	75.5	16	165.3	15	203.9	15	81.0	7	3.3	9	3.5	7
Bezostaya 1	78.9	1	164.4	12	202.1	11	92.4	15	3.1	7	13.7	19
Blueboy	73.0	24	164.8	14	202.6	13	95.5	19	6.2	19	18.6	21
Caribo	73.3	23	175.1	27	211.1	28	97.8	23	2.0	5	8.4	14
Zlatna Dolina	75.1	20	162.0	7	199.2	4	74.0	4	5.6	16	2.3	4
Blueboy II	73.0	25	164.6	13	203.9	16	96.1	20	12.2	27	21.2	22
Desar 4	77.3	3	163.3	10	201.5	10	87.2	9	15.4	30	2.4	5
Rousalka	76.9	5	158.0	2	198.3	2	76.3	6	4.1	11	3.8	8
Dacia	76.8	6	164.3	11	202.2	12	100.1	26	10.9	24	24.8	23
Sanja (Zg 5996/66)	74.7	21	161.3	5	199.7	6	70.8	3	7.5	20	3.0	6
Dwarf Bezostaya	76.4	9	165.5	16	203.0	14	65.2	2	1.8	3	0.5	1
Favorit	77.2	4	162.4	9	201.2	9	94.1	18	8.9	21	36.6	26
Manella	74.7	22	173.2	24	208.1	24	92.9	16	1.7	2	14.8	20
Zenith	75.2	19	174.4	26	210.3	26	92.2	14	0.9	1	10.5	16
Clarion	71.3	28	177.4	29	212.5	29	89.6	12	2.3	6	4.0	9
Carifen 12	67.7	30	170.9	23	205.8	21	74.5	5	3.2	8	1.6	2
Likafen	75.5	17	168.3	21	206.2	22	88.0	10	5.7	18	7.2	11
Bolal	75.9	14	162.3	8	200.1	8	102.4	27	9.8	23	59.4	30
Marimp 3	76.0	11	161.6	6	199.8	7	85.9	8	9.3	22	10.9	17
Moldova	76.0	12	159.1	4	198.8	3	98.2	25	13.2	29	30.4	25
Jubilar	72.8	26	177.3	28	210.4	27	97.8	24	5.6	17	8.3	13
Lancota (NE701132)	76.7	7	166.5	19	204.2	18	102.6	28	4.1	12	41.5	27
Diplomat	75.8	15	178.2	30	213.9	30	96.8	21	4.9	14	2.0	3
NS732	70.5	29	158.4	3	199.4	5	58.6	1	11.9	25	4.8	10
Atlas 66	75.9	13	166.0	17	204.1	17	108.5	30	12.1	26	45.1	28
Lerma Rojo 64[a]	76.5	8	155.7	1	197.7	1	90.4	13	3.5	10	29.8	24
Kirac 66	75.4	18	166.0	18	204.5	20	106.1	29	12.8	28	58.4	29
Mean	75.0		166.6		204.2		89.8		6.4		16.6	
L.S.D. of cultivar means (.05)	1.7		1.9		2.1		2.0		7.7		9.1	
Coefficient of variation (%)	2.4		1.5		1.7		4.6		79.8		70.7	

a) Spring wheat.

Table 55. Summary of agronomic, quality and yield data for cultivars grown in the Sixth International Winter Wheat Performance Nursery, 1974. 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	11		6		9		35		45[b]	
Kavkaz	89.2	1	1.2	6	42.5	3	15.0	10	42.1	104.7
Aurora	87.6	3	1.6	13	43.1	2	14.9	11	41.9	104.2
Maris Nimrod	80.4	18	1.2	5	39.8	8	13.4	28	40.7	101.2
Burgas 2	87.2	4	1.8	15	38.8	12	15.1	8	40.3	100.2
Bezostaya 1	87.7	2	1.4	10	40.6	5	14.2	17	40.2	100.0
Blueboy	83.1	12	2.2	21	34.7	24	12.9	30	40.0	99.5
Caribo	80.3	19	1.6	12	34.8	23	13.6	26	39.9	99.3
Zlatna Dolina	80.3	20	3.5	29	37.9	13	13.6	25	39.6	98.5
Blueboy II	83.8	10	2.1	20	32.1	28	13.8	21	39.4	96.0
Demar 4	81.0	16	2.2	22	36.1	17	13.7	24	38.8	96.5
Rousalka	81.9	14	2.0	17	43.2	1	15.0	9	38.7	96.3
Dacia	85.6	6	1.7	14	42.0	4	15.6	4	38.6	96.0
Sanja (Zg 5996/66)	79.4	23	2.1	18	36.4	15	13.7	23	38.4	95.5
Dwarf Bezostaya	86.5	5	1.0	2	36.3	16	13.3	29	38.4	95.5
Favorit	84.8	8	2.1	19	40.2	6	15.5	5	37.9	94.3
Manella	82.7	13	1.0	3	36.6	14	13.9	20	37.6	93.5
Zenith	81.9	15	1.0	1	28.9	30	14.8	12	37.4	93.0
Clarion	80.6	17	1.3	7	32.8	26	14.3	15	37.4	93.0
Carifen 12	78.6	25	1.3	8	32.1	27	13.6	27	37.2	92.5
Likafen	79.6	22	1.9	16	31.3	29	14.3	16	36.2	90.0
Bolal	85.3	7	2.3	23	40.0	7	14.0	19	35.4	88.1
Marimp 3	72.6	29	4.3	30	35.3	20	14.7	13	34.7	86.3
Moldova	84.6	9	2.7	25	39.7	9	15.9	3	34.7	86.3
Jubilar	79.4	24	1.3	9	33.7	25	14.2	18	34.6	86.1
Lancota (NE701132)	78.2	26	1.5	11	36.0	19	16.0	2	33.9	84.3
Diplomat	83.2	11	1.1	4	36.0	18	14.4	14	32.9	81.8
NS732	73.5	28	2.4	24	39.6	10	13.8	22	31.1	77.4
Atlas 66	73.5	27	3.0	26	35.2	21	16.9	1	30.8	76.6
Lerma Rojo 64[a]	53.1	30	3.2	28	39.3	11	15.4	6	30.3	75.4
Kirac 66	79.7	21	3.2	27	34.8	22	15.2	7	28.8	71.6
Mean	80.8		2.0		37.0		14.5		36.9	--
L.S.D. of cultivar means (.05)	9.8		1.5		3.8		0.5		3.3	--
Coefficient of variation (%)	7.3		25.3		8.7		5.1		14.6	--

a) Spring wheat.

b) Does not include the locations at Morioka, Japan and Cambridge, England.

Table 56. Correlation coefficients for yield and other agronomic traits combined over 48 nursery sites of the Sixth International Winter Wheat Performance Nursery, 1974.

Trait	Yield	Test weight	Protein	Flowering	Ripening	Plant height	Lodging	Shattering	Winter survival	Frost damage	1000-kernel weight
Test weight	.40**	1.00									
Number of observations	3050										
Protein	-.47**	-.08**	1.00								
Number of observations	4843	2892									
Flowering	-.11**	-.04	.10**	1.00							
Number of observations	4129	2627	3801								
Ripening	-.11**	.04	.16**	.98**	1.00						
Number of observations	3672	2315	3343	3475							
Plant height	.33**	.11**	.28**	.01	-.05**	1.00					
Number of observations	4632	2960	4299	3926	3499						
Lodging	.04*	.04*	.15**	-.12**	-.10**	.37**	1.00				
Number of observations	3262	2394	3082	2820	2483	3290					
Shattering	-.22**	-.01	-.22**	.10**	.09**	.17**	-.11**	1.00			
Number of observations	1803	1158	1769	1569	1712	1803	1413				
Winter survival	.49**	.31**	-.48**	-.63**	-.57**	.27**	.15**	-.04	1.00		
Number of observations	1472	1050	1365	1320	1223	1428	1013	773			
Frost damage	-.21**	-.14**	.11**	-.13**	-.21**	-.25**	.07	.29**	-.22*	1.00	
Number of observations	925	488	803	925	685	805	570	360	120		
1000-kernel weight	.70**	.44**	-.28**	.47**	.56**	.11**	.19**	-.11**	-.06	-.76**	1.00
Number of observations	1073	509	957	846	953	986	746	626	149	120	

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

Table 57. Summary of yield, quality, and agronomic data for the 30 cultivars grown in the Sixth International Winter Wheat Performance Nursery at sites in Northern Europe, 1974.

Cultivar	Test weight kg/hl	Date of Flowering (days from Jan. 1)	Date of Ripening (days from Jan. 1)	Plant height cm	Lodging %	Shattering %	Winter survival %	1000-kernel weight gm	Protein %	Yield q/ha	Yield % of Bezostaya 1
Number of sites	5	7	5	7	6	3	2	5	8	8	
Maris Nimrod	75.0	160	219	93	19	3	83	45.4	12.0	73.6	126
Caribo	77.2	162	219	104	11	4	84	42.0	11.7	68.6	118
Clarion	75.0	164	221	96	9	2	83	40.2	12.6	64.1	110
Kavkaz	73.8	160	217	100	11	10	84	46.2	13.9	63.9	110
Aurora	78.4	157	214	94	8	8	86	47.3	13.9	63.0	108
Manella	76.3	160	216	100	19	4	84	43.7	12.3	61.8	106
Zenith	79.4	163	219	98	9	2	78	34.3	13.4	61.6	106
Jubilar	76.4	164	220	100	15	7	83	41.6	12.9	59.9	103
Demar 4	77.5	151	213	91	3	9	88	41.4	12.6	58.9	101
Bezostaya 1	80.3	153	211	94	17	1	86	44.2	13.4	58.3	100
Carifen 12	69.1	158	213	77	2	7	79	38.4	12.4	57.5	99
Zlatna Dolina	75.6	149	208	78	2	4	81	42.1	12.8	56.7	97
Diplomat	79.4	165	221	104	5	7	88	42.8	13.1	56.6	97
Blueboy	74.2	155	213	100	22	3	86	38.7	12.1	55.4	95
Sanja (Zg 5996/66)	75.1	150	211	74	6	8	82	41.5	12.9	54.7	94
Favorit	77.4	151	212	94	43	3	85	42.5	15.4	54.2	93
Dacia	77.8	153	210	100	23	2	84	45.8	15.3	53.3	91
Burgas 2	76.3	156	214	81	1	5	84	41.7	14.7	53.3	91
Marimp 3	77.2	151	209	90	4	7	78	40.7	13.8	52.5	90
Dwarf Bezostaya	77.9	154	214	68	2	1	83	40.7	12.7	52.0	89
Blueboy II	72.4	156	214	99	28	3	83	33.9	13.2	48.8	84
Likafen	74.8	158	216	95	13	7	82	34.3	13.2	47.7	82
Atlas 66	78.7	155	212	109	50	5	73	39.4	16.1	47.2	81
Moldova	75.3	148	212	97	34	8	85	43.1	15.5	47.2	81
Bolal	73.0	153	210	104	73	4	83	44.2	13.8	47.1	81
Rousalka	77.3	146	208	78	2	5	84	47.1	14.9	45.5	78
Lerma Rojo 64	76.6	146	209	89	23	2	45	41.6	15.8	39.9	68
Lancota (NE701132)	76.3	155	211	102	36	1	84	38.7	16.1	39.6	68
NS732	67.3	145	211	62	1	15	79	44.8	13.5	37.9	65
Kirac 66	73.7	157	213	109	69	2	81	37.3	14.5	37.8	65
Mean	75.8	155.2	213.7	92.6	18.8	5.0	81.6	41.5	13.7	54.0	92.3
L.S.D. of cultivar means (.05)	3.6	2.3	4.4	5.1	16.4	7.5	19.4	4.2	0.8	7.7	--
Coefficient of variation (%)	3.0	0.9	0.7	4.2	67.5	37.5	5.4	9.7	4.0	9.2	--

Table 58. Summary of yield, quality, and agronomic data for the 30 cultivars grown in the Sixth International Winter Wheat Performance Nursery at sites in Southern Europe, 1974.

Cultivar	Test weight kg/hl	Date of Flowering (days from Jan. 1)	Date of Ripening (days from Jan. 1)	Plant height cm	Lodging %	Shattering %	Winter survival %	Protein %	Yield q/ha	Yield % of Bezostaya 1
Number of sites	8	10	9	10	8	2	3	8	10	
Zlatna Dolina	76.7	148	188	78	3	1	91	13.0	58.1	113
Kavkaz	78.6	154	193	104	7	1	94	14.8	58.0	112
Sanja (Zg 5996/66)	75.9	147	187	75	2	2	88	13.1	55.7	108
Rousalka	77.8	143	186	80	9	0	89	14.2	55.1	107
Aurora	80.0	152	191	98	8	0	91	14.4	54.9	106
Demar 4	79.1	149	188	91	2	3	92	13.2	53.6	104
Dacia	78.2	150	189	106	35	1	90	15.0	52.2	101
Blueboy II	73.7	151	190	99	29	8	89	13.2	51.7	100
Bezostaya 1	79.6	150	190	97	22	0	89	13.7	51.6	100
Favorit	79.5	148	189	100	54	0	90	15.2	51.2	99
Burgas 2	76.1	151	191	84	4	0	92	14.5	51.1	99
Dwarf Bezostaya	77.1	150	189	66	0	0	87	13.0	49.7	96
Bolal	79.0	148	188	108	84	0	92	13.5	49.0	95
Maris Nimrod	70.4	157	195	95	24	0	92	13.0	48.8	95
Blueboy	73.7	151	189	101	27	0	88	12.5	48.0	93
Moldova	77.3	145	186	104	37	0	91	15.4	47.8	93
NS732	72.6	145	187	60	13	8	84	13.3	47.8	93
Carifen 12	67.0	154	190	78	3	0	90	13.0	47.7	92
Marimp 3	77.5	148	187	93	20	4	88	14.5	47.2	91
Manella	75.4	156	193	99	26	0	92	13.5	46.6	90
Jubilar	73.1	159	196	105	12	1	94	13.5	46.0	89
Caribo	73.2	158	195	104	15	0	91	13.1	45.7	89
Lancota (NE701132)	79.0	151	190	109	70	0	90	15.7	45.2	88
Lerma Rojo 64	78.5	141	183	95	43	0	80	14.8	44.8	87
Zenith	74.6	156	195	98	15	0	92	14.3	44.5	86
Clarion	70.4	160	196	94	4	0	91	13.9	44.5	86
Diplomat	76.9	160	197	103	1	2	91	13.6	43.0	83
Likafen	76.3	154	193	91	10	0	91	13.6	42.6	83
Atlas 66	77.1	152	192	118	68	0	93	16.7	42.2	82
Kirac 66	77.0	152	191	113	84	0	96	14.8	35.8	69
Mean	76.0	151.3	190.4	94.9	24.3	0.8	90.3	14.0	48.7	94.1
L.S.D. of cultivar means (.05)	2.1	1.9	2.4	3.9	16.9	2.6	9.9	0.7	6.1	--
Coefficient of variation (%)	1.7	0.6	0.5	3.8	56.4	109.9	0.8	4.4	14.1	--

Table 59. Summary of yield, quality, and agronomic data for the 30 cultivars grown in the Sixth International Winter Wheat Performance Nursery at sites in North America, 1974.

Cultivar	Test weight kg/hl	Date of Flowering (days from Jan. 1)	Date of Ripening (days from Jan. 1)	Plant height cm	Lodging %	Shattering %	Frost damage 0-9	Protein %	Yield q/ha	Yield rank	Yield q/ha	Yield % of Bezostaya 1
Number of sites	2	3	2	5	3	2	3	9	11		10	
Burgas 2	67.6	125	165	79	1	4	3	15.9	35.3	1	33.4	116
Kousalka	66.8	115	160	73	2	2	2	15.3	33.5	7	31.5	110
Dwarf Bezostaya	66.8	128	164	64	0	0	1	13.9	33.9	3	31.1	108
Likafen	67.5	129	165	83	1	3	3	14.3	33.6	5	31.0	108
Aurora	69.2	131	166	93	3	9	2	15.3	33.3	8	30.6	107
Caribo	61.3	141	170	95	1	6	2	13.6	34.3	2	30.2	105
Zenith	61.7	141	170	90	1	3	1	14.9	33.5	6	30.0	105
Blueboy II	66.5	123	167	93	2	58	2	14.5	32.6	9	29.7	103
Blueboy	6[illegible].1	123	165	92	2	41	3	12.8	32.3	11	29.6	103
Maris Nimrod	60.6	140	171	88	1	6	1	13.4	33.7	4	29.2	102
Kavkaz	67.4	138	165	97	6	6	2	15.3	32.4	10	29.1	102
Bezostaya 1	70.8	126	164	90	5	10	2	14.5	31.3	13	28.7	100
Lancota (NE701132)	70.0	126	165	103	9	26	2	15.9	29.6	17	28.6	100
Clarion	61.7	146	171	88	0	1	1	14.6	32.1	12	27.9	97
Dacia	69.0	125	165	101	4	55	2	15.4	30.3	16	27.2	95
Manella	63.8	146	168	91	0	4	1	14.0	31.0	14	27.2	95
Carifen 12	54.6	134	166	73	1	0	1	13.4	30.9	15	26.5	92
Favorit	69.3	124	164	92	6	48	3	15.9	28.2	21	25.8	90
Zlatna Dolina	65.2	128	161	71	1	14	4	14.2	28.6	19	25.4	89
Sanja (Zg 5996/66)	66.3	120	161	69	2	7	3	14.2	28.4	20	25.4	89
Demar 4	69.0	128	162	84	1	42	3	14.2	29.1	18	24.8	86
Moldova	68.4	118	163	95	14	61	4	16.3	25.1	24	22.8	79
Diplomat	68.6	154	173	91	0	5	1	14.6	26.6	22	22.6	79
Jubilar	61.6	150	171	96	1	12	1	14.2	26.3	23	22.5	78
NS732	62.3	116	160	58	1	4	4	14.0	23.0	25	22.0	77
Bolal	68.9	122	163	100	13	51	3	13.8	21.4	28[a]	21.4	75
Marimp 3	67.2	119	165	77	4	26	4	15.0	22.7	26	21.2	74
Atlas 66	68.0	127	167	102	8	54	5	16.6	22.6	27	20.7	72
Kirac 66	68.4	126	166	100	10	59	4	15.3	18.6	29	18.3	64
Lerma Rojo 64	--[b]	--[b]	--[b]	--[b]	--[b]	0	3	15.8[b]	12.9	30	14.2	49
Mean	66.0	129.9	165.6	87.2	3.4	20.4	2.5	14.7	28.9		26.3	91.3
L.S.D. of cultivar means (.05)	5.5	8.2	5.6	7.7	8.1	38.5	2.5	0.9	6.6		6.2	--
Coefficient of variation (%)	4.2	4.4	0.6	4.5	97.4	36.2	22.9	3.9	16.6		17.2	

a) Ten sites only.
b) Entry was not included in analysis.

Table 60. Summary of yield, quality, and agronomic data for the 30 cultivars grown in the Sixth International Winter Wheat Performance Nursery at sites in the Southern Hemisphere, 1974.

Cultivar	Test weight kg/hl	Date of Flowering (days from Jan. 1)	Date of Ripening (days from Jan. 1)	Plant height cm	Lodging %	Shattering %	Frost damage 0-9	Protein %	Yield q/ha	Yield % of Bezostaya 1
Number of sites	3	4	3	4	2	3	2	4	4	
Blueboy	75.1	303	340	81	9	0	2	14.5	34.2	127
Likafen	78.9	310	347	85	4	14	1	16.2	32.3	120
Clarion	74.1	324	360	87	4	0	2	15.9	31.8	118
Manella	77.5	318	353	89	5	1	1	15.8	30.7	114
Carifen 12	71.3	315	352	76	0	7	2	15.6	30.3	112
Burgas 2	77.1	303	341	81	6	5	1	16.2	29.5	109
Caribo	75.1	322	360	92	6	3	2	15.4	29.2	108
Dwarf Bezostaya	78.7	305	342	66	0	0	1	14.2	29.0	107
Aurora	80.2	310	346	89	29	9	1	16.2	28.9	107
Blueboy II	75.6	302	342	91	10	8	3	14.9	28.8	107
Maris Nimrod	73.6	314	352	87	8	0	1	14.7	28.3	105
Kavkaz	79.0	313	349	91	13	3	1	17.0	27.7	103
Zenith	77.0	320	357	88	5	0	1	16.4	27.7	103
Dacia	77.8	306	345	96	44	9	2	16.8	27.3	101
Bezostaya 1	78.9	304	339	88	15	3	1	15.6	27.0	100
Rousalka	77.2	297	334	77	1	10	3	16.2	26.7	99
Lancota (NE701132)	76.7	309	347	98	30	0	1	17.4	25.7	95
Diplomat	75.4	326	366	95	4	11	2	15.2	25.6	95
Kirac 66	79.5	303	345	98	41	12	2	16.7	25.4	94
Jubilar	73.9	323	359	92	6	11	2	15.7	24.5	91
Demar 4	78.0	302	342	85	11	26	2	15.9	24.0	89
Favorit	75.5	300	338	88	24	4	2	16.7	23.9	89
Moldova	76.8	297	333	96	43	8	2	17.2	23.8	88
Zlatna Dolina	74.0	300	337	75	9	12	5	14.8	23.6	87
Lerma Rojo 64	76.8	290	330	92	35	6	4	16.9	23.3	86
Sanja (Zg 5996/66)	74.5	299	336	70	6	13	1	14.9	23.1	86
NS732	70.3	295	336	57	0	13	2	14.8	22.5	83
Marinp 3	76.7	298	336	83	33	13	6	16.1	22.1	82
Bolal	74.2	299	337	95	35	5	1	15.2	21.7	80
Atlas 66	75.1	305	345	100	49	8	2	18.3	17.3	64
Mean	76.2	307.1	344.9	86.3	16.1	7.1	1.8	15.9	26.5	98.2
L.S.D. of cultivar means (.05)	4.3	5.9	6.1	12.7	22.7	17.2	2.9	1.8	11.3	--
Coefficient of variation (%)	1.6	1.0	0.2	5.2	32.8	79.5	15.5	3.5	17.6	--

Table 61. Summary of yield, quality, and agronomic data for the 30 cultivars grown in the Sixth International Winter Wheat Performance Nursery at sites in the Near Eastern region, 1974.

Cultivar	Test weight kg/hl	Date of Flowering days from Jan. 1	Date of Ripening days from Jan. 1	Plant height cm	Lodging %	Shattering %	Winter survival %	1000-kernel weight g	Frost damage 0-9	Protein %	Yield q/ha	Yield % of Bezostaya 1
Number of sites	2	8	9	7	2	4	3	2	2	9	11	
Bolal	79.9	134	170	93	4	5	84	31.1	1	14.4	31.1	108
Blueboy	75.6	136	174	87	2	0	88	27.7	1	13.8	30.7	106
Blueboy II	76.3	136	175	87	2	0	83	28.0	1	14.3	30.4	105
Lerma Rojo 64	79.2	128	164	87	2	6	74	34.1	1	14.7	29.9	103
Bezostaya 1	80.7	136	173	83	0	4	84	31.9	1	14.8	28.9	100
Burgas 2	78.2	137	176	73	0	3	80	32.8	1	15.7	28.6	99
Favorit	79.4	135	171	86	1	2	84	33.7	1	15.3	28.1	97
Kirac 66	80.1	137	176	100	15	6	81	31.8	1	15.7	27.6	96
Aurora	79.0	139	176	84	0	3	82	34.2	2	15.7	27.3	94
Rousalka	79.6	132	169	68	0	1	82	32.2	1	15.6	27.1	94
Kavkaz	78.1	140	177	85	0	2	83	33.9	2	15.3	26.7	92
Lancota (NE701132)	79.2	139	177	92	6	2	83	30.2	1	15.8	26.5	92
Likafen	78.7	139	178	78	0	4	80	28.3	1	15.3	26.5	92
Dacia	76.4	136	173	88	0	3	84	33.5	1	16.0	26.5	92
Moldova	78.8	132	169	89	4	2	80	31.7	1	16.1	26.2	91
Marimp 3	73.3	135	170	76	0	3	72	26.8	1	15.3	25.6	89
Zlatna Dolina	76.6	134	170	64	0	1	86	28.3	1	14.7	25.5	88
Dwarf Bezostaya	78.1	138	174	58	0	6	86	27.2	1	13.8	25.4	88
Demar 4	76.3	135	172	80	0	7	81	24.6	1	14.1	24.7	85
Sanja (Zg 5996/66)	76.4	135	171	61	0	8	85	26.2	1	14.5	24.6	85
Caribo	74.1	147	184	85	0	0	87	24.3	2	15.5	22.8	79
Carifen 12	72.1	143	179	66	0	1	82	24.6	2	15.1	21.8	75
Manella	74.9	144	181	76	0	0	79	27.8	1	15.4	21.2	73
Atlas 66	75.3	137	174	103	5	8	73	27.4	1	17.6	20.9	72
Zenith	74.0	147	183	77	0	0	81	20.6	1	16.5	20.9	72
NS732	75.5	133	170	53	0	16	77	26.5	1	14.2	20.8	72
Maris Nimrod	74.5	147	185	78	0	3	84	34.5[a]	2	14.7	20.5	71
Clarion	72.3	150	186	73	0	7	78	22.6	2	15.8	19.2	66
Jubilar	72.2	149	180	85	0	1	79	22.4	2	15.7	17.5	61
Diplomat	74.6	148	186	81	0	1	81	27.5	2	16.5	15.7	54
Mean	76.6	138.5	175.5	79.9	1.4	3.5	81.3	28.7	1.3	15.3	25.0	85.9
L.S.D. of cultivar means (.05)	3.3	3.3	4.5	6.7	4.4	7.5	10.6	12.3	1.2	0.9	3.9	--
Coefficient of variation (%)	2.2	1.9	3.5	5.6	299.1	177.9	10.3	6.9	39.2	7.1	19.3	--

a) Entry was not included in analysis.

Table 62. Summary of yield and agronomic data for the 30 cultivars grown in the Sixth International Winter Wheat Performance Nursery at sites in the Far Eastern region, 1974.

Cultivar	Date of Flowering (days from Jan. 1)	Date of Ripening (days from Jan. 1)	Plant height cm	Lodging %	Winter survival %	Yield g/ha	Yield % of Bezostaya 1
Number of sites	2	2	2	2	2	2	
Bezostaya 1	155	192	108	3	95	46.9	100
Aurora	157	194	107	18	94	46.6	99
Burgas 2	155	194	93	3	93	45.5	97
Dacia	155	192	116	38	83	45.2	96
Blueboy II	155	196	113	36	75	43.9	94
Kavkaz	159	197	113	11	96	43.2	92
Moldova	151	190	116	44	82	41.8	89
Dwarf Bezostaya	155	197	70	0	90	39.1	83
Bolal	153	191	117	87	77	38.9	83
Rousalka	150	190	83	0	68	38.4	82
Favorit	154	192	104	59	78	37.5	80
Blueboy	156	195	113	36	63	36.8	78
Sanja (Zg 5996/66)	154	191	74	0	52	34.3	73
Zlatna Dolina	154	186	77	1	56	33.2	71
Manella	162	197	105	12	74	32.2	69
Lancota (NE701132)	157	194	111	59	43	31.6	67
Zenith	163	198	108	34	74	30.6	65
Demar 4	155	191	91	0	56	28.3	60
Caribo	166	199	109	0	49	27.5	59
Clarion	165	201	105	0	67	26.5	57
Marimp 3	152	187	92	0	50	23.9	51
NS732	152	190	60	0	49	23.7	51
Likafen	159	196	98	0	59	22.2	47
Diplomat	167	203	112	1	71	22.1	47
Jubilar	164	202	111	2	54	21.7	46
Maris Nimrod	166	201	89	2	55	21.1	45
Atlas 66	157	196	107	36	46	19.5	42
Carifen 12	162	195	75	1	56	17.7	38
Lerma Rojo 64	143[a]	184[a]	89[a]	0[a]	16	16.5	35
Kirac 66	158	195	112	68	52	14.4	31
Mean	157.5	194.6	99.6	19.1	65.7	31.7	66.5
L.S.D. of cultivar means (.05)	7.5	10.3	7.3	22.8	43.6	22.4	--
Coefficient of variation (%)	4.8	5.4	7.5	120.8	11.0	14.4	--

a) One location only; entry not included in mean and analysis.

Table 63. Reaction of International Winter Wheat cultivars to Yellow rust (Puccinia striiformis) in 1974.

Cultivar	Balcarce, Argentina		Temuco, Chile		Cambridge, England		Orgerus,[a] France		Suwon, Korea		Beirut,[a] Lebanon		Toluca,[b] Mexico		Toluca,[b] Mexico		Logrono, Spain	
	Sev. %	Resp.	Sev. %	Resp.	Sev. %	Resp.	Sev. %	Resp.	Sev. %	Resp.	Sev. %	Resp.	Sev. %	Resp.	Sev. %	Resp.	Sev. %	Resp.
Clarion	0	0	6	MR-MS	0	0	50	MS	12	R-MR	0	0	5	0-MR	7	R	0	VR-MR
Marimp 3	30	0-MS	87	MS-S	16	0	99	VS	70	MS-S	0	0	5	R-MR	10	MR	0	VR-MR
Dacia	25	MR-MS	0	0-MR	0	0	0	0	45	MS-S	0	0	1	R	5	MR	0	VR
Zlatna Dolina	55	MR-S	92	MS-S	25	0	15	M	6	R	10	MS	5	R-MR	25	MR	0	VR-MR
Maris Nimrod	22	MR-S	37	MR-MS	0	0	1	R	2	R	0	0	1	R	7	R	0	VR-R
Zenith	5	MR-MS	15	MR-MS	0	0	1	R	0	R	0	0	10	0-MR	12	MR	0	VR-R
Rousalka	2	0-MS	10	MS	0	0	0	0	13	R-S	0	0	0	0-R	15	MR	0	0-VR
Caribo	10	0-MR	15	MS	0	0	5	MR	12	R-MS	1	MS	15	0-MR	20	MR	0	0-R
Diplomat	0	0-MR	5	R-MS	0	0	0	0	50	S	0	0	5	MR-MS	3	R	0	0-VR
Kirac 66	0	0	0	0	0	0	0	0	42	MR-S	0	0	10	R-MR	30	MR	0	VR-MS
Lancota (NE701132)	0	0	47	MS	2	0	0	0	12	R-MR	0	0	10	MR	25	MR-MS	0	VR-M
Carifen 12	5	0-S	27	MS	0	0	0	0	45	MS-S	0	0	7	MR	15	R	0	0-VR
Moldova	20	MS	27	MR-MS	0	0	0	0	17	MR-S	1	R	10	R-MR	20	MR	0	0-VR
Atlas 66	5	0-MS	96	S	2	0	1	R	10	R	10	S	45	MR-MS	55	MR-MS	0	R-MR
Bezostaya 1	15	0-MR	60	MS	2	0	20	M	0	R	0	0	15	MR	12	R-MR	0	VR-M
Lerma Rojo 64	5	0-MR	10	MR-MS	0	0	0	0	6	R-MR	0	0	35	MR-MS	60	MR-S	0	R-MR
Blueboy	0	0	20	MR-MS	4	0	0	0	74	S	0	0	15	R-MR	17	MR	0	R-M
Dwarf Bezostaya	0	0	40	MR-MS	0	0	10	MR	3	R	0	0	3	R-MR	12	MR-MS	0	0-MR
Sanja (Zg 5996/66)	25	0-S	82	MS-S	7	0	10	MR	25	R-S	0	0	1	MR	27	R-MR	0	R-MS
Likafen	15	0-MS	4	MS	0	0	0	0	6	R-S	60	S	5	R-MR	3	R-MR	0	0
Favorit	0	0	69	MR-S	2	0	50	S	33	MR-S	0	0	35	MR-MS	22	R-MS	0	VR-M
Bolal	10	0-MS	92	MS-S	63	0	50	S	7	R-MR	1	MR	65	MS-S	85	S	0	0-VR
Burgas 2	5	0-MS	15	MR-MS	0	0	5	MR	10	R-MR	0	0	7	MR	10	R-MR	0	VR-MS
Blueboy II	0	0	11	MS	1	0	0	0	25	R-MS	0	0	35	MR-S	6	R	0	VR
Manella	0	0	0	0	0	0	0	0	50	MR-S	0	0	1	R	6	0-MR	0	R-MR
Jubilar	0	0	45	MR-MS	0	0	0	0	0	R	0	0	20	R-MR	20	R-MR	0	VR-R
Aurora	0	0	25	MR-MS	1	0	1	R	0	R	0	0	22	MR	5	R-MR	0	0-VR
Demar 4	0	0	65	MS-S	2	0	1	R	69	MR-S	0	0	10	MR	7	R-MR	0	0-VR
Kavkaz	0	0	3	MS	0	0	5	MR	0	R-MR	0	0	30	MR-MS	5	R	0	VR-R
NS732	0	0	82	MS-S	2	0	0	0	60	S	0	0	10	MR	7	R	0	VR-M

a) One replication only.
b) Two replications only.

Table 63. Reaction of International Winter Wheat cultivars to Yellow rust (*Puccinia striiformis*) in 1974. Concluded.

Cultivar	Svalof, Sweden		Zurich, Switzerland		Davis, California U.S.A.		Corvallis,[a] Oregon U.S.A.		Pullman, Washington U.S.A.		Krasnodar,[b] U.S.S.R.		Novi Sad, Yugoslavia		Severity	
	Sev. %	Resp.	Sev. %	Resp.	Sev. %	Resp.	Sev. %	Resp.	Sev. %	Resp.	Sev. %	Resp.	Sev. %	Resp.	Cultivar mean over 16 locations	High score
Clarion	0	0	0	0	0	0	0	0-MS	12	0	0	VR	42	0	8	50
Marimp 3	2	0	20	MR-M	0	0	68	S-VS	32	0	0	R	37	0	28	99
Dacia	0	0	0	0	0	0	25	MS	18	0	0	VR	35	0	10	45
Zlatna Dolina	3	0	43	M-S	22	0	82	S	27	0	5	MS	18	0	27	92
Maris Nimrod	0	0	0	0	0	0	0	0	7	0	0	VR	7	0	5	37
Zenith	0	0	5	MR	0	0	1	MR-MS	12	0	0	VR	20	0	5	20
Rousalka	0	0	2	0-MR	0	0	1	R-MS	11	0	0	VR	27	0	5	27
Caribo	0	0	0	0	0	0	1	MS-S	6	0	0	VR	42	0	8	42
Diplomat	0	0	0	0	0	0	0	0-MS	3	0	0	VR	57	0	8	57
Kirac 66	2	0	2	0-MR	0	0	5	MR-MS	5	0	0	VR	52	0	9	52
Lancota (NE701132)	1	0	20	M	3	0	17	MR	27	0	0	VR	35	0	12	47
Carifen 12	0	0	11	0-MR	0	0	2	MR	2	0	0	VR	40	0	10	45
Moldova	1	0	22	MR	0	0	10	S	32	0	0	VR	35	0	12	35
Atlas 66	0	0	5	0-MR	20	0	43	R-S	22	0	10	S	8	0	21	96
Bezostaya 1	1	0	20	MR-M	5	0	15	R-MS	17	0	1	MS	45	0	14	60
Lerma Rojo 64	0	0	1	0-MR	0	0	0	0	27	0	0	VR	57	0	13	60
Blueboy	3	0	1	0-MR	40	0	56	MS-S	37	0	0	VR	47	0	20	56
Dwarf Bezostaya	0	0	31	MR-M	2	0	13	MS	27	0	10	S	52	0	13	52
Sanja (Zg 5996/66)	0	0	32	MR-S	6	0	43	MS	45	0	1	MS	18	0	20	82
Likafen	0	0	0	0	0	0	0	0-MS	2	0	5	S	67	0	10	67
Favorit	0	0	1	0-MR	13	0	31	MS-S	37	0	5	S	37	0	21	69
Bolal	9	0	57	S	77	0	75	MS-S	62	0	0	VR	52	0	44	92
Burgas 2	0	0	1	0-MR	1	0	1	MR	5	0	0	VR	55	0	7	55
Blueboy II	2	0	1	0-MR	8	0	25	MS	20	0	0	MS	52	0	12	52
Manella	0	0	2	0-MR	0	0	1	MR-MS	12	0	0	VR	26	0	6	50
Jubilar	0	0	0	0	0	0	3	MR	5	0	0	VR	15	0	7	45
Aurora	1	0	0	0	0	0	4	MR	16	0	0	VR	57	0	8	57
Demar 4	1	0	7	MR	1	0	10	S	12	0	0	VR	30	0	13	69
Kavkaz	0	0	1	0-MR	0	0	19	R-S	2	0	0	VR	40	0	7	40
NS732	0	0	32	M-S	5	0	60	S	32	0	0	VR	7	0	19	82

a) One replication only.
b) Two replications only.

Table 64. Reaction of International Winter Wheat Performance Nursery cultivars to Stem rust (*Puccinia graminis tritici*) in 1974.

Cultivar	Kabul, Afghanistan		Balcarce, Argentina		Martonvasar, Hungary		Szeged, Hungary		Karaj, Iran		Milano, Italy		Rieti, Italy	
	Sev. %	Resp.	Sev. %	Resp.	Sev. %	Resp.	Sev. %	Resp.	Sev. %	Resp.	Sev. %	Resp.	Sev. %	Resp.
Clarion	15	0-S	0	0	65	S	0	MS-S	36	MS-S	0	0	22	0-S
Marimp 3	0	0	0	0	35	M	0	0-MR	17	0-S	0	0	25	0-S
Dacia	0	0	0	0	20	MR-M	0	0-MS	15	0-S	0	0	42	MR-S
Zlatna Dolina	0	0	0	0	56	MS	0	0-M	12	0-S	0	0	20	0-VS
Maris Nimrod	12	0-MS	7	0-MR	66	S	0	0-MS	37	0-S	0	0	32	0-VS
Zenith	5	0-S	4	MR	46	MS	0	M-MS	8	0-S	0	0	52	R-VS
Rousalka	0	0	2	0-MR	35	M	0	0	7	0-S	0	0	51	R-MS
Caribo	5	0-S	0	0	55	MS	0	MS	23	MS-S	13	R-S	55	MR-MS
Diplomat	6	0-S	6	0-MR	44	M	0	MS-S	11	0-S	0	0	45	MR-MS
Kirac 66	0	0	2	0-MR	20	MR	0	0-S	0	0	0	0	60	MR-S
Lancota (NE701132)	0	0	2	0-MR	14	MR	0	0	1	0-MS	0	0	0	0
Carifen 12	15	0-S	12	MR-MS	27	M	0	0-M	27	S	0	0	69	R-S
Moldova	0	0	5	0-MR	19	MR	0	0-M	0	0	0	0	37	MR-VS
Atlas 66	0	0	0	0	22	MR	0	0-S	1	0-S	0	0	7	0-MR
Bezostaya 1	0	0	10	0-MS	29	M	0	0-MS	13	MS-S	0	0	17	R-MS
Lerma Rojo 64	0	0	2	0-MS	25	M	0	0	0	0	0	0	8	0-S
Blueboy	15	0-S	37	0-S	21	M	0	0-MS	27	S	0	0	66	MR-VS
Dwarf Bezostaya	0	0	40	MS	38	M	0	0-M	25	0-S	0	0	5	0-MR
Sanja (Zg 5996/66)	0	0	22	0-MS	45	MS	0	0	7	0-S	0	0	7	0-MR
Likafen	0	0	0	0	34	M	0	0-MS	1	0-MS	0	0	35	0-VS
Favorit	0	0	0	0	50	MS	0	0-M	5	0-S	0	0	25	0-VS
Bo:al	0	0	0	0	34	M	0	0-M	2	0-MS	0	0	30	0-VS
Burgas 2	0	0	0	0	56	MS	0	0	0	0	0	0	0	0
Blueboy II	0	0	0	0	30	M	0	0	5	0-S	0	0	15	0-VS
Manella	7	0-S	0	0	79	S	0	M	17	0-S	0	0	45	0-S
Jubilar	17	0-S	0	0	82	S-VS	0	MS-S	31	0-S	0	0	60	MR-MS
Aurora	10	0-MS	0	0	50	MS	0	0	0	0	0	0	0	0
Demar 4	5	0-S	0	0	75	S	0	0-MS	15	0-S	0	0	62	MR-MS
Kavkaz	0	0	0	0	54	S	0	0-VR	0	0	0	0	0	0
NS732	2	0-MS	0	0	50	MS	0	0-M	30	MS-S	0	0	40	0-MS

Table 64. Reaction of International Winter Wheat Performance Nursery cultivars to Stem rust (*Puccinia graminis tritici*) in 1974. Continued.

Cultivar	Morioka Iwate, Japan		Toluca,[a] Mexico		Toluca,[a] Mexico		Kathmandu,[b] Nepal		Fundulea, Romania		Bethlehem, South Africa		Logrono, Spain	
	Sev. %	Resp.	Sev. %	Resp.	Sev. %	Resp.	Sev. %	Resp.	Sev. %	Resp.	Sev. %	Resp.	Sev. %	Resp.
Clarion	0	0-S	40	MS	50	MS-S	99	S	12	MR-S	74	S	0	VR
Marimp 3	0	0	25	MR-S	25	MR-S	10	S	10	MS	0	0-MS	0	VR
Dacia	0	0-S	15	MS-S	45	S	99	S	55	S	94	S	0	VR-MR
Zlatna Dolina	0	0	15	MS	25	MS	80	S	6	R-MR	1	0-S	0	R-MR
Maris Nimrod	0	0	45	S	25	MS-S	99	S	40	S	99	S	0	VR-R
Zenith	1	0-S	45	S	35	MS-S	99	S	50	S-VS	94	S	0	MR-M
Rousalka	0	0	45	S	22	MS	8	MS	57	S	0	0-MS	0	0-R
Caribo	0	0	40	MS-S	15	MR-S	99	S	70	VS	87	S	0	VR
Diplomat	0	0	1	R	20	MR-MS	99	S	35	S-VS	99	S	0	0-VR
Kirac 66	0	0	25	MS-S	15	MR-S	5	MS	45	S	79	S	0	VR-R
Lancota (NE701132)	0	0	30	MS-S	1	MR-MS	5	MS	5	MR	77	S	0	VR-R
Carifen 12	0	0	25	MS	40	MS-S	99	S	75	VS	80	S	0	VR
Moldova	1	0-S	20	MS-S	50	MS	80	S	5	R-MR	0	0	0	VR
Atlas 66	0	0	20	MS-S	3	MR-MS	1	S	7	R	64	S	0	R-MR
Bezostaya 1	0	0	25	R-S	20	MS-S	10	S	20	S	0	0-S	0	R
Lerma Rojo 64	0	0	35	MS-S	10	MR-MS	99	S	0	0	0	0	0	R-MR
Blueboy	10	0-S	35	S	25	MS-S	0	0	60	S-VS	69	S	0	R-MR
Dwarf Bezostaya	0	0	30	S	25	MR-MS	0	0	22	MS-VS	0	0	0	VR-R
Sanja (Zg 5996/66)	0	0-S	12	MR-MS	7	MR-MS	0	0	35	S	0	0	0	R-MR
Likafen	0	0	45	MS-S	5	MS	10	S	10	MR	99	S	0	VR
Favorit	0	0-S	25	R-S	30	MR-MS	80	S	55	S	0	0-S	0	VR-M
Bolal	0	0	17	MS-S	25	MS-S	60	S	10	0-S	0	0	0	0-MR
Burgas 2	0	0	5	R-MS	10	MR-MS	0	0	10	R	0	0	0	VR-MR
Blueboy II	0	0	5	R-S	3	R-MS	40	S	10	0-R	0	0	0	VR-M
Manella	0	0	20	MS	30	MR-S	99	S	62	S	69	S	0	R-MS
Jubilar	0	0	35	MS-S	17	MS-S	99	S	55	S-VS	91	S	0	VR-M
Aurora	0	0	20	MS	3	0-MR	0	0	10	R	0	0	0	0-VR
Demar 4	0	0	40	MS-S	35	MS-S	99	S	30	S	49	S	0	VR-R
Kavkaz	0	0	12	MR-MS	3	MS	0	0	10	R	0	0	0	R-M
NS732	0	0	20	R-S	50	MS-S	99	S	75	VS	1	0-S	0	VR

a) Two replications only.
b) One replication only.

Table 64. Reaction of International Winter Wheat Performance Nursery cultivars to Stem rust (*Puccinia graminis tritici*) in 1974. Concluded.

Cultivar	Fort Collins,[a] Colorado U.S.A. Sev. %	Fort Collins,[a] Colorado U.S.A. Resp.	Lincoln, Nebraska U.S.A. Sev. %	Lincoln, Nebraska U.S.A. Resp.	Krasnodar,[b] U.S.S.R. Sev. %	Krasnodar,[b] U.S.S.R. Resp.	Novi Sad, Yugoslavia Sev. %	Novi Sad, Yugoslavia Resp.	Zagreb,[a] Yugoslavia Sev. %	Zagreb,[a] Yugoslavia Resp.	Severity: Cultivar mean over 19 locations	Severity: High score
Clarion	50	S	58	0	1	MR-MS	40	S-VS	35	S	31	99
Marimp 3	30	S	38	0	1	MR-MS	7	MS-VS	20	S	12	38
Dacia	10	S	66	0	1	MS	21	S-VS	25	S	27	99
Zlatna Dolina	20	S	5	0	0	MR	3	O-VS	5	S	13	90
Maris Nimrod	30	S	37	0	5	S	37	S-VS	40	MS	32	99
Zenith	20	S	52	0	15	S	42	VS	30	MS	31	99
Rousalka	10	S	32	0	3	S	3	O-VS	50	MS	17	57
Caribo	15	S	31	0	3	S	32	VS	30	S	30	99
Diplomat	50	S	37	0	3	S	42	VS	25	MS	28	99
Kirac 66	15	S	10	0	0	VR	55	S-VS	10	MR	18	79
Lancota (NE701132)	10	S	0	0	0	VR	7	O-MS	20	S	9	77
Carifen 12	55	S	81	0	3	S	47	S-VS	45	S	37	99
Moldova	15	S	28	0	3	S	3	MS-S	15	MS	15	60
Atlas 66	5	S	10	0	1	MR	9	MR-S	15	MS	9	64
Bezostaya 1	80	S	87	0	5	S	16	S-VS	10	S	18	87
Lerma Rojo 64	5	S	1	0	0	VR	0	O	15	R	11	99
Blueboy	20	S	92	0	2	S	21	MS-VS	60	MS	29	92
Dwarf Bezostaya	90	S	91	0	3	R	6	O-VS	20	S	21	91
Sanja (Zg 5996/66)	10	S	4	0	0	VR	10	MS-S	10	MS	9	45
Likafen	5	S	12	0	0	VR	22	S-VS	10	MR	15	99
Favorit	30	S	37	0	1	MS	13	S-VS	55	S	21	80
Bolal	10	S	6	0	0	VR	0	O-S	15	R	11	60
Burgas 2	20	S	15	0	0	VR	0	O-O	10	R	7	56
Blueboy II	30	S	20	0	1	MS	0	O-MS	20	MR	9	40
Manella	70	S	55	0	5	S	40	S-VS	45	S	34	99
Jubilar	70	S	68	0	8	S	50	S-VS	50	S	39	99
Aurora	5	S	21	0	0	VR-R	0	O-S	5	MR	7	50
Demar 4	40	S	28	0	8	S	40	MS-VS	55	S	31	99
Kavkaz	5	S	12	0	0	VR	2	MS-S	4	MR	5	54
NS732	15	S	57	0	0	VR	2	O-VS	35	S	25	99

a) One replication only.
b) Two replications only.

Table 65. Reaction of International Winter Wheat Performance Nursery cultivars to Leaf rust (*Puccinia recondita*) in 1974.

Cultivar	Balcarce, Argentina Sev.	Balcarce, Argentina Resp.	Orgerus,[a] France Sev.	Orgerus,[a] France Resp.	Szeged, Hungary Sev.	Szeged, Hungary Resp.	Milano, Italy Sev.	Milano, Italy Resp.	Rieti, Italy Sev.	Rieti, Italy Resp.	Morioka Iwate, Japan Sev.	Morioka Iwate, Japan Resp.	Suwon, Korea Sev.	Suwon, Korea Resp.
	%		%		%		%		%		%		%	
Clarion	76	0-MS	0	0	0	0-S	0	0	18	0-MR	3	R-MR	30	MR-MS
Marimp 3	65	MR-S	0	0	0	0	4	R-MR	84	MR-S	52	S	62	MS-S
Dacia	40	S	0	0	0	0	0	0	12	0-MR	2	VR-MR	40	S
Zlatna Dolina	20	MR-S	0	0	0	0	0	0-R	7	0-MR	0	0-VR	15	R-MR
Maris Nimrod	65	MR-S	0	0	0	0-MR	0	0	10	0-MR	11	M-MS	47	MR-MS
Zenith	82	S	1	R	0	0-S	6	0-MS	57	0-MR	54	S-VS	18	R-MR
Rousalka	25	R-S	0	0	0	0	0	0	32	0-MR	0	0-VR	7	R-MR
Caribo	62	R-S	5	MR	0	0-S	36	MR-MS	72	MR-S	23	S	7	R-MR
Diplomat	80	S	5	MR	0	0-S	4	R-MR	42	MR	46	S	62	MS-S
Kirac 66	87	S	50	MS	0	0	11	R-S	87	MR-MS	99	S	84	MS-S
Lancota (NE701132)	26	MS-S	0	0	0	0	0	0	0	0	4	R	22	R-MS
Carifen 12	63	MS-S	0	0	0	0	12	MR-MS	65	MR	73	S-VS	49	S
Moldova	40	S	0	0	0	0	0	0	27	0-MR	2	VR-R	35	R-S
Atlas 66	47	S	0	0	0	0-VR	0	0	0	0	3	0-M	10	R
Bezostaya 1	45	MS-S	0	0	0	0	0	0	5	0-MR	4	VR-M	23	R-MR
Lerma Rojo 64	15	MS-S	0	0	0	0	0	0	5	0-MR	49	0-S	17	R-MR
Blueboy	32	MS-S	0	0	0	0-S	0	0	47	R-MR	7	R-M	98	S
Dwarf Bezostaya	50	MS-S	0	0	0	0	0	0	0	0	5	R	7	R
Sanja (Zg 5996/66)	47	MR-S	0	0	0	0	0	0-R	12	0-MR	0	0	26	R-MR
Likafen	50	MS	0	0	0	0	1	0-MR	20	0-MR	36	MS-S	50	MS-S
Favorit	65	MS-S	0	0	0	0	0	0-R	27	0-MR	45	MS-S	62	MS-S
Bolal	77	MS-S	0	0	0	0	10	0-MS	96	MR-S	99	S-VS	30	R-MR
Burgas 2	77	S	0	0	0	0	0	0	0	0	0	0-VR	35	R-MR
Blueboy II	32	MS-S	1	R	0	0	1	0-MS	0	0	5	0-R	62	MS-S
Manella	70	MS-S	1	R	0	0-S	46	MS	84	MR-MS	10	MR-MS	45	MS-S
Jubilar	90	S	1	R	0	0-S	17	MR-MS	72	MR-MS	52	S	35	R-MR
Aurora	37	MR-S	0	0	0	0	0	0	0	0	3	VR-R	4	R-S
Demar 4	55	MR-MS	0	0	0	0	31	MR-S	90	MR-S	82	S-VS	50	MR-MS
Kavkaz	32	MR-MS	0	0	0	0	0	0-R	0	0	2	0-R	11	R-MR
MS732	5	MR-MS	0	0	0	0	0	0	25	0-MR	65	S-VS	35	MS-S

a) One replication only.

Table 65. Reaction of International Winter Wheat Performance Nursery cultivars to Leaf rust (Puccinia recondita) in 1974. Continued.

Cultivar	Toluca,[a] Mexico		Toluca,[a] Mexico		Kathmandu,[b] Nepal		Wageningen, Netherlands		Warsaw, Poland		Fundulea, Romania		Bethlehem, South Africa		Logrono, Spain	
	Sev. %	Resp.	Sev. %	Resp.	Sev. %	Resp.	Sev. %	Resp.	Sev. %	Resp.	Sev. %	Resp.	Sev. %	Resp.	Sev. %	Resp.
Clarion	15	MR-MS	35	MR-S	99	S	5	0	0	0	9	MR	79	S	0	R
Marimp 3	20	MR-S	10	0-S	5	S	0	0	0	0	47	S	1	0-S	0	R-MR
Dacia	0	0	2	0-MR	60	S	0	0	0	0	10	MS	3	0-MS	0	R
Zlatna Dolina	0	0	0	0-MR	5	S	2	0	0	0	7	R	0	0-S	0	0-MR
Maris Nimrod	35	MS	40	MS-S	1	S	1	0	0	0	37	MS-S	27	MR	0	VR-R
Zenith	35	MS	25	MR-MS	1	S	3	0	0	0	55	VS	54	S	0	VR-R
Rousalka	20	MS-S	0	0	0	0	0	0	0	0	10	MR	0	0-MR	0	VR
Caribo	35	MS-S	45	MS-S	0	0	11	0	1	0-MR	45	MR-MS	89	S	0	VR
Diplomat	55	S	55	S	5	S	0	0	2	0-MR	45	S-VS	91	S	0	0-MR
Kirac 66	35	MS-S	30	S	30	S	0	0	20	0-S	50	S-VS	40	S	0	VR-MR
Lancota (NE701132)	25	0-S	10	MR-MS	0	0	0	0	0	0	11	R-MR	23	MS	0	0-R
Carifen 12	40	MS-S	0	0	0	0	0	0	1	0-MR	70	VS	27	S	0	VR-R
Moldova	0	0-MS	10	0-MS	0	0	0	0	0	0	5	R	0	0	0	0
Atlas 66	0	0	0	0-MS	5	S	0	0	0	0	5	R	3	MS	0	VR-R
Bezostaya 1	0	0	0	0	0	0	0	0	1	0-MR	35	MS	0	0	0	VR-MR
Lerma Rojo 64	10	0-MS	20	MS-S	0	0	0	0	1	0-MR	0	0	0	0	0	R-M
Blueboy	25	MS-S	5	0-MS	0	0	0	0	0	0	9	R-MR	10	S	0	VR-MR
Dwarf Bezostaya	15	0-MS	10	MR	0	0	0	0	0	0	22	MR-MS	0	0	0	0-MR
Sanja (Zg 5996/66)	0	0	0	0-MR	0	0	0	0	0	0	5	R	0	0-MS	0	MR-M
Likafen	30	MS-S	0	0	0	0	0	0	0	0	9	R-MR	30	MS	0	0-R
Favorit	10	0-MS	15	MS	40	S	3	0	0	0	45	S	0	0-MR	0	MR
Bolal	10	0-MS	0	0	30	S	6	0	0	0	80	S	0	0	0	VR-M
Burgas 2	25	MR-MS	20	MS-S	0	0	0	0	10	0-MS	32	MS-S	0	0	0	R-MR
Blueboy II	32	MR-S	0	0-MR	0	0	0	0	0	0	20	MR-MS	4	0-S	0	VR-R
Manella	35	MS-S	15	MR-MS	0	0	5	0	1	0-MR	50	S-Vs	8	MS-S	0	R
Jubilar	50	S	25	MR-MS	0	0	6	0	6	0-MS	17	MR-MS	49	MS-S	0	VR
Aurora	15	0-S	15	MS	0	0	0	0	17	0-S	35	S	0	0	0	0-VR
Demar 4	0	0	30	MR	0	0	1	0	1	0-MR	42	S	11	MS-S	0	0-VR
Kavkaz	0	0-MR	0	0	0	0	2	0	1	0-MR	55	S-VS	2	0-MR	0	R-MR
NS732	0	0	10	MR-MS	0	0	0	0	0	0	40	S	0	0	0	VR-R

a) Two replications only.
b) One replication only.

Table 65. Reaction of International Winter Wheat Performance Nursery cultivars to Leaf rust (Puccinia recondita) in 1974. Concluded.

Cultivar	Lincoln, Nebraska U.S.A.		Stillwater,[a] Oklahoma U.S.A.		Pullman, Washington U.S.A.		Krasnodar,[a] U.S.S.R.		Novi Sad, Yugoslavia		Zagreb,[b] Yugoslavia		Severity	
	Sev. %	Resp.	Sev. %	Resp.	Sev. %	Resp.	Sev. %	Resp.	Sev. %	Resp.	Sev. %	Resp.	Cultivar mean over 21 locations	High score
Clarion	15	MR-S	5	MS-S	22	0	1	MS	4	S-VS	40	S	22	99
Marimp 3	68	S	10	0-S	57	0	1	MS	3	0-VS	50	S	26	84
Dacia	3	R	10	S	15	0	0	VR	1	S-VS	50	S	12	60
Zlatna Dolina	6	R-MR	3	S	32	0	1	MR	1	0-S	10	R	5	32
Maris Nimrod	81	MS-S	5	0-S	25	0	3	MS	1	S-VS	15	S	19	81
Zenith	67	S	10	S	72	0	1	MS	15	VS	40	S	28	82
Rousalka	2	R	10	0-S	7	0	0	VR	1	R-S	5	S	6	32
Caribo	70	S	12	S	70	0	1	MS	22	VS	25	S	30	89
Diplomat	95	S	10	S	70	0	1	MS	17	VS	20	S	34	95
Kirac 66	82	S	30	0-S	77	0	8	S	4	S-VS	15	S	40	99
Lancota (NE701132)	0	R	2	0-S	20	0	0	MR	4	R-S	10	S	7	26
Carifen 12	94	S	50	S	82	0	15	S	8	S-VS	60	S	34	94
Moldova	15	R-MR	5	0-S	30	0	0	VR	0	0-S	30	S	9	40
Atlas 66	10	R-MR	3	S	10	0	0	VR	3	MR-S	15	S	5	47
Bezostaya 1	8	R-MS	5	0-S	65	0	3	MS	1	MR-VS	5	S	10	65
Lerma Rojo 64	91	S	0	0	30	0	0	0	0	0	0	0	11	91
Blueboy	8	R-MR	40	S	25	0	2	MS	10	MS-VS	50	S	18	98
Dwarf Bezostaya	1	R-MS	7	S	62	0	2	MS	3	0-VS	5	R	9	62
Sanja (Zg 5996/66)	8	R-MR	10	S	12	0	0	VR	3	R-S	2	R	6	47
Likafen	99	S	60	S	62	0	0	MS	3	MS-S	5	MR	22	99
Favorit	40	MR-S	20	S	32	0	1	MS	1	S-VS	60	S	22	65
Bolal	98	S	50	S	5	0	1	MS	0	0-VS	70	S	32	99
Burgas 2	2	R	0	0	30	0	5	S	3	MR-MS	5	R	12	77
Blueboy II	2	R	2	0-S	12	0	0	VR	3	0-MS	10	R	9	62
Manella	46	S	20	S	62	0	2	S	10	S-VS	45	S	26	84
Jubilar	72	S	7	S	72	0	2	S	11	S-VS	60	S	31	90
Aurora	6	R-MR	0	0	40	0	5	S	3	MS-VS	5	R	9	40
Demar 4	82	S	40	S	72	0	5	S	10	S-VS	40	S	31	82
Kavkaz	1	R	0	0	25	0	2	S	2	MS-S	1	R	6	55
NS732	35	MR-MS	30	S	57	0	0	VR	0	0-VS	2	R	14	65

a) Two replications only.
b) One replication only.

Table 66. Reaction of International Winter Wheat Performance Nursery cultivars to Powdery mildew (Erysiphe graminis) in 1974.

Cultivar	Vienna, Austria Sev. %	Tolbukhin, Bulgaria Sev. %	Cambridge,[a] England Sev. %	Orgerus,[b] France Sev. %	Martonvasar, Hungary Sev. %	Milano, Italy Sev. %	Rieti, Italy Sev. %	Wageningen, Netherlands Sev. %
Clarion	75	15	80	70	50	96	31	13
Marimp 3	80	10	40	50	40	75	42	2
Dacia	77	15	75	50	89	65	32	10
Zlatna Dolina	57	1	15	60	12	21	5	5
Maris Nimrod	67	1	40	0	12	68	13	0
Zenith	55	1	20	50	37	45	13	1
Rousalka	75	5	45	70	32	0	33	15
Caribo	70	10	70	80	57	94	15	12
Diplomat	77	10	85	90	85	99	17	26
Kirac 66	82	25	80	80	94	99	25	31
Lancota (NE701132)	70	10	75	70	32	31	2	12
Carifen 12	75	20	80	60	70	84	22	18
Moldova	80	20	55	60	80	65	10	12
Atlas 66	60	5	50	50	40	60	5	6
Bezostaya 1	72	25	60	50	94	52	7	6
Lerma Rojo 64	80	25	75	50	85	91	63	28
Blueboy	80	20	65	90	82	95	40	23
Dwarf Bezostaya	75	20	65	50	85	57	8	6
Sanja (Zg 5996/66)	62	1	30	70	11	28	2	10
Likafen	75	25	90	80	94	99	23	22
Favorit	72	10	50	15	82	66	8	7
Bolal	77	15	55	60	85	99	41	16
Burgas 2	75	25	30	10	96	22	5	1
Blueboy II	85	25	90	70	80	94	41	28
Manella	80	5	60	70	50	96	7	17
Jubilar	67	5	50	80	35	92	6	11
Aurora	72	20	10	5	94	7	2	13
Demar 4	67	5	40	60	65	77	15	3
Kavkaz	67	20	20	0	72	10	3	1
NS732	55	1	30	0	12	41	38	2

a) Based on 2 replications only.
b) Based on 1 replication only.

Table 66. Reaction of International Winter Wheat Performance Nursery cultivars to Powdery mildew (Erysiphe graminis) in 1974. Concluded.

Cultivar	Warsaw, Poland Sev. %	Fundulea, Romania Sev. %	Svalof, Sweden Sev. %	Krasnodar,[a] U.S.S.R. Sev. %	Weihenstephan, West Germany Sev. %	Severity: Cultivar mean over 13 locations	Severity: High score
Clarion	17	55	12	10	1	40	96
Marimp 3	11	25	1	1	2	29	80
Dacia	16	47	11	3	3	38	89
Zlatna Dolina	8	37	13	5	1	18	60
Maris Nimrod	3	27	0	0	1	18	68
Zenith	1	45	7	4	1	22	55
Rousalka	16	42	8	4	1	27	75
Caribo	15	57	22	3	2	39	94
Diplomat	21	75	30	47	3	51	99
Kirac 66	32	65	30	32	3	52	99
Lancota (NE701132)	1	32	11	0	2	27	75
Carifen 12	33	62	47	15	3	45	84
Moldova	38	52	38	0	2	39	80
Atlas 66	3	32	3	0	1	24	60
Bezostaya 1	12	37	15	14	3	34	94
Lerma Rojo 64	18	52	27	8	4	49	91
Blueboy	41	67	46	21	4	52	95
Dwarf Bezostaya	12	47	7	14	3	35	85
Sanja (Zg 5996/66)	2	40	20	0	2	21	62
Likafen	55	75	55	13	5	55	99
Favorit	31	40	3	1	2	30	82
Bolal	38	50	7	0	3	42	99
Burgas 2	40	70	8	32	3	32	96
Blueboy II	38	70	17	47	4	53	94
Manella	12	57	12	1	2	36	95
Jubilar	15	65	11	3	2	34	92
Aurora	35	75	13	13	2	28	94
Desar 4	10	60	8	1	1	32	77
Kavkaz	12	62	4	6	3	22	72
NS732	10	42	0	0	1	18	55

a) Based on 2 replications only.

Table 67. Reaction of International Winter Wheat Performance Nursery cultivars to Septoria (*Septoria tritici*, *Septoria nodorum*) in 1974.

Cultivar	Balcarce, Argentina Sev. %	Orgerus,[a] France Sev. %	Rieti, Italy Sev. %	Warsaw, Poland Sev. %	Severity: Cultivar mean over 4 locations	Severity: High score
Clarion	56	0	0	4	15	56
Marimp 3	60	0	17	4	20	60
Dacia	52	80	11	4	37	80
Zlatna Dolina	50	0	17	4	18	50
Maris Nimrod	50	0	6	3	15	50
Zenith	27	0	0	4	8	27
Rousalka	57	90	7	4	40	90
Caribo	47	0	0	3	13	47
Diplomat	25	0	0	2	7	25
Kirac 66	37	0	2	6	11	37
Lancota (NE701132)	77	0	0	3	20	77
Carifen 12	57	0	2	7	17	57
Moldova	52	70	17	3	36	70
Atlas 66	35	0	0	2	9	35
Bezostaya 1	45	0	15	5	16	45
Lerma Rojo 64	80	0	0	6	22	80
Blueboy	75	0	0	5	20	80
Dwarf Bezostaya	70	90	20	7	47	90
Sanja (Zg 5996/66)	70	10	13	4	24	70
Likafen	70	0	0	6	19	70
Favorit	67	0	18	4	22	67
Bolal	37	0	10	5	13	37
Burgas 2	50	0	16	6	18	50
Blueboy II	60	0	12	5	19	60
Manella	35	0	0	4	10	35
Jubilar	22	0	3	3	7	22
Aurora	35	0	1	5	10	35
Demar 4	47	0	1	3	13	47
Kavkaz	47	0	8	3	15	47
MS732	77	99	16	5	49	99

a) One replication only.

Table 68. Reaction of Sixth International Winter Wheat Performance Nursery cultivars to yellow, leaf and stem rusts from the fourth RDISN grown in 1974.[a]

Cultivar	Rust: Yellow ACI	Rust: Yellow HS	Rust: Leaf ACI	Rust: Leaf HS	Rust: Stem ACI	Rust: Stem HS
Atlas 66	41.7	80 S	31.9	100 S	76.7	90 S
Aurora	1.3	5 S	0.0	0 0	0.0	5 S
Bezostaya	7.5	20 S	1.3	5 S	70.0	90 S
Blueboy	3.8	10 S	22.6	100 S	67.5	100 S
Blueboy II	3.8	10 S	20.2	70 S	18.5	80 S
Bolal	3.3	10 S	64.1	100 S	66.7	100 S
Burgas 2	3.3	10 S	12.6	50 S	3.3	10 S
Caribo	5.0	20 S	42.0	80 S	46.7	90 S
Carifen 12	3.3	10 S	47.7	100 S	90.0	100 S
Clarion	0.3	1 S	50.8	80 S	56.7	90 S
Dacia	1.3	5 S	4.7	20 MS	63.3	90 S
Demar 4	0.3	1 S	31.2	60 S	46.7	60 S
Diplomat	0.3	1 S	22.6	60 S	57.0	100 S
Dwarf Bezostaya	2.0	5 S	10.3	30 S	70.0	100 S
Favorit	4.2	20 S	24.5	80 S	66.7	100 S
Jubilar	2.0	5 S	50.0	60 S	45.0	90 S
Kavkaz	0.3	1 S	15.0	70 S	3.3	10 S
Kirac 66	10.0	30 S	72.8	100 S	67.5	100 S
Lancota (NE701132)	5.0	10 S	14.0	40 S	55.0	90 S
Lerma Rojo 64	22.4	60 S	17.4	80 S	48.5	90 S
Likafen	35.0	80 S	60.0	80 S	50.4	100 S
Manella	0.3	1 S	50.1	80 S	21.7	50 S
Marimp 3	4.3	20 S	38.0	90 S	61.3	100 S
Maris Nimrod	2.5	10 S	13.1	30 S	55.0	80 S
Moldova	1.3	5 S	8.0	20 S	67.5	90 S
NS732	7.0	30 S	8.2	40 S	50.0	80 S
Rousalka	3.4	10 S	0.1	1 MR	49.0	90 S
Sanja (Zg 5996/66)	18.4	60 S	16.1	60 S	50.4	100 S
Zenith	2.5	10 S	47.2	100 S	50.0	90 S
Zlatna Dolina	14.0	40 S	21.2	80 S	36.7	90 S

a) Data provided by Dr. E. E. Saari and Dr. F. P. Srivastava in association with the Arid Lands Agricultural Development Program. The RDISN is grown in many locations from Morocco to India.

The average coefficient of rust infection (ACI) has been calculated for the three rusts in the manner used in the International Rust Nursery (USDA).

Reaction type	Abbreviation	Response value
No disease	0	0.0
Resistant	R	0.2
Moderately resistant	MR	0.4
Intermediate	M or X	0.6
Moderately susceptible	MS	0.8
Susceptible	S	1.0

The severity of attack multiplied by the response value provides the coefficient of infection. For example, 20 MS is transformed as 20 (severity) x 0.8 (response value) = 16.0. An average coefficient of rust infection (ACI) for each cultivar is derived by calculating a mean value over all locations. The high disease score (HS) is the highest disease reading obtained for each entry among all locations.

ACI	Classes	General
0	No disease*	
0.1 - 2.0	Very resistant	
2.1 - 5.0	Resistant	Resistant
5.1 - 10.0	Moderately resistant	
10.1 - 15.0	Low intermediate	Intermediate
15.1 - 20.0	Intermediate	
20.1 - 30.0	High intermediate	
30.1 - 40.0	Moderately susceptible	
40.1 - 60.0	Susceptible	Susceptible
60+	Very susceptible	

*May represent immunity, escape or no disease development.

Table 69. Reaction of Sixth International Winter Wheat Performance Nursery cultivars to yellow, leaf and stem rusts in 1974 from artificial inoculations at Fundulea, Romania.[a]

Cultivar	Puccinia Striiformis Sev. %	Puccinia Striiformis Resp.	Puccinia Recondita Sev. %	Puccinia Recondita Resp.	Puccinia Graminis tritici Sev. %	Puccinia Graminis tritici Resp.
Clarion	5	M-R	5	R	100	S
Marimp 3	50	S-MS	50	MS-S	90	S
Dacia	15	MR	10	R	90	S
Zlatna Dolina	50	MR-MS	30	MR-MS	90	S
Maris Nimrod	0	0	60	S	100	S
Zenith	0	0	100	S	100	S
Rousalka	0	0	20	MR	80	MS-S
Caribo	0	0	100	S	100	S
Diplomat	0	0	100	S	100	S
Kirac 66	20	MS	100	S	100	S
Lancota (NE701132)	30	R-MR	10	R	60	MS
Carifen 12	0	0	100	S	100	S
Moldova	30	MR-MS	5	R	80	S
Atlas 66	40	S-MS	20	R	80	S
Bezostaya 1	40	MR-MS	100	S	80	S
Lerma Rojo 64	0	0	0[e]	0[e]	20	MR-MS
Blueboy	50	MS	100	S	100	S
Dwarf Bezostaya	5	R	70	S	100	S
Sanja (Zg 5996/66)	10	R	30	MS	100	S
Likafen	15	MS	80	MS	100	S
Favorit	40	MS	70	S	100	S
Bolal	50	MS-S	100	S	80	S
Burgas 2	0	0	100	S	40	MR
Blueboy II	30	MR	80	S	40	MR
Manella	0	0	90	S	100	S
Jubilar	30	MS-S	100	S	100	S
Aurora	5	R	100	S	60	MS
Demar 4	15	MS	100	S	100	S
Kavkaz	0	0	100	S	60	MR
NS732	0	0	10	R	100	S

a) Data provided by I.C.C.P.T., Fundulea, Romania from artificial disease inoculations.
e) Escape.

Table 70. Reaction of wheat cultivars grown in the Sixth International Winter Wheat Performance Nursery to stem rust and leaf rust at College Station, Texas, in 1974.[a]

Cultivar	Rust			
	Stem		Leaf	
	Sev. %	Resp.	Sev. %	Resp.
Clarion	0		30	S
Marimp 3	0		70	S
Dacia	T	S	10-50	MS-S
Golden Valley	0		40	MS
Maris Nimrod	0		70	S
Zenith	0		70	S
Rousalka	0		20	MR
Caribo	0		40	S
Diplomat	0		70	S
Kirac 66	0		80	S
Lancota (NE701132)	0		20	MR
Carifen 12	T	S	70	S
Moldova	T	S	50	S
Atlas 66	0		40	S
Bezostaya 1	T	S	20	S
Lerma Rojo 64	0	E	70	S
Blueboy	5	S	80	S
Dwarf Bezostaya	5	S	20	MS
Sanja (Zg 5996/66)	0		30	S
Likafen	0		70	S
Favorit	T-5	S	60	S
Bolal	0		70	S
Burgas 2	0		70	S
Blueboy II	T	S	T	R
Manella	T	S	70	S
Jubilar	T	S	60	S
Aurora	T	S	50	MS
Demar 4	5	S	60	S
Kavkaz	0		10	MR
NS732	T		30	MS

a) Data provided by Owen G. Merkle of the USDA, ARS of Texas A & M University, College Station, Texas.

Table 71. Reaction of cultivars grown in the Sixth IWWPN to stripe rust in an observation nursery near Wageningen, Netherlands in 1974.[a]

Entry number	Cultivar	Stripe rust	
		Sev. %	Resp.
1	Clarion	0	0
2	Marimp 3	30	MS
3	Dacia	0	0
4	Golden Valley	10	MS
5	Maris Nimrod	0	0
6	Zenith	0	0
7	Rousalka	0	0
8	Caribo	5	VS
9	Diplomat	0	0
10	Kirac 66	2	MS
11	Lancota (NE701132)	0	0
12	Carifen 12	10	MS
13	Moldova	0	0
14	Atlas 66	15	VS
15	Bezostaya 1	2	M
16	Lerma Rojo 64	5	M
17	Blueboy	5	MS
18	Dwarf Bezostaya	2	M
19	Sanja (Zg 5996/66)	5	MS
20	Likafen	0	0
21	Favorit	20	MS
22	Bolal	25	MS
23	Burgas 2	1	LM
24	Blueboy II	2	LM
25	Manella	0	0
26	Jubilar	0	0
27	Aurora	0	0
28	Demar 4	2	HM
29	Kavkaz	0	0
30	NS732	1	HM

a) Data provided by Ir. J. Mesdag from a July 2 reading.

Table 72. Reaction of Sixth International Winter Wheat Performance Nursery cultivars grown in Indiana to leaf and stem rusts and Septoria in 1974.[a]

Cultivar	Rust				Septoria 1-9
	Leaf		Stem		
	Sev. %	Resp.	Sev. %	Resp.	
Clarion	90	S	10	S	3
Marimp 3	90	S	5	S	3
Dacia	90	S	80	S	5
Zlatna Dolina	45	S	18	S	5
Maris Nimrod	80	S	18	S	4
Zenith	90	S	13	S	4
Rousalka	80	S	8	S	5
Caribo	80	S	8	S	5
Diplomat	90	S	8	S	5
Kirac 66	85	S	8	S	6
Lancota (NE701132)	5	R	8	S	4
Carifen 12	85	S	18	S	5
Moldova	95	VS	80	VS	6
Atlas 66	8	R	8	S	3
Bezostaya 1	99	VS	80	VS	5
Lerma Rojo 64	13	MR	0	-	4
Blueboy	99	VS	99	VS	5
Dwarf Bezostaya	85	VS	80	VS	5
Sanja (Zg 5996/66)	80	VS	23	S	6
Likafen	99	VS	1	MR	7
Favorit	85	VS	50	VS	7
Bolal	85	VS	20	S	8
Burgas 2	30	VS	0	-	7
Blueboy II	20	MR	75	S	5
Manella	95	VS	25	S	6
Jubilar	90	VS	50	VS	7
Aurora	25	MR	10	S	6
Demar 4	95	VS	60	S	6
Kavkaz	28	MR	1	S	5
MS732	95	VS	95	VS	7

a) Data provided by Dr. Aristeo Acosta from Brookston, Indiana, U.S.A.

Table 73. Quality data for cultivars grown in the Fifth International Winter Wheat Performance Nursery in 1973 at Svalof, Sweden.[a]

Cultivar	Protein in dry matter: Wheat %	Protein in dry matter: Flour %	Gluten content %	Falling number sec	Ash in dry matter %	Flour extraction %	Dough g/100g flour	Baking: Weight[1] g	Baking: Volume[1] ml	Baking: Form[2]	Baking: Porosity[3] according to Dallman	Baking: Elasticity of crumb[4]	Baking: General appearance[5]	Fermentation time
Strampelli	12.2	10.0	20.5	283	0.40	49	158	134	751	5	7	5	1	60
									771		7			70
									806		7			80
Probstdorfer Extrem	13.7	12.0	31.6	315	0.43	67	162	134	778	5	6	5	1	60
									794		6			70
									870		6			80
Victor I	12.8	10.1	23.6	306	0.35	46	160	136	576	4	7	5	2	60
									637		7			70
									656		7			80
Carifen 12	11.5	9.8	21.2	228	0.39	62	162	138	609	4	6	5	2	60
									677		6			70
									732		6			80
Caribo	12.0	9.6	23.0	302	0.40	51	158	134	632	4	6	5	2	60
									648		6			70
									686		6			80
C.I.15074	14.6	12.7	30.9	467	0.45	62	162	131	826	6	6	5	1	60
									875		6			70
									923		6			80
Zlatna Dolina (Golden Valley)	11.8	9.5	20.1	258	0.32	46	158	139	569	4	6	5	2	60
									548		6			70
									695		6			80
Hokuei	12.1	10.0	23.9	400	0.37	52	159	142	604	4	6	5	2	60
									620		6			70
									731		6			80
Atlas 66	15.4	13.8	39.8	412	0.35	44	161	142	713	5	6	5	1	60
									781		6			70
									869		5			80
Diplomat	13.2	11.4	25.8	335	0.34	52	159	135	636	4	6	5	2	60
									660		6			70
									696		6			80
Blueboy	11.5	9.4	22.8	303	0.41	52	157	133	672	4	6	5	2	60
									761		6			70
									798		6			80
Maris Nimrod	12.0	9.7	25.4	163	0.41	51	159	132	636	4	5	5	3	60
									712		5			70
									684		5			80
Marimp 3	13.4	10.9	25.9	270	0.39	50	158	134	664	4	5	5	3	60
									711		4			70
									708		4			80
Jyva	13.9	12.9	33.5	383	0.62	64	165	135	875	5	7	5	1	60
									853		6			70
									957		6			80

Table 73. Quality data for cultivars grown in the Fifth International Winter Wheat Performance Nursery in 1973 at Svalof, Sweden.[a] Continued.

Cultivar	Protein in dry matter: Wheat %	Protein in dry matter: Flour %	Gluten content %	Falling number sec	Ash in dry matter %	Flour extraction %	Dough g/100g flour	Baking: Weight[1] g	Baking: Volume[1] ml	Baking: Form[2]	Baking: Porosity[3] according to Dallman	Baking: Elasticity of crumb[4]	Baking: General appearance[5]	Fermentation time
Sava	12.6	10.5	25.1	272	0.36	48	159	134	674	4	7	5	2	60
									714		7			70
									763		7			80
Lancota (NE701132)	15.2	13.4	36.2	379	0.38	68	164	131	823	5	6	5	1	60
									853		6			70
									959		5			80
Bezostaya 1	12.7	11.2	28.5	336	0.42	70	164	139	672	4	6	5	2	60
									754		6			70
									759		5			80
Lilifen	13.0	10.7	25.0	245	0.38	56	160	142	640	4	6	5	2	60
									685		6			70
									714		5			80
Vakka	13.5	12.1	30.6	341	0.56	65	165	142	787	5	7	5	1	60
									904		7			70
									858		7			80
Zenith	13.4	11.9	29.0	250	0.40	67	161	140	708	5	5	5	1	60
									781		5			70
									797		5			80
Clarion	12.1	10.0	25.4	250	0.36	51	160	134	573	4	5	5	3	60
									598		5			70
									624		5			80
Lerma Rojo 64	13.9	11.8	31.0	265	0.31	43	158	136	660	5	7	5	1	60
									711		7			70
									758		6			80
Centurk	12.8	10.8	26.1	337	0.42	61	162	131	664	5	6	5	1	60
									664		6			70
									713		6			80
Backa	13.2	10.4	25.0	301	0.40	46	160	136	528	3	6	5	3	60
									621		6			70
									624		5			80
Rousalka	13.2	10.8	25.4	348	0.39	49	166	139	639	4	5	5	3	60
									714		5			70
									805		5			80
Moldova	14.2	11.7	27.8	289	0.40	47	160	133	816	5	7	5	2	60
									854		7			70
									880		6			80
Tam 102	13.7	11.8	27.2	343	0.46	61	161	134	805	5	6	5	1	60
									869		5			70
									924		5			80
Dacia	14.4	13.2	32.0	271	0.39	51	160	134	768	5	5	5	1	60
									832		5			70
									880		5			80

Table 73. Quality data for cultivars grown in the Fifth International Winter Wheat Performance Nursery in 1973 at Svalof, Sweden.[a] Concluded.

Cultivar	Protein in dry matter: Wheat %	Protein in dry matter: Flour %	Gluten content %	Falling number sec	Ash in dry matter %	Flour extraction %	Dough g/100g flour	Baking: weight[1] g	Baking: Volume[1] ml	Baking: Form[2]	Baking: Porosity[3] according to Dallman	Baking: Elasticity of crumb[4]	Baking: General appearance[5]	Fermentation time
Starke	14.1	11.9	36.0	323	0.36	67	161	138	786	5	5	5	1	60
									765		5			70
									913		5			80
Kirac 66	13.6	11.4	31.5	208	0.37	51	159	132	696	5	6	5	1	60
									855		6			70
									827		5			80

a) Data provided by Dr. Gosta Olsson.

1) Calculated on 100 g flour.

2) Scale = 1-7; 7 is the best value.

3) Scale = 1-8; 8 is the best value.

4) Very good = 6
Normal = 4
Below normal = 2
Very bad = 1

5) Excellent = 1
Tendency to crust damages = 2
Evident crust damages = 3
Strong crust damages = 4

Table 74. Quality data for cultivars grown in the Sixth International Winter Wheat Performance Nursery in 1974 at Svalof, Sweden.[a]

Cultivar	Protein in dry matter: Wheat %	Protein in dry matter: Flour %	Gluten content %	Falling number sec	Pearling resistance gms	Flour yield %	Flour test weight	Dough g/100g flour	Baking: Weight[1] g	Baking: Volume[1] ml	Baking: Form[2] 1-7	Baking: Porosity[3] 1-8	General remarks
Clarion	12.9	10.9	30.5	305	5.73	58	407	160	133	648	4	5	Sticky dough.
Marimp 3	15.7	12.9	36.5	216	6.18	41	369	163	135	570	3	5	Very sticky, grey dough.
Dacia	18.4	16.7	42.0	278	5.61	51	383	163	135	888	5	5	
Zlatna Dolina	14.5	12.4	29.5	251	6.20	47	386	165	142	607	3	6	Grey dough.
Maris Nimrod	12.5	10.2	29.2	218	5.41	57	390	161	140	570	3	6	Sticky dough
Zenith	15.1	13.8	37.3	372	6.78	69	447	163	139	897	5	4	
Rousalka	17.4	13.9	40.0	178	5.95	49	393	171	142	616	2	4	Very sticky grey dough.
Caribo	12.3	10.1	20.6	288	5.70	50	381	161	137	612	3	6	
Diplomat	13.6	11.6	29.1	337	5.73	59	395	161	137	757	4	6	
Kirac 66	16.2	14.1	40.5	139	6.48	54	370	163	135	978	6	5	
Lancota (NE701132)	18.5	17.2	49.3	250	6.69	63	412	169	140	1149	6	5	
Carifen	13.1	11.5	27.2	312	6.73	62	430	167	142	762	4	6	
Moldova	18.3	14.6	43.9	180	6.04	45	377	168	139	588	2	4	Very sticky, grey dough.
Atlas 66	17.7	17.0	54.3	325	6.37	43	347	166	143	959	6	6	
Bezostaya 1	15.2	13.6	36.1	112	6.35	65	435	166	141	913	5	5	
Lerma Rojo 64	18.1	16.6	51.0	271	5.73	49	357	166	139	634	2	4	Very sticky, grey dough.
Blueboy	14.5	11.6	34.8	327	5.55	56	380	164	136	777	4	6	
Dwarf Bezostaya	13.4	12.3	30.8	156	6.75	61	451	166	136	710	3	5	
Sanja (Zg 5996/66)	15.3	12.4	34.0	260	6.16	42	380	165	144	611	2	4	Sticky, grey dough.
Likafen	15.6	13.7	34.3	322	6.76	64	441	167	142	1002	5	6	
Favorit	18.8	16.7	41.2	372	5.79	63	433	169	140	980	5	5	
Bolal	15.4	13.9	33.2	357	6.92	69	453	168	143	974	6	6	
Burgas 2	16.2	14.6	44.3	150	6.59	61	435	167					Liquid dough, impossible for baking.
Blueboy II	16.1	13.5	38.5	314	5.90	55	369	164	139	853	5	5	
Manella	13.2	11.1	31.2	306	5.52	58	367	163	139	766	4	4	
Jubilar	13.6	11.2	28.8	309	5.74	55	372	160	128	736	4	6	
Aurora	16.5	14.8	40.8	65	6.14	61	41[illegible]	167					Liquid dough, impossible for baking.
Demar 4	14.3	11.5	30.8	218	5.68	51	375	162	138	648	3	6	
Kavkaz	16.4	14.5	37.5	109	6.17	60	415	168					Liquid dough, impossible for baking.
NS732	15.5	12.8	37.0	99	5.78	53	400	167					Liquid dough, impossible for baking.

a) Data provided by Dr. Gosta Olsson.
1) Calculated on 100 g flour.
2) Form: Scale 1-7, 7 is the best value.
3) Porosity according to Dallmann: Scale 1-8, 8 is the best value.

Table 75. Agronomic, grain quality, and disease data for the 30 cultivars in the Sixth International Winter Wheat Performance Nursery grown at Pullman, Washington, U.S.A., 1974.[b]

Cultivar	Yield q/ha	Test weight kg/hl	Protein %	Plant height[a] cm
Maris Nimrod	45.5	56.3	12.7	82
Blueboy II	41.7	58.7	13.3	84
Burgas 2	40.3	61.3	14.1	78
Caribo	39.1	56.0	12.3	88
Clarion	38.0	57.8	13.3	70
Manella	37.8	57.5	12.3	83
Aurora	35.9	61.9	14.6	81
Kavkaz	35.4	61.8	14.4	92
Lancota (NE701132)	35.1	61.5	15.0	86
Jubilar	35.0	57.9	12.6	93
Blueboy	34.0	57.9	12.3	83
Zenith	33.4	59.4	13.4	85
Diplomat	33.3	60.1	13.6	90
Bolal	33.1	60.4	11.5	93
Dacia	33.0	60.4	15.3	79
Dwarf Bezostaya	33.0	60.4	12.1	63
Favorit	32.4	60.8	14.0	81
Bezostaya 1	32.0	61.9	13.2	85
Likafen	31.6	62.0	13.3	82
Carifen 12	30.6	52.0	12.6	59
Moldova	30.4	60.5	15.7	81
Demar 4	28.5	59.5	13.2	82
Zlatna Dolina	28.3	57.8	13.1	58
Kirac 66	26.8	62.0	13.5	90
Atlas 66	25.8	60.1	16.3	94
Sanja (Zg 5996/66)	25.8	59.0	13.1	61
Rousalka	23.4	61.4	14.3	67
Marimp 3	23.0	60.3	14.3	75
Lerma Rojo 64	15.2	60.4	14.4	61
NS732	15.0	57.6	12.5	53
Mean	31.4	59.5	13.5	78.4
L.S.D. of cultivar means (.05)	11.2	1.2	0.8	12.7
Coefficient of variation (%)	25.4	1.4	4.0	7.9
Local cultivars				
Nugaines	36.6	59.8	10.9	70
Cerco	41.4	56.7	12.1	71

a) Two replications only.
b) Applied 134 kg/ha of nitrogen fertilizer.

Table 76. Three-year means and rankings for grain yield (q/ha) for 16 cultivars grown in the International Winter Wheat Performance Nursery, 1972, 1973 and 1974. Continued1

Cultivar	Karaj, Iran		Sulaimaniya, Iraq		Rieti, Italy		Morioka Iwate, Japan		Suwon, Korea		Toluca, Mexico		Wageningen, Netherlands		Fundulea, Romania	
	q/ha	rank	q/ha	rank	q/ha	rank	q/ha	rank	q/ha	rank	q/ha	rank	q/ha	rank	q/ha	rank
Zlatna Dolina	33.8	7	29.3	4	50.5	3	28.9	10	53.7	1	34.7	7	52.8	4	44.6	3
Bezostaya 1	36.8	4	30.2	2	50.2	4	33.4	3	52.3	2	30.5	11	47.1	8	41.9	7
Blueboy	38.8	2	31.6	1	40.5	10	33.9	2	47.6	7	37.8	4	46.4	9	43.7	4
Dacia	35.8	6	27.2	6	49.0	5	33.0	5	51.2	4	40.1	3	43.5	12	46.7	1
Maris Nimrod	25.9	13	22.0	12	42.0	8	26.1	12	37.8	11	43.2	2	59.2	1	42.0	6
Rousalka	32.8	10	29.1	5	53.4	1	29.5	9	52.0	3	48.0	1	44.2	10	42.5	5
Caribo	25.7	14	23.3	10	33.1	14	29.9	8	40.3	10	37.1	5	53.3	3	35.5	12
Lancota (NE701132)	37.5	3	24.3	9	43.8	7	27.0	11	43.3	9	24.5	13	33.1	15	46.5	2
Moldova	36.4	5	24.8	8	44.4	6	32.3	6	48.3	5	34.0	8	35.6	13	41.7	8
Zenith	26.3	12	23.1	11	29.7	16	33.1	4	34.8	13	35.6	6	49.7	6	36.9	10
Clarion	23.0	15	21.6	13	34.8	12	35.4	1	33.1	14	27.0	12	53.7	2	40.3	9
Marimp 3	33.7	9	29.5	3	53.1	2	24.4	13	47.8	6	30.8	10	48.1	7	28.9	16
Carifen 12	27.5	11	20.3	16	39.8	11	17.4	15	32.3	15	31.5	9	50.3	5	30.8	15
Atlas 66	33.7	8	20.5	14	40.6	9	22.5	14	43.5	8	22.5	14	35.1	14	33.6	14
Diplomat	20.6	16	20.4	15	34.1	13	32.0	7	28.0	16	20.9	15	44.0	11	36.1	11
Kirac 66	39.3	1	26.8	7	30.6	15	14.2	16	35.6	12	18.4	16	28.5	16	34.9	13
Mean	31.7		25.3		41.8		28.3		42.6		32.3		45.3		39.2	
L.S.D. of cultivar means (.05)	10.2		6.4		6.8		15.6		11.6		11.1		7.6		12.8	
Coefficient of variation (%)	22.9		15.0		11.9		14.8		12.8		24.6		8.5		7.1	

Table 76. Three-year means and rankings for grain yield (q/ha) for 16 cultivars grown in the International Winter Wheat Performance Nursery. 1972, 1973 and 1974. Continued.

Cultivar	Svalof, Sweden		Zurich, Switzerland		Ankara, Turkey		Eskisehir,[a] Turkey		Fort Collins, Colorado U.S.A.		Lincoln, Nebraska U.S.A.		Ithaca, New York U.S.A.		Rowan County, North Carolina 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
Zlatna Dolina	59.8	8	42.0	10	17.6	8	26.2	13	65.4	9	13.8	8	29.1	8	19.6	7
Bezostaya 1	61.2	7	49.3	3	24.5	1	32.7	3	62.4	10	29.9	2	32.3	6	26.4	2
Blueboy	62.5	6	41.3	12	22.0	4	35.0	1	70.6	3	23.8	3	37.9	1	22.6	4
Dacia	54.5	10	48.4	4	19.7	6	28.8	8	66.2	8	22.1	4	33.2	5	34.0	1
Maris Nimrod	80.2	1	62.1	1	16.1	12	30.8	4	66.4	7	7.2	13	35.3	4	21.3	6
Rousalka	41.3	16	40.9	13	19.2	7	28.8	9	70.3	4	15.7	7	24.4	14	15.8	14
Caribo	79.5	2	55.6	2	16.9	10	30.5	5	67.8	6	11.8	10	36.8	2	22.3	5
Lancota (NE701132)	45.8	15	32.3	14	[illegible]	3	28.2	10	72.4	1	39.7	1	25.4	13	24.1	3
Moldova	49.1	13	43.0	8	21.2	5	28.0	12	61.7	11	21.4	5	26.8	11	18.0	11
Zenith	65.3	5	45.4	6	14.7	15	28.1	11	71.2	2	12.1	9	36.6	3	18.5	10
Clarion	77.3	3	45.6	5	16.7	11	30.5	6	68.4	5	9.5	11	26.4	12	19.5	8
Marimp 3	51.0	11	[illegible]	7	13.7	16	24.1	16	58.2	14	4.1	16	28.4	10	8.2	16
Carifen 12	56.2	9	32.3	15	15.2	14	30.4	7	61.2	12	6.1	15	20.2	15	15.9	13
Atlas 66	50.8	12	41.8	11	17.1	9	25.7	14	54.5	16	7.8	12	30.1	7	18.8	9
Diplomat	71.1	4	42.4	9	16.0	13	25.5	15	54.8	15	7.2	14	28.7	9	16.1	12
Kirac 66	46.1	14	23.1	16	24.2	2	33.1	2	58.7	13	15.8	6	19.2	16	12.7	15
Mean	59.5		43.1		18.6		29.1		64.4		15.5		29.4		19.6	
L.S.D. of cultivar means (.05)	14.4		10.1		7.8		5.4		16.4		10.4		4.7		7.0	
Coefficient of variation (%)	9.3		11.3		19.9		9.7		10.0		24.6		13.6		15.6	

a) Three replications only.

Table 76. Three-year means and rankings for grain yield (q/ha) for 16 cultivars grown in the International Winter Wheat Performance Nursery, 1972, 1973 and 1974.

Cultivar	Bordenave, Argentina		Vienna,[a] Austria		Tolbukhin, Bulgaria		Martonvasar, Hungary		Szeged, Hungary		Simla, India		Hamadan, Iran	
	q/ha	rank	q/ha	rank	q/ha	rank	q/ha	rank	q/ha	rank	q/ha	rank	q/ha	rank
Zlatna Dolina	28.4	4	55.8	2	52.4	2	65.6	3	59.6	1	16.2	5	26.3	13
Bezostaya 1	24.6	9	46.6	10	46.1	5	67.8	1	51.7	8	13.6	6	30.6	3
Blueboy	35.7	1	50.4	6	39.2	9	61.4	6	55.5	4	16.7	3	34.0	1
Dacia	32.3	2	51.4	3	46.7	3	64.5	4	55.1	6	13.5	7	27.7	11
Maris Nimrod	15.9	15	56.3	1	38.6	10	58.4	9	55.2	5	7.8	11	32.3	2
Rousalka	26.0	7	43.6	12	53.2	1	61.5	5	56.6	2	17.0	2	23.8	15
Caribo	17.9	13	46.9	9	37.6	12	55.9	12	49.8	9	7.1	14	30.3	5
Lancota (NE70,'32)	26.5	6	43.3	14	41.8	7	65.9	2	52.3	7	11.8	10	28.4	9
Moldova	20.9	11	43.9	11	46.3	4	56.5	11	49.0	10	16.4	4	27.2	12
Zenith	21.4	10	51.4	4	40.1	8	60.3	8	47.4	13	7.6	13	29.6	8
Clarion	16.5	14	47.2	8	37.4	13	50.7	13	55.9	3	5.0	15	30.3	7
Marimp 3	28.1	5	43.4	13	44.8	6	45.0	16	46.9	14	18.8	1	26.1	14
Carifen 12	28.7	3	50.6	5	34.1	14	61.3	7	47.9	12	7.8	12	30.3	6
Atlas 66	20.3	12	48.2	7	38.5	11	57.7	10	46.9	15	13.4	8	23.1	16
Diplomat	13.8	16	43.2	15	31.1	16	48.4	15	48.3	11	4.5	16	27.9	10
Kirac 66	25.7	8	34.8	16	32.0	15	49.4	14	39.3	16	13.0	9	30.4	4
Mean	23.9		47.3		41.2		58.1		51.1		11.9		28.6	
L.S.D. of cultivar means (.05)	13.2		9.9		9.3		9.2		9.2		4.1		6.8	
Coefficient of variation (%)	19.6		9.4		13.1		8.4		13.8		28.2		15.6	

a) Three replications only.

Table 76. Three-year means and rankings for grain yield (q/ha) for 16 cultivars grown in the International Winter Wheat Performance Nursery, 1972, 1973 and 1974. Concluded.

Cultivar	Stillwater, Oklahoma U.S.A.		Pullman, Washington U.S.A.		Krasnodar, U.S.S.R.		Monsheim, West Germany		Weihenstephan, West Germany		Novi Sad, Yugoslavia		Zagreb, Yugoslavia		Cultivar mean over 30 locations
	q/ha	rank	q/ha	rank	q/ha	rank	q/ha	rank	q/ha	rank	q/ha	rank	q/ha	rank	q/ha
Zlatna Dolina	22.1	6	35.1	11	53.2	1	43.8	3	75.3	5	58.1	1	54.5	1	41.6
Bezostaya 1	29.7	1	36.1	10	42.6	7	44.0	2	72.2	6	44.5	3	44.5	3	41.2
Blueboy	28.5	2	44.7	4	43.0	6	42.8	4	69.6	10	43.8	5	28.7	15	41.0
Dacia	27.1	4	33.3	13	45.8	4	40.4	6	70.2	9	40.1	10	41.4	5	40.8
Maris Nimrod	15.6	15	49.7	2	33.3	10	51.8	1	88.3	1	40.0	11	36.7	7	39.9
Rousalka	26.5	5	40.3	5	51.4	2	39.7	7	63.9	13	50.1	2	46.9	2	39.7
Caribo	19.2	9	46.9	3	31.6	12	39.3	9	84.4	2	40.4	9	29.9	12	37.9
Lancota (NE701132)	28.4	3	39.3	6	41.1	8	33.8	14	55.2	15	39.3	12	32.9	10	37.0
Moldova	19.0	10	29.7	16	43.9	5	37.2	11	68.0	11	40.6	8	41.2	6	36.9
Zenith	20.9	8	38.7	8	35.4	9	41.5	5	83.7	3	38.2	13	29.2	13	36.9
Clarion	21.7	7	49.7	1	29.6	15	36.6	13	77.2	4	35.4	14	29.0	14	36.2
Marimp 3	18.9	11	29.9	15	45.9	3	38.2	10	72.2	7	42.5	6	43.3	4	35.8
Carifen 12	18.0	12	38.8	7	31.1	13	39.7	8	64.2	12	43.9	4	34.2	8	33.9
Atlas 66	16.3	14	31.6	14	32.1	11	36.9	12	63.8	14	42.1	7	30.5	11	33.3
Diplomat	12.4	16	38.3	9	30.1	14	30.9	15	70.6	8	33.1	15	33.8	9	32.1
Kirac 66	17.5	13	34.0	12	28.9	16	30.7	16	43.8	16	30.1	16	22.1	16	29.7
Mean	21.4		38.5		38.7		39.2		70.2		41.4		36.2		37.1
L.S.D. of cultivar means (.05)	10.6		9.4		7.4		6.4		10.2		11.2		8.5		3.5
Coefficient of variation (%)	14.6		17.5		11.4		7.8		8.2		10.6		11.8		13.2

Table 77. Three-year means and rankings for grain protein (%) for 16 cultivars grown in the International Winter Wheat Performance Nursery, 1972, 1973 and 1974.

Cultivar	Bordenave, Argentina		Vienna,[a] Austria		Martonvasar, Hungary		Hamadan, Iran		Karaj, Iraq		Sulaimaniya, Iraq	
	q/ha	rank	q/ha	rank	q/ha	rank	q/ha	rank	q/ha	rank	q/ha	rank
Atlas 66	19.1	1	18.0	1	17.1	1	15.8	1	13.9	1	16.2	1
Lancota (NE701132)	16.6	10	17.4	2	16.2	2	14.4	7	13.4	2	14.4	6
Moldova	17.6	5	16.4	3	15.2	4	14.2	9	12.1	6	14.2	8
Dacia	16.7	8	16.1	4	15.1	5	15.1	3	11.6	8	14.4	5
Kirac 66	17.3	7	15.5	5	13.8	10	15.0	4	12.5	4	14.2	9
Rousalka	16.1	12	15.4	6	14.4	7	14.8	5	11.3	9	12.8	15
Marimp 3	16.2	11	13.8	9	15.3	3	14.7	6	12.6	3	12.8	14
Zenith	17.7	4	13.6	11	14.2	8	13.7	10	11.3	10	15.3	3
Diplomat	18.1	3	13.8	10	14.0	9	15.1	2	12.1	5	15.8	2
Clarion	18.0	2	13.6	12	14.6	6	13.4	12	10.5	14	14.8	4
Bezostaya 1	16.0	13	14.7	7	13.5	11	13.2	13	10.9	11	12.8	13
Zlatna Dolina	14.9	15	14.2	8	13.1	15	14.3	8	11.8	7	13.1	12
Caribo	17.5	6	12.8	15	13.5	12	13.6	11	10.3	15	14.4	7
Carifen 12	15.9	14	13.0	14	13.2	14	13.0	14	9.8	16	13.7	11
Maris Nimrod	16.6	9	13.4	13	13.3	13	12.1	16	10.7	12	14.0	10
Blueboy	14.7	16	12.6	16	12.3	16	12.9	15	10.7	13	11.6	16
Mean	16.8		14.6		14.3		14.1		11.6		14.0	
L.S.D. of cultivar means (.05)	2.4		1.8		1.2		1.5		1.4		1.7	
Coefficient of variation (%)	5.4		3.5		1.3		9.9		11.2		5.5	

a) Three replications only.

Table 77. Three-year means and rankings for grain protein (%) for 16 cultivars grown in the International Winter Wheat Performance Nursery, 1972, 1973 and 1974. Continued.

Cultivar	Rieti, Italy		Suwon, Korea		Wageningen, Netherlands		Svalof, Sweden		Zurich, Switzerland		Eskisehir, Turkey	
	q/ha	rank	q/ha	rank	q/ha	rank	q/ha	rank	q/ha	rank	q/ha	rank
Atlas 66	14.3	1	15.4	1	14.3	1	16.0	4	16.6	1	14.2	1
Lancota (NE701132)	12.6	4	14.3	3	13.6	2	16.5	1	15.9	2	13.0	3
Moldova	12.9	2	13.8	5	13.6	3	16.3	3	15.8	3	12.7	6
Dacia	11.5	7	14.4	2	12.0	7	16.4	2	15.4	4	12.6	8
Kirac 66	12.3	5	14.2	4	13.4	4	15.0	7	15.3	5	12.6	7
Rousalka	12.7	3	12.6	12	13.0	5	15.9	5	14.9	7	12.9	4
Marimp 3	11.8	6	13.0	10	12.1	6	15.0	6	14.9	8	12.8	5
Zenith	10.9	11	13.5	6	12.0	8	13.4	11	15.0	6	12.6	9
Diplomat	10.9	12	13.3	9	11.9	9	12.9	12	13.9	12	13.1	2
Clarion	11.2	10	13.4	7	10.8	13	12.7	13	14.3	10	11.8	12
Bezostaya 1	11.4	9	13.4	7	11.7	10	13.4	10	14.6	9	11.3	15
Zlatna Dolina	11.4	8	12.1	13	11.0	11	13.5	8	12.9	16	12.5	10
Caribo	10.1	13	12.0	14	10.7	14	11.7	16	12.9	15	11.8	13
Carifen 12	9.7	15	12.7	11	11.0	12	13.5	9	13.9	11	11.4	14
Maris Nimrod	9.9	14	11.9	15	10.6	15	12.3	15	13.4	13	11.9	11
Blueboy	9.3	16	10.8	16	10.5	16	12.5	14	13.0	14	10.9	16
Mean	11.4		13.2		12.0		14.2		14.5		12.4	
L.S.D. of cultivar means (.05)	0.7		1.6		1.4		1.8		1.0		1.0	
Coefficient of variation (%)	5.7		8.5		6.0		3.2		3.6		3.9	

Table 77. Three-year means and rankings for grain protein (%) for 16 cultivars grown in the International Winter Wheat Performance Nursery, 1972, 1973 and 1974. Concluded.

Cultivar	Fort Collins, Colorado U.S.A.		Pullman, Washington U.S.A.		Krasnodar, U.S.S.R.		Weihenstephan, West Germany		Novi Sad, Yugoslavia		Zagreb, Yugoslavia		Cultivar mean over 18 locations
	q/ha	rank	q/ha	rank	q/ha	rank	q/ha	rank	q/ha	rank	q/ha	rank	q/ha
Atlas 66	17.9	1	16.4	1	19.0	1	15.2	1	18.1	1	15.9	1	16.3
Lancota (NE701132)	16.4	3	16.0	4	17.8	2	15.0	2	16.8	2	13.9	5	15.2
Moldova	16.7	2	16.4	2	17.8	3	13.8	4	16.3	4	14.4	3	15.0
Dacia	16.1	4	16.1	3	17.4	5	13.3	7	16.2	5	13.5	6	14.7
Kirac 66	15.8	6	15.0	9	16.7	7	14.2	3	15.6	6	14.4	4	14.6
Rousalka	15.1	7	15.4	5	15.9	12	13.7	5	14.6	9	14.4	2	14.2
Marimp 3	16.0	5	15.3	6	16.4	9	13.6	6	14.9	12	12.9	10	14.1
Zenith	14.1	11	14.9	10	17.0	6	12.4	10	16.3	3	13.3	9	14.0
Diplomat	14.5	9	15.2	7	16.4	10	12.2	11	14.8	11	13.3	8	14.0
Clarion	15.0	8	14.3	11	17.5	4	12.2	12	15.5	7	13.5	7	13.7
Bezostaya 1	14.2	10	15.1	8	15.6	14	12.4	9	15.0	13	12.9	11	13.5
Zlatna Dolina	14.0	12	13.9	14	14.6	15	12.0	14	13.4	14	12.5	13	13.1
Caribo	13.9	14	14.1	12	16.5	8	11.3	15	14.8	10	12.3	15	13.0
Carifen 12	13.9	13	14.0	13	15.6	13	12.5	8	14.0	16	12.6	12	13.0
Maris Nimrod	13.2	16	13.8	15	16.2	11	11.2	16	14.5	8	12.4	14	12.9
Blueboy	13.4	15	13.5	16	14.4	16	11.4	13	13.8	15	11.4	16	12.2
Mean	15.0		15.0		16.6		12.9		15.3		13.3		14.0
L.S.D. of cultivar means (.05)	1.2		1.3		1.7		1.0		1.0		1.5		0.5
Coefficient of variation (%)	2.5		7.2		2.1		4.2		2.7		6.3		5.6

Table 78. Three-year means and rankings of test weight (kg/hl) for 16 cultivars grown in the International Winter Wheat Performance Nursery, 1972, 1973 and 1974.

Cultivar	Tolbukhin, Bulgaria		Szeged, Hungary		Rieti, Italy		Suwon, Korea		Wageningen, Netherlands		Svalof, Sweden	
	kg/hl	rank	kg/hl	rank	kg/hl	rank	kg/hl	rank	kg/hl	rank	kg/hl	rank
Bezostaya 1	79.7	1	80.0	1	81.4	1	78.1	1	81.5	1	81.3	2
Lancota (NE701132)	78.0	3	79.4	2	80.6	2	75.5	7	80.3	4	79.0	5
Diplomat	75.8	9	78.9	3	76.8	10	71.4	9	80.2	5	81.3	1
Atlas 66	77.1	6	78.3	5	79.5	4	74.4	8	80.9	3	79.8	4
Dacia	76.8	7	78.4	4	79.0	6	75.9	5	80.0	6	77.5	10
Rousalka	78.3	2	77.8	7	79.7	3	76.6	4	79.9	7	76.8	14
Marimp 3	77.8	4	76.8	10	78.0	8	76.8	3	77.5	11	77.5	9
Moldova	76.6	8	77.3	8	79.3	5	77.8	2	78.0	10	77.3	12
Zlatna Dolina	77.7	5	76.4	11	77.6	9	75.8	6	78.5	8	77.9	7
Zenith	75.0	11	77.2	9	71.1	12	71.1	10	81.5	2	80.2	3
Kirac 66	75.5	10	77.9	6	78.1	7	70.9	11	76.6	13	77.2	13
Caribo	71.9	14	75.3	12	69.7	14	69.1	12	78.2	9	78.4	6
Blueboy	74.1	12	74.6	13	72.8	11	68.7	13	76.1	14	77.5	8
Clarion	72.1	13	73.5	14	67.8	15	66.5	15	76.7	12	77.5	11
Maris Nimrod	67.4	15	71.7	15	70.4	13	66.8	14	75.1	15	75.7	15
Carifen 12	64.1	16	64.7	16	67.6	16	60.5	16	71.3	16	69.8	16
Mean	74.9		76.2		75.6		72.2		78.3		77.8	
L.S.D. of cultivar means (.05)	3.4		1.9		2.6		4.2		2.1		3.9	
Coefficient of variation (%)	--		0.9		2.2		3.7		1.7		0.9	

Table 78. Three-year means and rankings of test weight (kg/hl) for 16 cultivars grown in the International Winter Wheat Performance Nursery, 1972, 1973 and 1974. Concluded.

Cultivar	Zurich Switzerland		Eskisehir,[a] Turkey		Weihenstephan, West Germany		Novi Sad, Yugoslavia		Cultivar mean over 10 locations
	kg/hl	rank	kg/hl	rank	kg/hl	rank	kg/hl	rank	kg/hl
Bezostaya 1	79.5	2	83.4	2	80.1	2	79.0	2	80.4
Lancota (NE701132)	75.2	9	82.5	3	78.2	5	76.7	4	78.5
Diplomat	80.5	1	79.9	10	81.0	1	79.2	1	78.5
Atlas 66	77.5	6	80.7	7	79.3	4	76.6	9	78.3
Dacia	78.8	3	81.4	6	76.9	9	77.6	3	78.2
Rousalka	77.6	5	81.6	4	77.0	8	76.2	6	78.1
Marimp 3	76.0	8	80.3	8	77.2	7	75.9	8	77.3
Moldova	74.9	10	81.5	5	75.2	12	74.8	11	77.2
Zlatna Dolina	74.9	11	79.7	11	76.7	10	76.1	7	77.1
Zenith	78.0	4	80.2	9	80.1	3	76.3	5	77.0
Kirac 66	72.1	14	83.7	1	71.3	15	74.6	12	75.7
Caribo	77.1	7	78.1	14	77.3	6	75.0	10	74.9
Blueboy	71.4	15	78.3	13	74.9	13	73.7	13	74.1
Clarion	72.6	13	77.5	15	75.8	11	71.9	14	73.1
Maris Nimrod	73.8	12	78.7	12	74.9	14	70.0	15	72.4
Carifen 12	62.8	16	75.0	16	67.0	16	66.5	16	66.8
Mean	75.2		80.2		76.4		74.9		76.1
L.S.D. of cultivar means (.05)	3.8		2.0		2.6		3.5		1.9
Coefficient of variation (%)	2.3		1.1		1.9		2.1		1.9

a) Three replications only.

Table 79. Three-year means and rankings for 1000-kernel weight (gms) for 16 cultivars grown in the International Winter Wheat Performance Nursery, 1972, 1973 and 1974.

Cultivar	Simla, India		Svalof, Sweden		Zurich, Switzerland		Cultivar mean over 3 locations
	gm	rank	gm	rank	gm	rank	gm
Dacia	29.3	5	48.5	1	39.0	2	38.9
Rousalka	32.0	1	44.5	3	37.5	6	38.0
Maris Nimrod	30.8	2	43.4	4	38.9	3	37.7
Bezostaya 1	27.6	9	45.3	2	39.1	1	37.3
Moldova	30.3	3	42.6	7	38.1	4	37.0
Diplomat	28.8	6	43.4	6	38.0	5	36.7
Caribo	26.5	12	43.4	5	35.6	10	35.2
Clarion	28.6	7	39.1	10	35.9	8	34.5
Lancota (NE701132)	26.4	13	40.7	8	35.0	12	34.0
Zlatna Dolina	27.5	10	38.1	11	35.8	9	33.8
Maimp 3	27.4	11	35.1	14	37.1	7	33.2
Blueboy	24.7	14	40.0	9	33.6	13	32.8
Carifen 12	30.1	4	34.6	15	33.5	14	32.7
Kirac 66	28.0	8	36.8	13	32.8	15	32.5
Atlas 66	24.5	15	37.7	12	35.2	11	32.5
Zenith	23.2	16	34.1	16	30.0	16	29.1
Mean	27.9		40.4		35.9		34.8
L.S.D. of cultivar means (.05)	4.6		4.7		6.7		4.0
Coefficient of variation (%)	9.5		3.8		13.8		9.7

Table 80. Three-year means and rankings for plant height (cm) for 16 cultivars grown in the International Winter Wheat Performance Nursery, 1972, 1973 and 1974.

Cultivar	Bordenave, Argentina		Vienna,[a] Austria		Tolbukhin, Bulgaria		Cambridge, England		Martonvasar, Hungary		Szeged, Hungary		Simla, India		Hamadan, Iran	
	cm	rank	cm	rank	cm	rank	cm	rank	cm	rank	cm	rank	cm	rank	cm	rank
Carifen 12	80	1	78	1	82	1	86	1	77	3	81	2	58	1	59	1
Zlatna Dolina	83	2	80	2	84	3	86	2	73	1	81	1	62	3	59	2
Rousalka	85	3	81	3	83	2	87	3	73	2	83	3	61	2	61	3
Marimp 3	93	6	90	4	101	7	105	6	79	4	91	4	75	8	66	5
Maris Nimrod	93	7	96	7	93	4	101	4	94	9	98	5	71	6	66	6
Clarion	88	4	96	6	96	5	103	5	89	6	99	6	64	4	63	4
Bezostaya 1	95	8	92	5	97	6	105	7	89	5	102	7	77	9	78	13
Zenith	96	9	102	11	101	8	105	8	94	8	106	8	71	7	67	7
Diplomat	90	5	105	13	102	9	112	12	101	14	108	11	71	5	70	8
Caribo	96	10	102	9	104	11	110	10	99	12	108	10	80	11	71	9
Blueboy	103	11	102	8	104	10	108	9	97	10	108	12	82	12	76	11
Moldova	106	12	102	10	106	13	112	11	92	7	109	13	84	13	78	14
Dacia	109	13	103	12	109	14	114	13	98	11	107	9	79	10	75	10
Lancota (NE701132)	113	15	107	15	106	12	115	14	100	13	113	14	84	14	78	12
Kirac 66	111	14	109	14	115	16	119	15	105	15	115	15	95	15	80	15
Atlas 66	115	16	115	16	111	15	128	16	108	16	120	16	99	16	84	16
Mean	97.3		97.6		99.5		105.9		91.8		101.9		75.8		70.6	
L.S.D. of cultivar means (.05)	13.0		5.8		6.0		4.7		7.1		8.4		9.7		4.9	
Coefficient of variation (%)	4.8		4.3		3.8		3.2		3.9		3.1		8.7		7.3	

a) Three replications only.

Table 80. Three-year means and rankings for plant height (cm) for 16 cultivars grown in the International Winter Wheat Performance Nursery, 1972, 1973 and 1974. Continued.

Cultivar	Sulaimaniya, Iraq		Rieti, Italy		Morioka Iwate, Japan		Suwon, Korea		Wageningen, Netherlands		Fundulea, Romania		Svalof, Sweden		Zurich, Switzerland	
	cm	rank	cm	rank	cm	rank	cm	rank	cm	rank	cm	rank	cm	rank	cm	rank
Carifen 12	74	1	86	2	73	1	79	1	88	1	71	1	76	2	81	2
Zlatna Dolina	75	2	83	1	77	2	83	2	93	3	71	2	78	3	83	3
Rousalka	85	3	88	3	82	3	84	3	90	2	75	3	75	1	80	1
Marimp 3	99	8	104	4	93	4	100	5	107	5	83	4	85	4	98	4
Maris Nimrod	89	5	107	5	94	5	97	4	105	4	92	7	92	5	104	6
Clarion	87	4	107	6	103	6	103	6	112	7	92	6	96	9	107	7
Bezostaya 1	100	9	111	8	106	7	106	7	108	6	91	5	94	6	103	5
Zenith	90	6	108	7	109	10	106	8	114	9	95	9	96	8	108	8
Diplomat	92	7	112	9	115	16	110	11	117	10	96	10	102	14	113	12
Caribo	103	10	116	11	111	12	112	12	119	13	101	13	104	16	114	13
Blueboy	106	11	113	10	115	15	106	9	120	15	95	8	99	12	110	10
Moldova	110	14	117	12	114	14	114	14	114	8	100	12	95	7	108	9
Dacia	108	13	118	13	111	11	113	13	117	11	100	11	98	11	113	11
Lancota (NE701132)	108	12	120	14	108	8	107	10	118	12	103	14	97	10	119	14
Kirac 66	125	16	129	15	109	9	116	15	127	16	111	16	100	13	125	16
Atlas 66	123	15	133	16	112	13	117	16	120	14	111	15	103	15	123	15
Mean	98.4		109.6		102.1		103.2		110.3		92.6		93.0		105.4	
L.S.D. of cultivar means (.05)	10.2		7.2		10.7		8.7		5.9		7.3		8.1		8.3	
Coefficient of variation (%)	5.3		4.4		4.1		5.7		3.9		5.6		3.9		5.4	

Table 80. Three-year means and rankings for plant height (cm) for 16 cultivars grown in the International Winter Wheat Performance Nursery, 1972, 1973 and 1974. Concluded.

Cultivar	Eskisehir,[a] Turkey		Ithaca, New York U.S.A.		Krasnodar,[a] U.S.S.R.		Monsheim, West Germany		Weihenstephan, West Germany		Novi Sad, Yugoslavia		Zagreb, Yugoslavia		Cultivar mean over 23 locations
	cm	rank	cm	rank	cm	rank	cm	rank	cm	rank	cm	rank	cm	rank	cm
Carifen 12	67	2	67	1	77	1	58	1	80	1	80	1	83	1	76
Zlatna Dolina	64	1	70	2	81	2	63	2	84	3	87	3	83	2	78
Rousalka	72	3	72	3	83	3	65	3	82	2	84	2	86	3	79
Marimp 3	74	4	79	4	98	6	68	4	93	4	96	5	98	6	90
Maris Nimrod	75	6	90	6	95	4	69	5	103	5	96	4	98	5	92
Clarion	75	5	87	5	95	5	69	6	104	7	99	7	95	4	93
Bezostaya 1	86	10	92	7	102	9	69	7	104	6	99	6	102	9	96
Zenith	82	8	94	9	99	8	70	8	108	8	99	8	99	7	97
Diplomat	81	7	93	8	98	7	74	11	113	13	105	15	101	8	99
Caribo	82	9	95	10	104	10	72	9	114	14	103	11	107	12	101
Blueboy	91	11	99	11	105	11	72	10	111	11	103	9	106	11	101
Moldova	93	13	103	13	115	15	76	13	110	10	104	12	105	10	103
Dacia	93	14	102	12	114	14	77	15	109	9	105	14	112	15	104
Lancota (NE701132)	92	12	103	14	109	12	74	12	113	12	103	10	109	14	104
Kirac 66	105	15	105	15	113	13	77	14	124	15	105	13	109	13	110
Atlas 66	106	16	109	16	115	16	86	16	125	16	107	16	115	16	112
Mean	83.6		91.2		100.3		71.1		104.8		98.4		100.3		95.9
L.S.D. of cultivar means (.05)	6.8		3.7		7.8		5.2		5.2		3.9		6.7		2.5
Coefficient of variation (%)	5.4		3.7		3.7		4.0		4.5		4.4		3.8		4.7

a) Three replications only.

Table 81. Three-year means and rankings for lodging (%) for 16 cultivars grown in the International Winter Wheat Performance Nursery, 1972, 1973 and 1974.

Cultivar	Cambridge, England		Martonvasar,[a] Hungary		Suwon, Korea		Wageningen, Netherlands		Svalof, Sweden		Zurich, Switzerland		Eskisehir, Turkey	
	%	rank	%	rank	%	rank	%	rank	%	rank	%	rank	%	rank
Diplomat	16.5	10	0.0	1	0.8	6	0.0	1	8.8	6	1.7	1	0.8	7
Carifen 12	7.1	2	0.0	2	0.4	5	0.0	2	1.0	2	8.8	7	0.4	4
Zlatna Dolina	7.5	3	0.0	3	0.4	4	0.0	3	1.3	3	7.5	5	0.4	5
Rousilka	6.7	1	0.0	4	0.0	3	0.0	4	0.8	1	5.4	3	0.3	1
Clarion	16.5	11	0.0	5	0.0	2	0.0	5	13.3	7	2.1	2	0.8	6
Marimp 3	8.3	4	1.8	6	10.0	9	0.0	9	2.4	4	9.2	8	0.3	3
Caribo	14.9	9	15.0	8	0.0	1	0.0	6	20.4	11	7.5	4	0.8	8
Zenith	12.4	7	5.9	7	7.5	8	0.0	7	15.0	8	8.8	6	0.3	2
Bezostaya 1	8.3	5	15.4	9	14.2	10	2.0	11	17.1	10	12.1	9	1.3	9
Maris Nimrod	32.8	14	15.8	10	1.7	7	0.0	8	25.4	13	22.9	11	1.8	10
Blueboy	14.1	8	20.0	11	31.3	11	1.0	10	24.6	12	20.8	10	6.3	14
Dacia	10.8	6	33.1	13	55.8	13	26.0	12	16.9	9	28.8	12	2.4	11
Moldova	17.0	12	24.5	12	52.7	12	40.0	13	27.1	14	34.6	13	3.8	12
Lancota (NE701132)	17.4	13	63.3	15	61.4	15	40.0	14	8.4	5	49.6	14	7.9	15
Atlas 66	42.8	15	35.9	14	56.4	14	63.0	16	28.8	15	65.4	15	4.6	13
Kirac 66	75.7	16	70.6	16	70.9	16	55.0	15	70.4	16	88.8	16	13.1	16
Mean	19.3		18.8		22.7		14.2		17.6		23.4		2.8	
L.S.D. of cultivar means (.05)	20.2		24.7		32.0		21.9		28.3		18.1		6.1	
Coefficient of variation (%)	124.4		67.7		62.6		62.7		38.7		55.2		81.5	

a) Three replications only.

Table 81. Three-year means and rankings for lodging (%) for 16 cultivars grown in the International Winter Wheat Performance Nursery, 1972, 1973 and 1974. Concluded.

Cultivar	Krasnodar, U.S.S.R.		Monsheim, West Germany		Weihenstephan, West Germany		Novi Sad, Yugoslavia		Zagreb, Yugoslavia		Cultivar mean over 12 locations
	%	rank	%	rank	%	rank	%	rank	%	rank	%
Diplomat	6.7	3	0.0	2	0.8	2	17.5	1	0.0	1	4.5
Carifen 12	5.8	2	0.4	6	3.3	7	34.8	3	0.4	2	5.3
Zlatna Dolina	12.1	4	0.4	7	5.4	8	26.3	2	1.3	3	5.3
Rousalka	0.0	1	0.0	5	6.3	9	50.6	7	7.1	5	6.6
Clarion	17.5	6	0.0	3	2.5	5	48.3	6	1.7	4	8.7
Marimp 3	21.3	8	4.0	12	2.5	4	47.5	5	15.4	6	10.5
Caribo	17.1	5	0.0	1	0.0	1	45.6	4	33.3	10	13.0
Zenith	19.6	7	0.0	4	0.8	3	58.1	9	27.1	9	13.2
Bezostaya 1	32.5	10	1.5	11	6.7	10	59.0	10	20.4	7	16.0
Maris Nimrod	38.8	12	0.8	8	2.5	6	83.2	13	24.2	8	21.1
Blueboy	29.2	9	1.1	9	19.2	11	51.5	8	40.8	11	21.9
Dacia	57.5	13	5.8	13	22.9	12	79.7	12	58.8	12	33.6
Moldova	35.4	11	7.8	14	30.8	13	84.6	14	61.2	13	35.4
Lancota (KE701132)	65.4	14	1.1	10	36.7	14	91.2	15	89.8	16	44.7
Atlas 66	68.3	15	10.4	16	48.3	15	79.9	11	88.3	14	50.1
Kirac 66	78.7	16	9.2	15	61.3	16	94.3	16	88.5	15	65.4
Mean	31.6		2.7		15.6		59.5		34.9		22.2
L.S.D. of cultivar means (.05)	26.1		8.3		16.2		37.2		26.1		9.6
Coefficient of variation (%)	38.6		238.7		62.3		23.9		50.3		59.1

Table 82. Three-year means and rankings for winter survival (%) for 16 cultivars grown in the International Winter Wheat Performance Nursery, 1972, 1973 and 1974.

Cultivar	Morioka Iwate, Japan		Suwon, Korea		Wageningen, Netherlands		Ithaca, New York U.S.A.		Cultivar mean over 12 locations
	%	rank	%	rank	%	rank	%	rank	%
Bezostaya 1	97	1	98	6	90	7	89	2	94
Moldova	88	3	100	2	91	6	86	8	91
Dacia	88	2	100	1	88	14	86	9	90
Blueboy	81	6	94	9	91	3	90	1	89
Diplomat	81	7	98	5	90	8	87	5	89
Zenith	88	4	93	10	89	13	84	11	89
Rousalka	79	8	99	3	85	16	88	4	88
Caribo	76	9	90	13	93	1	87	6	86
Clarion	85	5	83	15	92	2	85	10	86
Maris Nimrod	69	12	97	7	91	4	87	7	86
Lancota (NE701132)	73	11	88	14	90	11	89	3	85
Zlatna Dolina	76	10	91	12	90	9	83	13	85
Carifen 12	68	14	95	8	91	5	83	12	84
Kirac 66	68	13	99	4	90	12	76	15	83
Atlas 66	66	15	92	11	90	10	77	14	81
Marimp 3	64	16	79	16	85	15	59	16	72
Mean	77.8		93.5		89.7		83.3		86.1
L.S.D. of cultivar means (.05)	25.6		17.0		5.9		8.3		7.8
Coefficient of variation (%)	7.0		2.6		3.7		8.1		5.6

Table 83. Three-year means for frost damage (0-9) for 16 cultivars grown in the International Winter Wheat Performance Nursery, 1972, 1973 and 1974.

Cultivar	Bordenave, Argentina
Bezostaya 1	0
Lancota (NE701132)	0
Dacia	1
Blueboy	1
Kirac 66	1
Clarion	1
Maris Nimrod	1
Rousalka	1
Caribo	1
Diplomet	1
Zenith	1
Moldova	2
Carifen 12	2
Zlatna Dolina	2
Atlas 66	3
Marimp 3	4
Mean	1.3
L.S.D. of cultivar means (.05)	1.3
Coefficient of variation (%)	32.5

Table 84. Three-year means and rankings for days to flowering (days from Jan. 1) for 16 cultivars grown in the International Winter Wheat Performance Nursery, 1972, 1973 and 1974.

Cultivar	Bordenave, Argentina		Vienna,[a] Austria		Tolbukhin, Bulgaria		Martonvasar, Hungary		Szeged, Hungary		Simla, India		Hamadan, Iran		Karaj, Iran	
	days from Jan. 1	rank	days from Jan. 1	rank	days from Jan. 1	rank	days from Jan. 1	rank	days from Jan. 1	rank	days from Jan. 1	rank	days from Jan. 1	rank	days from Jan. 1	rank
Rousalka	300	2	141	1	140	1	154	1	138	1	109	2	145	8	129	2
Moldova	300	1	143	2	143	2	157	2	139	2	110	3	141	1	129	1
Zlatna Dolina	305	4	144	3	146	3	158	3	140	3	111	5	143	2	133	4
Marimp 3	302	3	147	5	147	5	161	7	141	6	108	1	144	4	133	5
Dacia	308	7	146	4	146	4	160	4	141	5	114	9	143	3	133	3
Bezostaya 1	308	8	148	6	149	7	160	5	141	4	112	7	145	7	136	8
Blueboy	308	6	149	8	150	8	162	8	141	7	111	6	146	9	136	9
Lancota (NE701132)	311	9	148	7	149	6	161	6	144	9	116	10	145	5	137	10
Atlas 66	312	10	151	10	150	9	163	10	143	8	111	4	145	6	136	7
Kirac 66	306	5	150	9	150	10	162	9	144	10	113	8	146	10	135	6
Carifen 12	317	11	153	11	154	11	164	11	147	11	124	11	149	11	142	11
Maris Nimrod	325	13	156	12	156	13	168	13	148	13	127	13	152	14	143	14
Zenith	325	12	157	13	156	12	169	15	147	12	128	14	152	12	143	13
Caribo	325	14	158	15	158	14	169	14	149	14	127	12	154	15	143	12
Clarion	327	15	157	14	160	15	168	12	150	15	131	15	154	16	145	16
Diplomat	330	16	160	16	160	16	171	16	151	16	134	16	152	13	144	15
Mean	312.9		150.5		150.8		163.0		144.0		117.9		147.2		137.2	
L.S.D. of cultivar means (.05)	4.9		1.7		2.0		2.3		3.1		3.5		4.4		4.0	
Coefficient of variation (%)	1.2		0.6		--		0.8		0.8		1.6		2.6		1.6	

a) Three replications only.

Table 84. Three-year means and rankings for days to flowering (days from Jan. 1) for 16 cultivars grown in the International Winter Wheat Performance Nursery, 1972, 1973 and 1974. Continued.

Cultivar	Sulaimaniya, Iraq		Rieti, Italy		Morioka Iwate, Japan		Suwon, Korea		Toluca, Mexico		Wageningen, Netherlands		Fundulea, Romania	
	days from Jan. 1	rank	days from Jan. 1	rank	days from Jan. 1	rank	days from Jan. 1	rank	days from Jan. 1	rank	days from Jan. 1	rank	days from Jan. 1	rank
Rousalka	119	1	134	1	153	1	139	2	158	1	152	1	141	1
Moldova	120	2	134	2	156	2	139	1	163	4	153	2	142	2
Zlatna Dolina	124	3	139	4	158	4	142	3	165	5	155	4	143	3
Marimp 3	125	4	139	3	156	3	142	5	161	2	155	3	145	4
Dacia	132	9	142	5	159	5	142	4	165	6	157	5	146	6
Bezostaya 1	128	6	142	6	159	7	145	10	172	10	158	6	145	5
Blueboy	127	5	143	7	159	6	144	8	167	9	159	8	147	7
Lancota (NE701132)	133	10	144	8	160	8	144	6	167	8	159	9	148	8
Atlas 66	129	8	144	9	160	9	144	9	166	7	159	7	149	10
Kirac 66	129	7	145	10	160	10	144	7	162	3	160	10	149	9
Carifen 12	142	11	147	11	166	12	148	11	181	11	163	11	152	11
Maris Nimrod	145	14	149	12	168	15	149	12	182	12	164	12	155	14
Zenith	144	13	149	13	164	11	151	13	186	14	167	14	153	12
Caribo	142	12	150	14	168	14	152	14	185	13	166	13	154	13
Clarion	146	16	152	16	169	16	152	15	192	15	167	16	155	15
Diplomat	145	15	152	15	168	13	152	16	199	16	167	15	156	16
Mean	133.0		144.1		161.4		145.6		173.1		160.0		148.8	
L.S.D. of cultivar means (.05)	5.8		4.1		2.5		3.6		4.3		2.8		2.2	
Coefficient of variation (%)	2.0		0.5		0.8		1.2		1.3		0.9		--	

Table 84. Three-year means and rankings for days to flowering (days from Jan. 1) for 16 cultivars grown in the International Winter Wheat Performance Nursery, 1972, 1973 and 1974. Concluded.

Cultivar	Svalof, Sweden		Zurich, Switzerland		Eskisehir,[a] Turkey		Monsheim, West Germany		Weihenstephan, West Germany		Novi Sad, Yugoslavia		Cultivar mean over 21 locations
	days from Jan. 1	rank	days from Jan. 1	rank	days from Jan. 1	rank	days from Jan. 1	rank	days from Jan. 1	rank	days from Jan. 1	rank	days from Jan. 1
Rousalka	159	1	156	1	142	1	141	1	146	1	139	2	149
Moldova	162	2	157	2	143	3	143	2	148	2	138	1	151
Zlatna Dolina	164	5	159	3	144	5	143	3	151	3	140	3	153
Mariup 3	164	6	160	4	143	4	145	4	153	5	141	5	153
Dacia	163	3	160	5	142	2	147	5	152	4	143	6	155
Bezostaya 1	167	8	163	6	146	9	148	9	157	8	141	4	156
Blueboy	167	9	166	9	146	8	148	7	157	9	144	7	156
Lancota (NE701132)	163	4	165	8	145	6	148	8	154	7	146	9	157
Atlas 66	166	7	165	7	147	10	148	6	154	6	145	8	157
Kirac 66	167	10	166	10	145	7	149	10	158	10	147	10	157
Carifen 12	168	11	168	11	147	12	152	11	160	11	150	11	162
Maris Nimrod	171	13	170	12	151	13	155	12	161	12	152	13	164
Zenith	169	12	174	14	147	11	156	15	162	13	151	12	164
Caribo	171	14	173	13	151	14	156	13	163	14	154	14	165
Clarion	172	15	174	15	155	16	157	16	165	15	155	16	167
Diplomat	172	16	175	16	151	15	156	14	165	16	155	15	168
Mean	166.6		165.6		146.5		149.6		156.5		146.4		158.3
L.S.D. of cultivar means (.05)	1.8		4.4		3.2		2.6		2.6		4.6		1.6
Coefficient of variation (%)	0.2		0.9		1.0		1.1		0.3		0.3		1.1

a) Three replications only.

Table 85. Three-year means and rankings for days to ripening (days from Jan. 1) for 16 cultivars grown in the International Winter Wheat Performance Nursery, 1972, 1973 and 1974.

Cultivar	Bordenave, Argentina		Martonvasar, Hungary		Simla, India		Hamadan, Iran		Karaj, Iran		Sulaimaniya, Iraq		Rieti, Italy		Morioka Iwate, Japan	
	days from Jan. 1	rank	days from Jan. 1	rank	days from Jan. 1	rank	days from Jan. 1	rank	days from Jan. 1	rank	days from Jan. 1	rank	days from Jan. 1	rank	days from Jan. 1	rank
Moldova	350	2	199	3	134	1	184	2	174	1	156	2	185	1	195	4
Rousalka	349	1	199	2	137	3	184	1	175	2	155	1	185	2	193	1
Zlatna Dolina	351	3	198	1	141	8	185	4	175	3	158	4	186	3	194	2
Marimp 3	351	4	201	7	136	2	185	3	179	7	158	3	186	3	194	3
Dacia	355	6	200	4	139	4	187	6	178	4	163	8	188	5	197	5
Blueboy	352	5	201	8	140	6	189	12	180	10	160	6	189	6	199	7
Bezostaya 1	355	8	201	6	141	7	186	5	178	5	160	5	190	9	198	6
Lancota (NE701132)	356	9	204	9	143	9	187	7	178	6	164	9	190	8	201	11
Kirac 66	355	7	204	11	144	10	188	8	179	8	165	10	191	10	200	10
Atlas 66	358	10	204	10	140	5	188	9	179	9	160	7	192	11	200	9
Carifen 12	358	11	200	5	152	11	188	10	181	11	171	11	190	7	200	8
Zenith	364	13	205	12	159	13	190	13	184	14	174	13	194	12	201	12
Caribo	366	14	208	15	157	12	188	11	183	12	173	12	194	13	205	13
Maris Nimrod	364	12	206	13	159	14	190	14	184	13	174	14	195	14	205	13
Clarion	367	15	207	14	164	15	191	16	187	16	175	16	196	15	206	16
Diplomat	368	16	210	16	164	16	191	15	185	15	175	15	199	16	206	15
Mean	357.4		203.0		146.8		187.5		180.0		164.9		190.6		199.6	
L.S.D. of cultivar means (.05)	7.0		3.2		7.5		3.1		4.0		4.2		4.0		2.5	
Coefficient of variation (%)	0.6		0.6		0.9		0.8		1.2		1.5		0.5		0.7	

Table 95. Three-year means and rankings for days to ripening (days from Jan. 1) for 16 cultivars grown in the International Winter Wheat Performance Nursery, 1972, 1973 and 1974. Concluded.

Cultivar	Suwon, Korea		Wageningen, Netherlands		Fundulea, Romania		Svalöf, Sweden		Eskisehir,[a] Turkey		Novi Sad, Yugoslavia		Cultivar mean over 14 locations
	days from Jan. 1	rank	days from Jan. 1	rank	days from Jan. 1	rank	days from Jan. 1	rank	days from Jan. 1	rank	days from Jan. 1	rank	days from Jan. 1
Moldova	175	1	205	1	174	1	213	3	192	3	182	1	194
Rousalka	177	3	206	3	176	2	212	1	192	1	183	4	195
Zlatna Dolina	176	2	208	4	177	3	214	4	195	5	183	3	196
Marimp 3	178	6	210	7	181	9	215	5	192	2	183	2	196
Dacia	178	5	206	2	178	4	212	2	193	4	184	6	197
Blueboy	181	10	210	6	181	8	218	9	198	8	185	7	199
Bezostaya 1	180	8	214	10	181	7	219	10	197	6	184	5	199
Lancota (NE701132)	177	4	210	5	178	5	215	8	198	7	186	8	199
Kirac 66	181	9	212	9	179	6	215	6	198	10	187	9	200
Atlas 66	179	7	215	11	182	10	219	11	200	12	187	10	200
Carifen 12	183	11	211	8	183	11	215	7	198	9	188	11	201
Zenith	186	14	219	13	184	12	220	14	199	11	197	15	206
Caribo	185	12	217	12	184	13	221	15	205	13	193	13	206
Maris Nimrod	186	13	222	15	186	15	219	12	205	14	192	12	206
Clarion	187	15	222	14	185	14	219	13	207	16	196	14	208
Diplomat	189	16	227	16	186	16	222	16	206	15	198	16	209
Mean	181.1		213.3		180.9		216.7		198.4		187.9		200.6
L.S.D. of cultivar means (.05)	3.2		7.6		3.2		3.7		4.1		4.5		2.3
Coefficient of variation (%)	1.6		0.7		0.1		0.4		1.1		0.4		0.8

a) Three replications only.

Table 86. Three-year means and rankings for shattering (%) for 16 cultivars grown in the International Winter Wheat Performance Nursery, 1972, 1973 and 1974.

Cultivar	Morioka Iwate, Japan		Wageningen, Netherlands		Svalof, Sweden		Cultivar mean over 3 locations
	%	rank	%	rank	%	rank	%
Lancota (NE701132)	2	2	4	1	0	11	2
Kirac 66	1	1	6	5	0	1	2
Bezostaya 1	2	4	7	6	0	1	3
Maris Nimrod	4	8	5	2	0	1	3
Zenith	4	10	5	4	0	6	3
Clarion	2	6	8	8	0	1	3
Blueboy	4	9	7	7	0	6	4
Atlas 66	2	5	12	10	0	6	5
Zlatna Dolina	2	3	13	13	0	6	5
Caribo	12	14	5	3	0	1	6
Dacia	3	7	12	12	1	16	6
Caribo 12	6	12	12	11	0	6	6
Moldova	5	11	18	14	1	15	8
Diplomat	16	16	11	9	1	13	9
Marimp 3	12	15	19	15	1	14	10
Rousalka	10	13	23	16	0	12	11
Mean	5.4		10.3		0.3		5.3
L.S.D. of cultivar means (.05)	12.5		9.8		1.3		5.6
Coefficient of variation (%)	174.3		36.8		175.1		109.3