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Results of the Eighth International Winter Wheat Performance Nursery Grown in 1976

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ACKNOWLEDGMENTS

Cooperation of nursery collaborators from the 54 locations in 34 countries in which the Eighth International Winter Wheat Performance Nursery (IWWPN) was grown in 1976 is gratefully acknowledged. The nursery would not be possible without the information and data provided by these individuals. Their responsibility for nursery management, data recording, harvesting, and the return of data field books and seed quality samples to Nebraska is an essential component of the program.

The assistance of personnel in the Plant Production and Protection Division, Food and Agriculture Organization of the United Nations, especially Dr. W. Tahir and Dr. A. Hafiz in making nursery seed shipments to testing 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 these organizations and people.

The assistance of Miss Joyce Kovar and Mr. Steve Waddington in the preparation of this report also is acknowledged.

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DATA MANAGEMENT

The results presented in this report are based on data provided by our cooperators throughout the world. We report the data as we receive it and we hope that we have kept transcription errors to a minimum. Where questions about the data have arisen we have contacted the cooperators for clarification. We sincerely hope that, by this procedure, we have detected questionable or incorrect data before it was published.

SUMMARY

Seed for the Eighth International Winter Wheat Performance Nursery (IWWPN) was sent to cooperators at 64 locations in 39 countries in 1976. Performance data were reported from 54 locations. Fifty nursery sites were in the Northern Hemisphere. The Southern Hemisphere sites were at Bordenave, Argentina; Temuco, Chile, and 2 in the Republic of South Africa. The nursery consisted of 28 winter wheat varieties and 2 spring wheats, Lerma Rojo 64 and Rashid. Thirteen new cultivars were added for their first year of testing in the 1976 IWWPN while 17 were repeated from 1975.

Data are reported on grain yield, grain protein, test weight, 1000-kernel weight, plant height, lodging, winter survival, frost damage, maturity, shattering, seed grade, plant diseases, and all other traits reported by cooperators. Supplemental nursery management information is reported for each nursery site adjacent to the table of agro-

nomic, grain quality, and disease data for the site. Summary tables are presented by trait over locations for each variety and across varieties for 1976. In addition, means and other statistics based on regionalization of the data into six rather broad geographic areas of the world with appropriate statistical analyses are reported. Two-year means and statistics for 17 cultivars that were grown in the IWWPN's in 1975 and 1976 also are reported.

The nursery grand mean for yield based on 50 locations was 40.5 q/ha. This is 1.5 q/ha more than the grand mean of 39.0 q/ha reported over 42 locations for the 1975 IWWPN and 3.9 q/ha more than the 36.6 q/ha grand mean reported over 46 locations in the 1974 IWWPN. Individual nursery site yield means ranged from 1.1 q/ha at Jokioinen, Finland to 84.4 q/ha at Male Ripnany, Czechoslovakia. Eighteen nursery sites yielded between 21–40 q/ha and 23 sites produced grain yields between 41–60 q/ha. Six nursery sites yielded less than 20 q/ha and three yielded more than 60 q/ha. Talent, a variety from France, was the most productive on the average over 50 locations. Its grain yield was 46.8 q/ha or 3.3% higher than the long term check variety Bezostaya 1 (USSR). Talent also was the highest yielding cultivar in the 1975 IWWPN with an average yield over 42 locations of 44.8 q/ha. Other cultivars yielding slightly more than Bezostaya 1 included Priboy (USSR), Probstdorfer Karat (Austria), Martonvasar 2 (Hungary), Blueboy (USA), and F26-70 (Romania). The varieties Talent, Priboy, Probstdorfer Karat, Martonvasar 2, Blueboy, F26-70, and Bezostaya 1 ranked among the 10 highest yielding varieties at 37, 42, 34, 33, 32, 34, and 24 sites, respectively.

Based on regional analyses for yield from six different geographic regions of the world, none of the varieties was superior in more than one region. Talent, the highest yielding variety on a worldwide basis, was not the highest in any region. This also was the case in the 1975 IWWPN. In Northern Europe, the varieties Maris Huntsman (England), Priboy, and Probstdorfer Karat yielded 8.4, 7.0, and 3.5% more than Bezostaya 1. In Southern Europe, Priboy, Martonvasar 3 and Probstdorfer Karat out-yielded Bezostaya 1 by 8%. The yields of GKF-2 (Hungary), Martonvasar 2, Talent, Martonvasar 3 (Hungary), and F26-70 were slightly higher than Bezostaya 1 in North America. In the Southern Hemisphere, Blueboy and Probstdorfer Karat produced yields 7.6 and 1.0% higher than Bezostaya 1. The yields of Blueboy and GKF-8001 (Hungary) were superior in the Near and Middle Eastern region. The varieties F26-70 and Talent yielded 19.9 and 15.5% more than Bezostaya 1 in the Far East.

Two-year yield means of 17 cultivars for 1975–1976 over 39 locations showed a wide range. Grain yields of the highest yielding cultivars including Talent, Blueboy, and Bezostaya 1 were 46.6, 45.6, and 45.0 q/ha, respectively. The lowest yielding winter cultivar over the

two-year period was Atlas 66 with 33.5 q/ha.

Varieties exhibiting mean protein percentages higher than 15% include Sage (USA), Lerma Rojo 64 (Mexico), Bordenave Puan Sag (Argentina), Atlas 66 (USA), and Sentinel (USA). WA 5829 had the lowest protein content of all cultivars with 12.4%. A correlation coefficient of $-.16^{**}$ was computed between grain yield and grain protein. However, the relationship between yield level and protein content varied widely among varieties. An inverse relationship exists between these two traits, but some varieties yielded well while maintaining significantly above-average protein levels. The grain protein advantage of Atlas 66 is evident from the two-year analysis. Other cultivars possessing elevated levels of grain protein include Sentinel, Rashid (Iran), Lerma Rojo 64 and TRS 237 (Australia).

Cultivar means for test weight show the superiority of Probstdorfer Karat. The varieties Bordenave Puan Sag, Odesskaya 51 (USSR), Priboy, Martonvasar 3, and Bezostaya 1 also had good test weight values. Regional test weight means were considerably higher in Northern Europe, Southern Europe, and the Near and Middle East than they were in North America and the Southern Hemisphere. Two-year test weight means showed the superiority of Bezostaya 1 and Martonvasar 2. The lowest two-year weight means were computed for Maris Huntsman (England) and Kormoran (West Germany).

The grand mean for 1000-kernel weight over 19 sites was 37.1 grams. Cultivar means ranged from a high of 43.6 grams for Martonvasar 2 to a low of 28.8 grams for NE 68719 (USA). Three varieties including Bezostaya 1, Priboy, and Martonvasar 3 were high in both 1000-kernel weight and test weight. Bezostaya 1 and Martonvasar 2 had the highest 2-year 1000-kernel weight means. The grand mean over five locations was 37.5 grams.

The grand means for plant height and lodging were 92.5 cm and 18.8%, respectively. The height of Talent, the highest yielding variety in the 1976 IWWPN, was 80.2 cm. A tall variety, Probstdorfer Karat, was the third highest yielding in the nursery with only moderate lodging. The highest yielding varieties generally were between 92–100 cm tall. Varieties grew shorter in the region of the Near and Middle East than they did elsewhere. The relative height differences among cultivars across regions remained fairly consistent. Two of the five tallest varieties in the 1975–1976 IWWPN's, Rashid and Atlas 66, also had the highest lodging scores.

The grand mean for winter survival averaged over 25 sites reporting differential readings among varieties was 75.7%. Cultivar winter survival means ranged from 91.6% for Probstdorfer Karat to 26.2% for Galiafen (Chile). Other cultivars with high winter survival percentages included Oasis (USA), Sage, Sentinel, Bezostaya 1, and Odesskaya 51. In the comparison of two-year means for winter survival Sentinel, Martonvasar 2, and Bezostaya 1 had percentages of

92.0, 91.0, and 90.1 respectively.

Varieties comprising the 1976 IWWPN differed considerably in maturity. Early flowering winter varieties included Biserka (Yugoslavia), Kitakomi-Komugi (Japan), and Flavio (Italy). The latest flowering varieties were Lely (Netherlands) Maris Templar, Maris Huntsman, and Kormoran. In general, the varieties that flowered the earliest also ripened the earliest. Two-year means for flowering showed that Biserka required 153.3 days while Lely needed 170.3 days. The winter variety Biserka reached ripening slightly earlier than Rashid, a spring wheat, but Lely was the latest.

Cultivar differences in frost damage, shattering, seed grade, disease response, and other agronomic traits are reported and discussed.

Results of the Eighth International Winter Wheat Performance Nursery Grown in 1976

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

This is the eighth report of results from an International Winter Wheat Performance Nursery (IWWPN) organized in 1968 by the Nebraska Agricultural Experiment Station and the Science and Education Administration (SEA), 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 and stability of winter wheat cultivars in a range of latitudes, daylengths, fertility conditions, water management regimes, and disease complexes; (2) identify superior winter cultivars to serve as recipient genotypes for high protein and high lysine genes, (3) test the degree of expression and stability of the high protein and high lysine traits in a array of environments, and (4) provide a vehicle for exchange of germplasm and research cooperation throughout the major winter wheat producing areas of the world.

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EXPERIMENTAL PROCEDURE

Wheat seed for nursery 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 September to November. For the Southern Hemisphere, seed was shipped in December for planting in May and June. Each cooperator has been encouraged to adjust row length and spacing to achieve a seeding rate most compatible with local variety evaluation practices. Nursery size is restricted to 30 entries grown in 4 replications. However, cooperators are encouraged to add a limited number of local check varieties to the nursery to increase its utility at their locations.

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

CULTIVARS

Of the 30 cultivars grown in the 1976 IWWPN, 17 were repeated from the 1975 nursery with 13 new cultivars added for their first year of testing. Cultivars are grown in the nursery for two successive years. Four check cultivars, Bezostaya 1 (U.S.S.R.), Blueboy (U.S.A.), Atlas 66 (U.S.A.), and Lerma Rojo 64 (Mexico), have been in the nursery from its beginning. Bezostaya 1 is known worldwide for its yielding ability, grain quality, and other desirable agronomic traits. The variety Blueboy also has high yield potential in addition to serving as a low protein check. Atlas 66 is included for its high grain protein trait along with resistance to several races of leaf rust. The spring variety, Lerma Rojo 64, has high yield potential but is included in the nursery primarily to serve as a measure of winter severity.

Names, pedigrees, and origins of cultivars in the nursery are given in Table 1. All cultivars possess the winter habit of growth except the spring types, Rashid and Lerma Rojo 64, which were 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 as additional entries at the end of the replications. The mean performance of these cultivars has been included herein from all sites reporting such data, but they were not included in any of the statistical analyses.

A cultivar originating from Fundulea, Romania and tested as F26-70 in the Eighth IWWPN has recently been positively identified

Table 1. Cultivars grown in the Eighth International Winter Wheat Performance Nursery, 1976.

Name	Origin	Pedigree
Atlas 66	North Carolina, U.S.A.	Frondoso/2/Redhart 3/Noll 28
Bezostaya 1	U.S.S.R.	Lyutestsens #17/Skorospelka 2
Biserka	Yugoslavia	Fortunato^{2}/C.I. 13170, (Redcoat)
Blueboy	North Carolina, U.S.A.	Norin 10/Brevor//Anderson/Coker 55-9
Bordenave Puan Sag	Argentina	Cheg 160x 7748/Klein Anniversario
Dunav-1	Yugoslavia	Heine VII/129 Genus
F26-70†	Romania	Austria 57-59/Bezostaya 1
Flavio	Italy	Gallini/Marimp 8
Galiafen	Chile	Champlein/Mariache-Industrial Argentino
GKF-2	Hungary	Ko 32/Produttore//Bezostaya 1
GKF-8001	Hungary	A composite was irradiated by isotope "γ" rays and a dwarf line was selected. This was crossed with Bezostaya 1 and this variety was selected in the F_2 generation.
Kitakomi-Komugi	Japan	Tohoku 101/Tohoku
Kormoran	West Germany	F_1 Cappelle/Heine 2806.55//Heine 646.57
Lely	The Netherlands	Mado/Heine VII//Flevina
Lerma Rojo 64	Mexico	Lerma Rojo/4/Lerma 52/3/Norin 10/Brevor/2/Yaqui 50
Maris Huntsman	England	[(C.I. 12633 x Cappelle-Desprez^{5})] x [(Cappelle-Desprez x Hybrid 46)] x Professeur Marchal^{2}
Maris Templar	England	[{(C.I. 12633 x Cappelle-Desprez^{4}) x (Heine 110 x Cappelle-Desprez)} x Nord Desprez] x Viking
Martonvasar 2	Hungary	Bezostaya 1/Fertoidi 293//Bezostaya 1
Martonvasar 3	Hungary	Bezostaya 1/Fertoidi 293//Bezostaya 1
NE 68719	Nebraska, U.S.A.	Sen Sem/3/NB60//Mediterranean/Hope//Pawnee/Cheyenne//Cheyenne/Ponca//Turkey/Cheyenne
Oasis	Indiana, U.S.A.	Arthur 71/5/Arthur*3/3/Purdue 6028A2-15-9-2/2/Riley*2/Riley 67 (Purdue 6559 sel.)*2/4/Arthur*2/3/Riley 67*2/2/Riley/Bulgaria 88, PI94407.
Odesskaya 51	U.S.S.R.	Odesskaya 16/Bezostaya 1
Priboy	U.S.S.R.	Odesskaya 16/Odesskaya 51
Probstdorfer Karat (WWP 7147)	Austria	Probstdorfer Extrem/Bezostaya 1
Rashid	Iran	N.P. 788/Azar
Sage	Kansas, U.S.A.	Scout *4/Agent
Sentinel	Nebraska, U.S.A.	K58/Newthatch//(C/TM/MI/H)/3/Pawnee/Cheyenne/4/Scout
Talent	France	Champlein/3/Thatcher/Vilmorin/2/Fortunato
TRS 237	Australia	Gabo/Arg. Fedwef. KFNG/(Winglen^{3} x Thatcher)/Gabo
WA 5829	Washington, U.S.A.	Super Helvia//Suwon 92/CI13645

† This variety tested in the 1976 IWWPN has recently been identified as F26-67 by Dr. Nichifor Ceapoiu of Fundulea, Romania. The pedigree of this line is Kanred/Funo. F26-67 is a high yielding but lower protein cultivar than F26-70.

as F26-67. Therefore, henceforth in this report whenever F26-70 is referred to the true identity of this cultivar actually is F26-67.

NURSERY SITES

The 64 cooperators receiving seed of the Eighth IWWPN are listed in Table 2. The nursery was grown at 54 locations in 34 different countries, which represents a 84% completion rate. A total of 50 locations were in the Northern Hemisphere and the other four sites were in Bordenave, Argentina; Temuco, Chile, and two in the Republic of South Africa. 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.

Data field books were received at Lincoln, Nebraska from 53 locations. Severe winter-kill occurred at Prince Edward Island, Canada and only a limited amount of data were received from that site. Seed for planting the nurseries at Balcarce, Argentina; Pelotas, Brazil; Shalimar and Simla, India; Florence, Italy; Islamabad, Pakistan; Lima, Peru; Alcala de Henares and Logrono, Spain; and Akron, Colorado, U.S.A., either arrived too late for normal planting, or the nursery was abandoned for other reasons.

Ten-gram samples for quality analyses from harvested plots of the IWWPN were received from 49 of the 54 locations that reported yield and agronomic data. The seed samples from Davis, California were not analyzed due to discrepancies between plot and sample identity.

NURSERY MANAGEMENT

Details of nursery management of each IWWPN location are summarized and reported on the page preceding the table of nursery agronomic and disease data. This information is general and includes dates of seeding and harvest, precipitation, irrigation, fertilization, disease development, pest problems, plot size harvested for yield purposes, and a general description of production conditions.

Precipitation data for the growing cycle were reported from 45 locations. Rainfall ranged from a low of 97 mm at Davis, California, U.S.A. to a high of 1240 mm at Ithaca, New York, U.S.A. Thirty-two locations were in the 0 to 500 mm range and 11 had rainfall between 501 and 1000 mm. Two locations had rainfall in excess of 1000 mm. Average rainfall over 45 locations was 451 mm. Supplemental irrigation was applied at 7 locations or 13% of the nursery sites.

Fertilizer was applied to most of the nurseries. Nitrogen, phosphorus, and potassium were applied to 43, 38, and 22 of the sites,

Table 2. Nursery sites and cooperators of the Eighth International Winter Wheat Performance Nursery in 1976.[1/]

Country	Station	Cooperator(s) receiving seed
Afghanistan	Herat	Mr. M. A. Noory
"	Kabul	" "
Algeria	Algiers-Setif	Mr. M. Hachemi, Dr. G. Varughese
Argentina	Balcarce	Ing. Agr. E. F. Godoy
"	Bordenave	" "
Austria	Vienna	Dr. R. Hron
Brazil	Pelotas	Dr. Milton B. Rocha
Bulgaria	Tolbukhin	Dr. Boris Simeonov
Canada	Prince Edward Island	Dr. Hans Nass
Chile	Chillan	Dr. Ignacio Ramirez
"	Temuco	" "
Czechoslovakia	Male Ripnany	Ing. Dezider Michalik
"	Sedlec	Ing. Jaroslav Maly
East Germany	Blankenburg-Bohnshausen	Dr. A. Meinel
England	Cambridge	Dr. F. G. H. Lupton
Finland	Jokioinen	Dr. Rolf Manner
France	Orgerus	Dr. J. P. Hardouin
Hungary	Martonvasar	Dr. S. Rajki
"	Szeged	Dr. I. Szaniel
Iran	Hamadan	Dr. H. Kaveh
"	Karaj	"
India	Shalimar	Dr. M. V. Rao
"	Simla-Simla	Dr. M. K. Upadhyay
Iraq	Sulaimaniya	Dr. Mohammad A. Aziz
Italy	Florence	Prof. Marion Gasparini
"	Milano	Dr. Basilio Borghi
"	Rieti	Dr. G. Zitelli
Japan	Morioka Iwate	Dr. T. Gotoh
Jordan	Amman	Dr. Zulkifl Ghosheh
Korea	Suwon	Dr. Hyun Ok Choi
Lebanon	Beirut-Tel Amara	Dr. Y. Klaimi
Mexico	Toluca	Dr. Norman Borlaug
Nepal	Kathmandu	Mr. A. N. Bhattarai
Netherlands	Wageningen	Dr. Ir. A. C. Zeven
Norway	Vollebekk	Dr. Karl Ringlund
Peru	Lima	Dr. Marino Ramero
Poland	Warsaw-Radzikow	Prof. Stanislaw Starzycki
Romania	Fundulea	Prof. Dr. N. Ceapoiu
South Africa, Republic of[2/]	Bethlehem	Dr. I. B. J. Smit
Spain	Madrid	Ing. Javier Salazar
"	Logrono	Dr. P. de la Hera
Sweden	Svalof	Dr. Bo Kristiansson
Switzerland	Zurich	Dr. F. Weilenmann
Turkey	Ankara	Dr. Ahmet Demirlicakmak
"	Erzurum	Dr. Fahrettin Tosun
"	Eskisehir	Dr. Turhan Atay
United States	California, Davis	Dr. C. O. Qualset
"	Colorado, Akron	Dr. J. R. Welsh
"	" , Ft. Collins	" "
"	Montana, Billings	Dr. Peter A. Salm
"	Nebraska, Lincoln	Dr. V. A. Johnson
"	New York, Ithaca	Dr. Neal Jensen
"	North Carolina, Rowan Co.	Dr. C. F. Murphy
"	Oklahoma, Stillwater	Dr. E. L. Smith
"	Oregon, Corvallis	Dr. W. E. Kronstad
"	Washington, Pullman	Dr. R. E. Allan
USSR	Krasnodar	Dr. Y. M. Puchkov
"	Mironovski	Dr. V. N. Remeslo
"	Odessa	Dr. A. Sosinov
West Germany	Monsheim	Dr. K. Brunckhorst
"	Weihenstephan	Dr. G. Fischbeck
Yugoslavia	Novi Sad	Prof. Slavko Borojevic
"	Zagreb	Dr. Josip Potocanec

[1/] Nursery seed was distributed to 64 locations in 39 countries.

[2/] Two nurseries were distributed to this location.

Table 3. Latitude, longitude and elevation of nursery sites in the Eighth International Winter Wheat Performance Nursery in 1976.

Country	Station	Latitude	Longitude	Elevation m
Afghanistan	Herat	N34° 11'	E62° 13'	964
"	Kabul	N34° 33'	E69° 12'	1803
Algeria	Setif	N36° 09'	E05° 21'	1000
Argentina	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
Czechoslovakia	Male Ripnany	N48° 29'	E17° 39'	172
"	Sedlec	N50° 14'	E14° 30'	300
East Germany	Bohnshausen	N51° 42'	E11° 00'	202
England	Cambridge	N52° 10δ	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
Iran	Hamadan	N35° 12'	E48° 43'	1644
"	Karaj	N35° 48'	E50° 58'	1300
Iraqa	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
Jordan	Amman	N36° 02'	E31° 15'	770
Korea	Suwon	N37° 16'	E126° 59'	37
Lebanon	Tel-Amara,(Beirut)	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
Norway	Vollebekk	N60° 00'	E11° 00'	--
Romania	Fundulea	N44° 03'	E24° 10'	66
South Africa, Republic of	Bethlehem	S28° 10'	E28° 18'	1631
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, Davis	N38° 32'	W121° 46'	18
"	Colorado, Ft. Collins	N40° 35'	W105° 10'	1475
"	Montana, Billings	N45° 38'	W108° 30'	923
"	Nebraska, Lincoln	N41° 10'	W96° 25'	360
"	New York, Ithaca	N42° 05'	W76° 05'	366
"	North Carolina,Rowan Co.	N35° 42'	W80° 37'	825
"	Oklahoma, Stillwater	N36° 06'	W97° 04'	270
"	Oregon, Corvallis	N44° 32'	W123° 15'	70
"	Washington, Pullman	N46° 42'	W117° 08'	777
USSR	Krasnodar	N45° 00'	E38° 55'	38
"	Mironovski	N50° 15'	E31° 10'	--
"	Odessa	N46° 40'	E31° 20'	42
West Germany	Monsheim	N49° 35'	E08° 20'	160
"	Weihenstephan	N48° 24'	E11° 44'	467
Yugoslavia	Novi Sad	N45° 05'	E19° 08'	84
"	Zagreb	N45° 49'	E15° 59'	177

FIGURE 1

8th INTERNATIONAL WINTER WHEAT PERFORMANCE NURSERY

64 SITES; 39 COUNTRIES

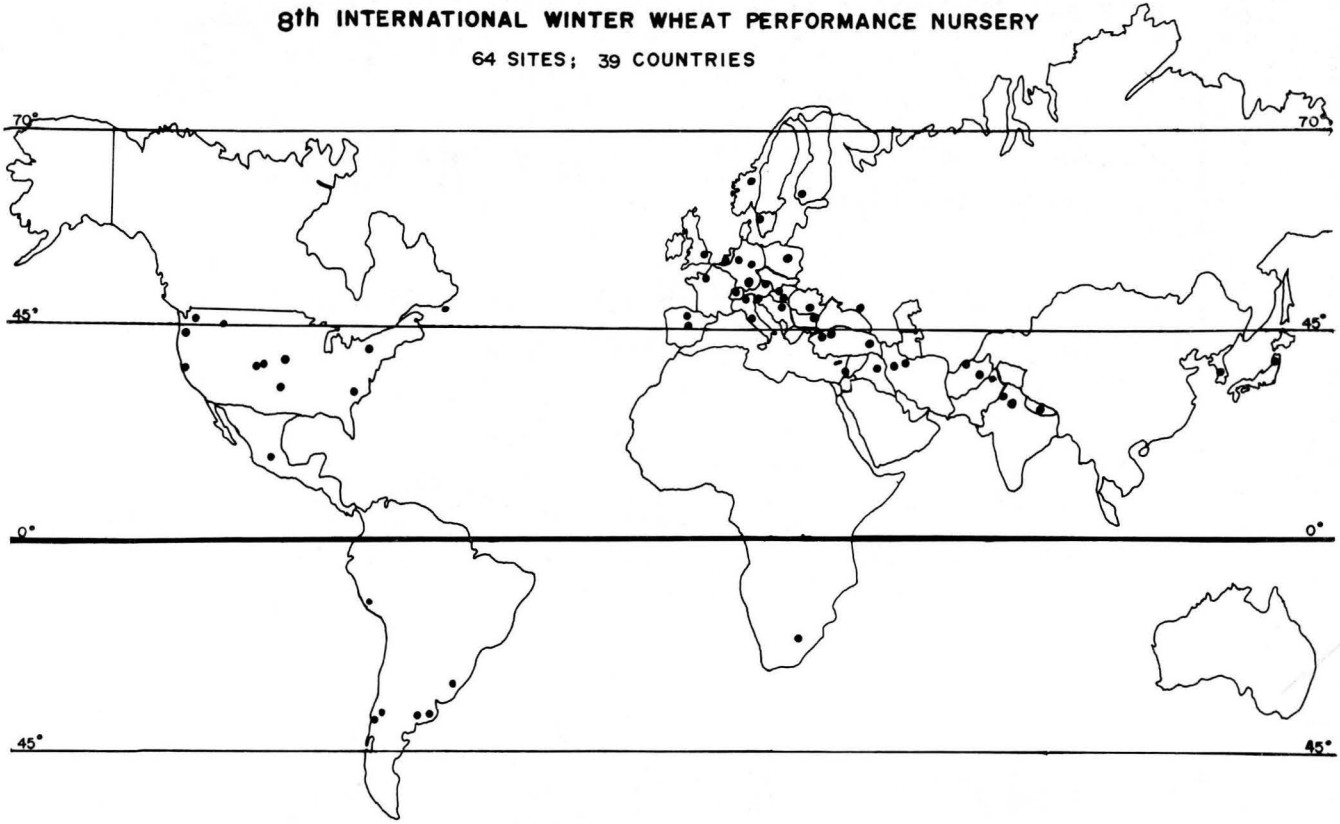

Figure 2. Length of growing season for nursery sites in the Eighth International Winter Wheat Performance Nursery in 1976.

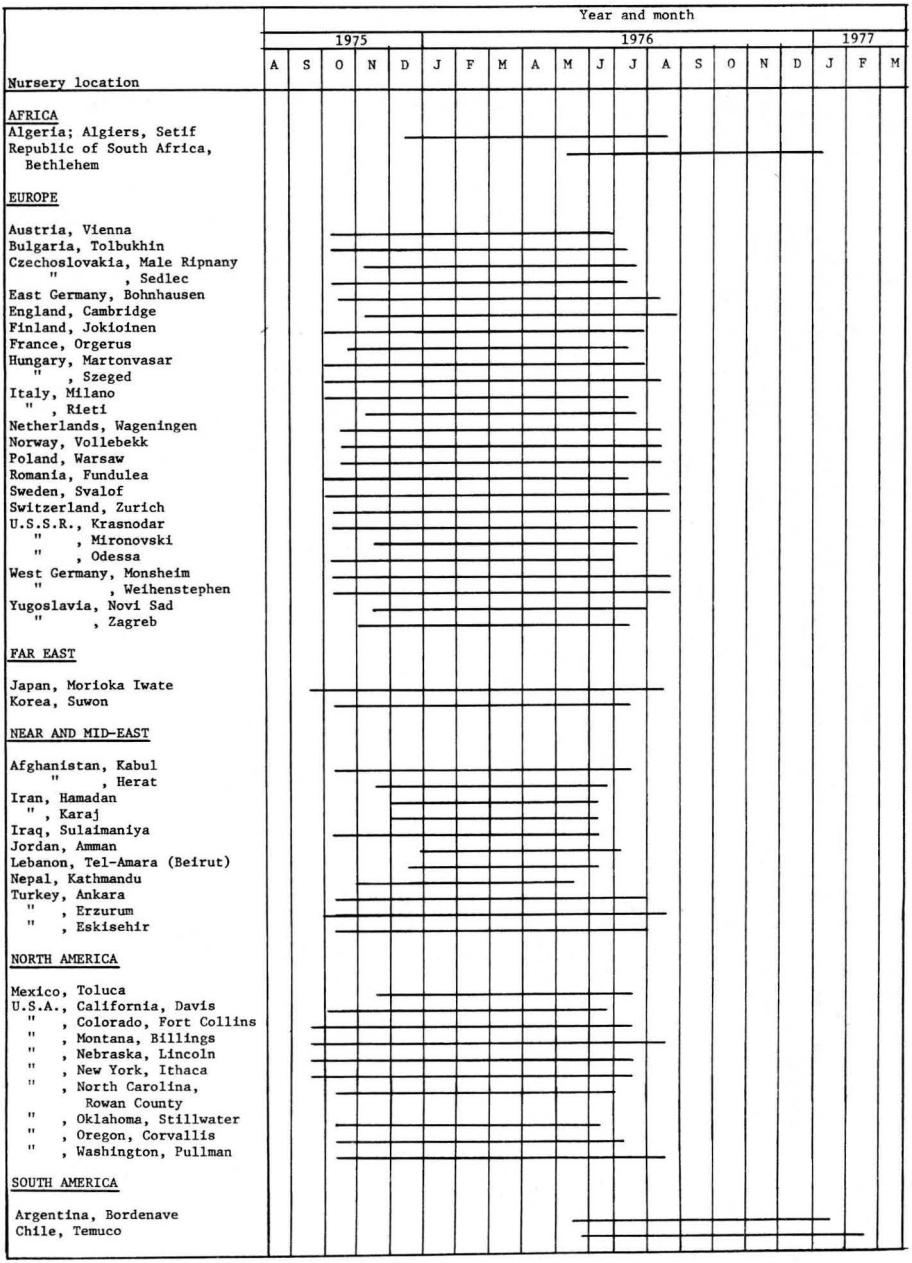

Table 4. Summary over years and locations of cooperators who have grown and reported data from International Winter Wheat Performance Nurseries.

Country	Station	Nursery number and year							
		1 1969	2 1970	3 1971	4 1972	5 1973	6 1974	7 1975	8 1976
Afghanistan	Herat								X
"	Kabul	X	X	X	X	X	X	X	X
"	Kunduz				X	X	X		
"	Mazar-i-sharif		X	X					
Algeria	Setif	X	X	X	X				X
Argentina	Balcarce			X	X	X	X	X	
"	Bordenave	X	XX[a/]	X	X	X	X	X	X
"	Peragamino	X							
Austria	Vienna		X	X	X	X	X	X	X
Brazil	Pelotas		X	X	X	X			
Bulgaria	Tolbukhin		X	X	X	X	X	X	X
Canada	Prince Edward Island								X
Chile	Chillan					X		X	
"	Temuco	X	X	X	X	X	X	X	X
Czechoslovakia	Male Ripnany				X	X		X	X
"	Sedlec				X	X		X	X
East Germany	Bohnshausen								X
England	Cambridge		X	X	X	X	X	X	X
Finland	Jokioinen		X	X	X	X	X	X	X
France	Orgerus					X	X		X
"	Versailles	X							
Hungary	Martonvasar		X	X	X	X	X	X	X
"	Szeged				X	X	X	X	X
India	Shalimar		X	X	X	X			
"	Simla			X	X	X	X	X	
"	Damodar		X						
Iran	Hamadan				X	X	X	X	X
"	Karaj	X	X	X	X	X	X	X	X
"	Kermanshah	X							
"	Mashad		X	X					
Iraq	Sulaimaniya	X	X	X	X	X	X	X	X
Italy	Florence					X			
"	Milano	X	X	X	X	X	X	X	X
"	Rieti	X	X	X	X	X	X		X
Japan	Morioka Iwate			X	X	X	X	X	X
"	Sapporo	X	X						
Jordan	Amman	X				X		X	X

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

Country	Station	Nursery number and year							
		1 1969	2 1970	3 1971	4 1972	5 1973	6 1974	7 1975	8 1976
Korea	Suwon		X	X	X	X	X	X	X
Lebanon	Beirut (Tel-Amara)					X	X	X	X
Mexico	Toluca				XX[a]	X	XX[a]	X	X
Nepal	Kathmandu						X	X	X
Netherlands	Wageningen	X	X	X	X	X	X	X	X
Norway	Vollebekk								X
Pakistan	Islamabad					X			
Poland	Warsaw					X	X	X	X
Romania	Fundulea	X	X	X	X	X	X	X	X
South Africa, Republic of	Bethlehem						X	X	XX[a]
Spain	Logrono						X		
Sweden	Svalof	X	X	X	X	X	X	X	X
Switzerland	Zurich		X	X	X	X	X	X	X
Turkey	Ankara	X	X	X	X	X	X	X	X
"	Erzurum					X	X	X	X
"	Eskisehir	X	X	X	X	X	X	X	X
United States	California, Davis	X	X	X			X	X	X
"	Colorado, Akron						X		
"	Colorado, Fort Collins		X	X	X	X	X	X	X
"	Montana, Billings								X
"	Nebraska, Lincoln	X	X	X	X	X	X	X	X
"	New York, Ithaca		X	X	X	X	X	X	X
"	North Carolina, Rowan Co.	X	X	X	X	X	X	X	X
"	Oklahoma, Stillwater	X	X	X	X	X	X	X	X
"	Oregon, Corvallis				X	X	X	X	X
"	Washington, Pullman		X	X	X	X	X	X	X
USSR	Krasnodar				X	X	X	X	X
"	Mironovski								X
"	Odessa							X	X
West Germany	Monsheim		X	X	X	X	X	X	X
"	Weihenstephan		X	X	X	X	X	X	X
Yugoslavia	Novi Sad	X	X	X	X	X	X	X	X
"	Zagreb		X	X	X	X	X	X	X
	Total	23	38	38	44	50	48	47	54

[a] Two nurseries were grown in the same growing season.

respectively. Fertilizer rates applied by those cooperators using it were 103.3, 123.8 and 104.9 kg/ha of N, P_2O_5 and K_2O respectively, on the average.

Diseases reported included (stem rust) *Puccinia graminis tritici,* (leaf rust) *Puccinia recondita,* (yellow rust) *Puccinia striiformis,* (powdery mildew) *Erysiphe* sp., and *Septoria* sp. Other hazards or problems identified by cooperators included weeds, bird damage, and insect damage (armyworms, aphids, etc.), which are reported with individual nursery site information.

DATA SUMMARIZATION AND STATISTICAL TREATMENT

Data were reported by cooperators and the Nebraska Wheat Quality Laboratory as follows:

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

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

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

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

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

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

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

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

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

Grain protein: Seed samples received from cooperators were analyzed for protein by the Kjeldahl Method. Unit of measurement = percent on a dry weight moisture basis.

Seed grade: 1 = very good, 9 = very poor. Seed was graded on seed samples returned to the University of Nebraska Wheat Quality Laboratory.

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

Analyses of variance were completed on all 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. For those locations reporting data for local cultivars not included in the IWWPN, mean values for each trait are reported. Correlation coefficients between all traits at a site 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 Eighth 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 grain protein. The number of locations included in each analysis varied depending on the trait involved, but ranged from a low of 10 locations for frost damage to a high of 50 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 52 nursery locations also were computed.

In this report we again have regionalized the data for each trait from the IWWPN testing network into various geographical areas that exhibit similar edaphic and/or ecological condtiions. We have divided the winter wheat production areas of the world into six different regions as follows:

(1) **Northern Europe**—includes 11 countries and 13 sites as follows: Vienna, Austria; Male Ripnany and Sedlec, Czechoslovakia; Bohnshausen, East Germany; Cambridge, England; Jokioinen, Finland; Wageningen, Netherlands; Vollebekk, Norway; Warsaw, Poland; Svalof, Sweden; Zurich, Switzerland; Monsheim and Weihenstephan, West Germany.

(2) **Southern Europe**—includes 7 countries and 11 sites as follows: Tolbukhin, Bulgaria, Martonvasar and Szeged, Hungary; Milano and Rieti, Italy; Fundulea, Romania; Krasnodar and Odessa, U.S.S.R.; Novi Sad and Zagreb, Yugoslavia. Algiers, Algeria also was included in this region.

(3) **North America**—includes nine sites in the United States and one site in Mexico. The U.S. locations include Davis, California; Fort Collins, Colorado; Billings, Montana; Lincoln, Nebraska; Ithaca, New York; Rowan Co., North Carolina; Stillwater, Oklahoma; Corvallis, Oregon, and Pullman, Washington. The Mexico nursery was grown at Toluca.

(4) **Near and Middle East**—includes 11 locations in 7 countries as follows: Herat and Kubul, Afghanistan; Hamadan and Karaj, Iran; Sulaimaniya, Iraq; Amman, Jordan; Beirut (Tel-Amara), 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 Bordenave, Argentina; Temuco, Chile and two sites at Bethlehem, Republic of South Africa.

Regional analyses were made on data for traits from all 30 cultivars grown in the Eighth IWWPN in 1976. Variety means over all locations for each trait 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 within a region are listed with the tables. Yield as a percentage of Bezostaya 1 for each cultivar within a region also is presented.

Two-year variety yield means with rankings by region with accompanying statistics for 17 cultivars comparing the six geographic regions of the world are presented. Variety yield means over 39 locations from the six regions are listed.

Two-year means for each trait have been computed and ranked for each of 17 varieties at each of those locations reporting complete data in both years, 1975–1976. Means by trait for the 17 varieties within each location also are presented. Individual cultivar means also have been calculated by trait for each variety over all locations. Least significant differences (L.S.D.) and coefficients of variation are reported for the various traits analyzed.

RESULTS AND DISCUSSION

Yield and other agronomic, grain quality, and disease data are reported for individual Eighth International Winter Wheat Performance Nursery sites in Tables 5-57. Supplemental nursery management information also is given for each site adjacent to the nursery data table. Correlation coefficients for yield, protein, and other agronomic traits combined over 52 nursery sites are presented in Table 62.

Grain Yield

Fifty nursery sites reported complete yield data in 1976 (Table 58). This is five more than in 1975. Summary tables of average yields and yield rankings from all nursery sites are reported in Tables 58–59. Cultivar grand means expressed as a percent of Bezostaya 1 also are shown in Table 58. Summaries of yield, agronomic traits, and grain quality measurements for each cultivar combined over nursery sites reporting complete replications of data are presented in Table 60. Descriptive statistics including mean, standard deviation, low and high values, and coefficient of variation for each cultivar are given in Table 61.

Individual nursery yield means ranged from a low of 1.1 q/ha at Jokioinen, Finland to a high of 84.4 q/ha at Male Ripnany, Czecho-

slovakia. Eighteen nursery sites had mean yields between 21–40 q/ha and 23 sites were between 41–60 q/ha. Six nursery sites yielded less than 20 q/ha and three sites had mean yields greater than 60 q/ha. The grand yield mean over 50 locations was 40.5 q/ha. This is 1.2 q/ha higher than the 39.3 q/ha grand mean reported for 44 locations in the Seventh IWWPN.

Based on yield performance over 50 locations, the varieties Talent, Priboy, Probstdorfer Karat, Martonvasar 2, Blueboy, and F26-70 all yielded slightly more than Bezostaya 1 (Table 60). Grain yields of the above-mentioned varieties were 46.8, 46.2, 46.0, 45.8, 45.7, and 45.7 q/ha, respectively. Talent also was the highest yielding cultivar in the 1975 IWWPN based on 42 test sites. The check varieties, Blueboy from the United States and Bezostaya 1 from Russia, have maintained high yield levels since the nursery was started in 1969. Rashid was the lowest yielding variety with 27.1 q/ha.

The summary of yield rankings given in Table 59 provides an indication of the range of adaptation for each cultivar. The varieties Talent, Priboy, Probstdorfer Karat, Martonvasar 2, Blueboy, F26-70, and Bezostaya 1 ranked among the 10 highest yielding at 37, 42, 34, 33, 32, 34, and 24 sites, respectively among 50 reporting locations. Yield was significantly and positively correlated with test weight, 1000-kernel weight, plant height, and winter survival. Significant negative correlations occurred between yield vs. protein, lodging, ripening, and frost damage (Table 62).

On a regional basis none of the varieties had the highest mean yield at more than one region of the world (Tables 63–69). The variety Talent, which was the highest yielding on a worldwide basis, was not the top yielder in any one region. Talent had an identical record in the 1975 IWWPN. In Northern Europe, the varieties Maris Huntsman, Priboy and Probstdorfer Karat yielded 8.4, 7.0, and 3.5% more than Bezostaya 1. In Southern Europe, Priboy, Martonvasar 2, and Probstdorfer Karat all out-yielded Bezostaya 1 by 8%, respectively. The yield of Bezostaya 1 at North American sites was surpassed only slightly by GKF-2, Martonvasar 2, Talent, Martonvasar 3, and F26-70. Blueboy and Probstdorfer Karat yielded 7.6 and 1.0% more than Bezostaya 1 in the Southern Hemisphere. The varieties Blueboy and GKF-8001 had a yield advantage of 5.1 and 4.0% over Bezostaya 1 in the Near and Middle Eastern region. Six other varieties also were higher yielding than Bezostaya 1. In the Far East F26-70, Talent, Blueboy, Katakomi-Komugi, and Biserka yielded 19.9, 15.5, 14.1, 10.8 and 6.9% more than Bezostaya 1.

Table 84 contains regional two-year yield means and rankings for 17 cultivars grown in the 1975 and 1976 nurseries. Two-year yield means ranged from a high of 46.6 for Talent to a low of 25.8 q/ha for Rashid over 39 locations with a grand mean of 40.5 q/ha. Talent and Blueboy were the highest yielding varieties in the overall analysis

based on 39 sites in six different regions. Maris Huntsman was the highest yielding cultivar in Northern Europe with 61.3 q/ha. The highest yielding varieties in the other regions include Talent in Southern Europe and North America, Blueboy in the Southern Hemisphere and the Near and Middle East, Kitakomi-Komugi in the Far East. Varieties yielding more than Bezostaya 1 averaged over all six regions include Talent, and Blueboy. Two-year yield means and rankings by individual location from which regional analyses are based with appropriate statistics are given in Table 85.

Grain Protein

Protein data from individual locations from which 10-gram seed samples were returned to Nebraska are reported in Tables 5–57. Complete sets of seed samples were returned from 33 locations over which a combined statistical analysis was performed. Results of the protein analysis over locations are presented in Table 60.

Varieties exhibiting mean protein percentages higher than 15% include Sage, Lerma Rojo 64, Atlas 66, Bordenave Puan Sag, and Sentinel. WA 5829 had the lowest grain protein content of all cultivars with 12.4%. The grand protein mean was 14.2%. This is very close to the 14.3% grain protein value reported in the 1975 IWWPN across 35 sites.

Tables 63–68 contain grain protein means for the 30 cultivars from the regional analyses. The variety Atlas 66 had superior grain protein levels in the regions of Northern and Southern Europe, North America, and the Near and Middle East. Lerma Rojo 64 was higher in grain protein than Atlas 66 in the Southern Hemisphere and the Far East.

A correlation coefficient of $-.16^{**}$ between grain yield and grain protein was computed (Table 62). However, relationships between yield level and protein content varied widely among varieties. The following tabulation of cultivar means over nursery sites from Table 60 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.

Yield and protein of selected cultivars grown in the Eighth International Winter Wheat Performance Nursery in 1976.[a]

Cultivar	Yield		Protein	
	q/ha	rank	%	rank
Martonvasar 2	45.8	(4)	14.4	(12)
Martonvasar 3	45.1	(9)	14.5	(11)
Biserka	42.4	(12)	14.6	(10)
Sage	40.4	(19)	15.2	(5)
Sentinel	40.2	(20)	15.8	(2)
Atlas 66	33.3	(27)	16.6	(1)
Bordenave Puan Sag	36.5	(26)	15.8	(3)

[a] The grand means for yield and protein were 40.8 q/h and 14.2%, *respectively.*

Table 86 presents two-year cultivar means and rankings of 17 cultivars for grain protein content for 1975–1976 on an individual location basis. The grain protein advantage of Atlas 66 is evident from the means for each cultivar averaged over 25 sites. Other cultivars exhibiting elevated levels of grain protein include Sentinel, Rashid, TRS 237, and Lerma Rojo 64. Blueboy with 12.8% was lowest in grain protein. The grand mean for grain protein based on 17 varieties was 14.5%. Individual location two-year means ranged from 12.0% at Karaj, Iran to 17.0% at Toluca, Mexico.

Supplementary data concerning grain protein, milling and baking, and other grain quality characteristics are presented in Tables 75–77 from Cambridge, England; Svalof, Sweden, and Krasnodar, USSR, respectively.

Test Weight

Individual location test weight data are presented in Tables 5–57. Test weight cultivar means averaged over 19 locations are listed in Table 60. The grand mean for test weight was 77.2 kg/hl. This is 1.4 kg/ha more than the grand mean reported in 1975 for the Seventh IWWPN.

Cultivars having superior test weights include Probstdorfer Karat, Bordenave Puan Sag, Odesskaya 51, Priboy, Martonvasar 3, and Bezostaya 1. The varieties Maris Huntsman, Lely, and Maris Templar had the lowest test weight means.

Tables 63–68 contain cultivar test weight means from the regional analyses. Bordenave Puan Sag had the highest test weight in Southern Europe and the Southern Hemisphere. In the Near and Middle East and North America, Probstdorfer Karat had the highest test weights. Bezostaya 1 was superior in test weight in Northern Europe. Regional test weight means for Northern Europe, Southern Europe, North America, Southern Hemisphere, and the Near and Middle East were 77.4, 79.2, 75.4, 74.0, and 77.9, kg/hl, respectively. Data for test weight from the Far East (Japan and Korea, Tables 25, 27), although incomplete, averaged 77.1 kg/hl.

Correlation coefficients between test weight and 1000-kernel weight, protein, plant height, lodging, flowering, and ripening were .33**, .24**, –.09**, .14**, –.19**, –.22**, respectively (Table 62).

Two-year test weight means and rankings for 17 varieties grown in 1975–1976 are compared in Table 87. The grand mean over 14 sites was 75.9 kg/hl. The cultivars Bezostaya 1, Martonvasar 2, Dunav-1, and Sentinel had the highest overall test weight means of 79.3, 78.3, 77.9, and 77.9 kg/hl, respectively. Maris Huntsman, Kormoran, and Maris Templar had the lowest test weight means among the cultivars compared.

1000-Kernel Weight

Nineteen sites reported data for 1000-kernel weight (Table 60).

The grand mean was 37.1 grams. Cultivar means ranged from a high of 43.4 grams for Martonvasar 2 to a low of 28.8 grams for NE 68719. Cultivars in addition to Martonvasar 2 that were high in 1000-kernel weight include Priboy, Martonvasar 3, Bezostaya 1, and Maris Templar. The varieties Priboy, Bezostaya 1, and Martonvasar 3 also were high in test weight. The association between these two traits obtained for these varieties explains in part the overall positive correlation (Table 62).

A correlation coefficient of .33** was calculated for the relationship between 1000-kernel weight and test weight. However, even though there was a positive association between these traits there were some varieties having high 1000-kernel weights that did not have high test weights and vice versa. For example, Maris Huntsman and Maris Templar, varieties from England, were relatively high in 1000-kernel weight but low in test weight. In contrast, Sentinel and Bordenave Puan Sag were low in 1000-kernel weight but high in test weight.

Only four regions had two years of data for 1000-kernel weight. The grand means for Northern Europe, Southern Europe, Southern Hemisphere and the Near and Middle East were 37.6, 38.0, 35.2, and 35.9 grams, respectively (Tables 63, 64, 66, 67). In Northern Europe, Southern Europe, Southern Hemisphere, and the Near and Middle East the varieties having the highest 1000-kernel weights were Maris Templar, Priboy, Martonvasar 2, and Martonvasar 3.

Table 88 contains two-year 1000-kernel weight means averaged over five locations. Of the 17 varieties compared, Bezostaya 1, Martonvasar 2, and Maris Templar had the heaviest 1000-kernel weights and Talent and Lely the lightest. The grand mean for weight of 1000-kernels was 37.5 grams.

Plant Height and Lodging

Individual location data from those cooperators returning information for these two traits are reported in Tables 5–57. The grand means for plant height and lodging were 92.5 cm and 18.8% based on 39 and 26 sites, respectively (Table 60). The averages for these two traits are both less than the 1975 IWWPN.

A positive association between plant height and lodging was obtained in the 1976 IWWPN as was the case in previous years. A correlation coefficient of .28** (Table 62) between these two traits was computed. Four each of the tallest and shortest cultivars with their associative lodging ranks are given at top of next page.

Probstdorfer Karat is an example of a tall cultivar with relatively little lodging. It was also the third highest yielding cultivar in the nursery. The short varieties Biserka, GKF-8001, and Dunav-1 ranked 12th, 13th, and 15th in yield, respectively.

Talent, the highest yielding variety in the Eighth IWWPN, had

Cultivar	Height		Lodging	
	cm	rank	%	rank
Atlas 66	113.4	(30)	28.7	(24)
TRS 237	108.9	(29)	24.9	(21)
Probstdorfer Karat	108.0	(28)	12.5	(14)
Bordenave Puan Sag	106.2	(27)	55.8	(29)
Biserka	79.3	(4)	6.0	(5)
Dunav-1	78.6	(3)	5.7	(4)
WA 5829	78.6	(2)	15.3	(17)
GKF-8001	67.6	(1)	1.1	(1)

a mean height of 80.2 cm. It also was the highest yielding variety in the Seventh IWWPN with exactly the same plant height mean. Other high yielding varieties including Priboy, Martonvasar 2, Blueboy, F26-70, and Bezostaya 1 were generally between 92–100 cm tall. Rashid, with a mean plant height of 102.9 cm, ranked 30th in lodging and also was the lowest yielding cultivar in the nursery.

Varieties tended to be taller in North America than in the other regions (Tables 63–67). Plant height means were the lowest in the Near and Middle East. Regional plant height means were 95.9, 95.8, 95.8, 92.5, and 84.0 for North America, Southern Europe, Southern Hemisphere, Northern Europe, and the Near and Middle East. The relative heights of cultivars across regions remained fairly consistent.

Regional plant lodging means ranged from 3.9% in the Near and Middle East (Table 67) to 35.8% in Southern Europe (Table 64). Lodging means in the other regions were 12.2, 20.6, and 8.0% for Northern Europe, North America, and the Southern Hemisphere, respectively (Tables 63, 65, 66). In the Far East, no lodging occurred in Japan and only a slight lodging problem was noted in Korea (Table 27).

Two-year means for plant height and lodging for 1975–1976 are presented in Tables 89 and 90. Of the 17 varieties compared, the five tallest were Atlas 66, TRS 237, Rashid, Blueboy, and Maris Huntsman. Two of these varieties including Rashid and Atlas 66 also had the highest lodging scores. Dunav-1 and Biserka were the shortest cultivars over the two-year period. On an individual location basis averaged over two years, cultivars were shortest at Jokioinen, Finland and tallest at Corvallis, Oregon, U.S.A.

Winter Survival

Differential readings for winter survival were reported from 25 sites (Tables 5–57) with a grand mean of 75.7% (Table 60). Locations at which there was 100% survival of all entries were not included in this analysis. Individual nursery winter survival percentages were the lowest at Jokioinen, Finland; Vollebekk, Norway; Lincoln, Nebraska, U.S.A., and Tolbukhin, Bulgaria with 25.8, 37.3, 47.7, and 48.2%, respectively (Tables 16, 32, 45, 10). Cultivar winter survival means averaged over 25 sites ranged from a high of 91.6% for Probstdorfer

Karat to a low of 26.2% for Galiafen, which is a mild winter type. Two spring varieties Rashid and Lerma Rojo 64, averaged 36.8 and 32.3% winter survival. Other cultivars exhibiting high winter survival percentages besides Probstdorfer Karat include Oasis, Sentinel, Sage, Bezostaya 1, and Odesskaya 51. The correlation coefficient between yield and winter survival of .53** (Table 62) indicates the importance of the latter trait in international winter wheat performance.

Regional grand means for winter survival for Northern Europe, Southern Europe, North America, Near and Middle East, and the Far East were 66.1, 81.0, 77.2, 87.3, and 87.3%, respectively (Tables 63–65, 67–68). No winter-kill occurred in the Southern Hemisphere. The most winterkill occurred at Jokioinen, Finland and the least at Zagreb, Yugoslavia of those sites reporting differential winter survival data. In Northern Europe, Oasis had the highest survival percentage of 86. Bezostaya 1 with 97% survived the best in Southern Europe. In North America, Probstdorfer Karat had the best survival of 98%. In the Near and Middle East two varieties, Martonvasar 2 and Bezostaya 1, survived equally well with a percentage of 94.

Winter survival means of 17 cultivars analyzed over 11 locations for the two-year period 1975–1976 are compared in Table 91. The cultivars Sentinel, Martonvasar 2 and Bezostaya 1, had winter survival means of 92.0, 91.0, and 90.1%, respectively. Lerma Rojo 64, a spring type, had a mean survival of 42.9%. The grand mean for winter survival was 79.3%.

Data provided by researchers at Michigan State University for winterhardiness of 8th IWWPN cultivars are presented in Table 96 and Figure 4. We express our sincere appreciation to Drs. E. Everson, C. Olien, and B. Marchette for their experimental results.

Frost Damage

Frost damage data were reported from 10 locations and the combined analysis results are presented in Table 60. Reported on a scale of 0–9, the grand mean of cultivars was 2.9. The incidence of frost damage was the highest on the varieties Lerma Rojo 64, Galiafen, Rashid, Flavio, and Atlas 66. Frost damage was lowest on the varieties WA 5829, Sentinel, Probstdorfer Karat, Sage, and NE 68719. With the exception of Galiafen and Atlas 66 which ranked 19 and 22 in days to flowering, the amount of frost damage could be related to cultivar earliness. Early spring frosts at some locations may be injuring the earlier types that have headed whereas the later cultivars at a later stage of growth may be less affected.

Individual location means for frost damage ranged from 1.1 at North Carolina, U.S.A. (Table 47) to 5.3 at Eskisehir, Turkey (Table 41). Nursery frost damage means for Male Ripnany, Czechoslovakia; Bohnshausen, East Germany; Hamadan and Karaj, Iran; Morioka, Japan; Fundulea, Romania; Weihenstephan, West Germany, and

Krasnodar, USSR were 2.1, 3.0, 3.0, 1.5, 3.4, 3.9, 2.1, and 3.7, respectively (Tables 12, 14, 20, 21, 25, 34, 55, 51).

Fundulea, Romania and Eskisehir, Turkey were the only two locations reporting frost damage data for both 1975 and 1976 (Table 95). Tho two-year nursery frost damage mean over 17 cultivars was 4.1. The cultivars Sentinel and Kormoran showed the least amount of frost damage and the spring types Rashid and Lerma Rojo 64 had the highest scores.

Maturity

Individual location data both for days to flowering and days to ripening are given in Tables 5–57. Flowering data for cultivars analyzed over 38 sites are summarized in Table 60. Lerma Rojo 64, a spring cultivar, was the earliest in days to flowering at 151.0 days after January 1. Other early flowering varieties include Rashid, Biserka, Kitakomi-Komugi, and Flavio. The latest variety to reach flowering was Lely which required 171.0 days. Other late flowering varieties include Probstdorfer Karat, Maris Templar, Maris Huntsman, and Kormoran. The grand mean for days to flowering, which is 0.4 days earlier than the 1975 IWWPN, was 159.4 days.

Table 60 contains ripening data averaged over 28 locations. In general, the varieties that flowered earliest also ripened the earliest. The earliest maturing variety, Lerma Rojo 64, had a grain filling period of 43.5 days. Lely, the latest maturing variety, had only 39.9 days to fill its grain. The highest yielding variety, Talent, had a grain filling period of 43.2 days. The grand mean for days to ripening was 202.0 days.

The maturity data tabulated below for days to flowering and days to ripening was extracted from the regional Tables 63–68. The varieties Flavio, Sentinel, F26-70, Oasis, Biserka, Bolal, Kitakomi-Komugi, Dunav-1, and GKF-2 were the earliest in days to flowering and days to ripening in one or more of the regions. Lely, Maris Templar, or Maris Huntsman was the latest maturing in all regions. Grand means for days to flowering by region were 155.4, 147.8, 154.9, 294.6, 149.6, and 151.5 for Northern Europe, Southern Europe, North America, Southern Hemisphere, Near and Middle East, and the Far East. The earliest varieties to reach the flowering stage tended also to reach ripening with the same relative ranks. The grand mean of 294.6 days to ripening for the Southern Hemisphere results from their wheat being planted approximately six months later than at sites in the Northern Hemisphere.

Two-year means for flowering and ripening of 17 cultivars from 1975–1976 are reported in Tables 92–93. Based on 30 locations, the earliest cultivar Lerma Rojo 64 needed 148.9 days to reach flowering while Lely, the latest cultivar required 170.3 days. The grand mean for days to flowering over 30 locations was 158.7 days. Lerma Rojo 64

and Biserka were the two earliest cultivars to ripen, Lely and Maris Templar were the latest varieties to ripen. The grand mean for days to ripening was 207.5 days.

Maturity characterization by wheat producing regions of the world of early and late winter cultivars grown in the Eighth International Winter Wheat Performance Nursery in 1976.[a]

Region	Days from January 1			
	Earliest variety		Latest variety	
Northern Europe				
Flowering	Biserka, Kitakomi-Komugi	(150)	Lely	(164)
Ripening	GKF-2, Dunav-1, Biserka	(191)	Maris Templar	(201)
Southern Europe				
Flowering	Sentinel	(144)	Lely	(152)
Ripening	Biserka	(188)	Maris Templar	(198)
North America				
Flowering	Biserka	(146)	Lely	(172)
Ripening	.....	.....	.....	.....
Southern Hemisphere[b]				
Flowering	Flavio, Biserka	(285)	Lely	(321)
Ripening	Flavio	(331)	Maris Templar, Lely	(360)
Near and Middle East				
Flowering	Flavio	(144)	Lely	(159)
Ripening	Flavio	(179)	Lely	(195)
Far East				
Flowering	Kitakomi-Komugi	(147)	Lely	(160)
Ripening	F26-70, Talent, Biserka, Oasis	(183)	Lely	(196)

[a] The spring cultivars Rashid and Lerma Rojo 64 were not considered here.

[b] 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

Ten sites reported complete sets of shattering data in 1976 (Tables 5–57). The grand mean for shattering reported in Table 60 was 9.0%. Shattering means of individual varieties ranged from 3.7% for Bezostaya 1 to 18.5% for Kitakomi-Komugi. Nursery site shattering means ranged from 0.8% at Eskisehir, Turkey (Table 41) to 18.1% at Erzurum, Turkey (Table 40).

Two-year shattering means and rankings for 17 cultivars across seven sites are presented in Table 94. Nursery means ranged from a low of 0.6% at Eskisehir, Turkey to a high of 13.2% at Wageningen, Netherlands. The grand mean was 5.9%. The cultivars having the highest and lowest shattering percentages were Kitakomi-Komugi with 17.2 and Bezostaya 1 with 3.2.

Diseases

Data reported for the three rusts including yellow or stripe *(Puccinia striiformis)*, stem *(Puccinia graminis* f. sp. *tritici)* and leaf *(Puccinia recondita)* from all locations are summarized in Tables 70–72. Cultivar mean severity readings and high scores for each disease across locations also are reported. Individual location disease severity and response readings also are given (Tables 5–57).

Disease severity means for yellow rust averaged over 12 sites ranged from 1% for both Maris Huntsman and Maris Templar to 28% for Oasis. The highest yellow rust severity reading of 99% was recorded for the varieties Oasis and Rashid. The nursery sites reporting the highest incidence of yellow rust include Bordenave, Argentina; Temuco, Chile; Billings, Montana, and Corvallis, Oregon (Tables 8, 11, 44, 49). Supplemental stripe rust data from the Netherlands are reported in Table 82.

Stem rust data are reported from 18 locations in Table 71. Stem rust means ranged from 0% for Oasis to 53% for both Lely and Blueboy. Both Rashid and Blueboy had high scores for stem rust of 99%. The highest score reported for Oasis was 39%, which indicates some level of resistance in this variety to several races of stem rust.

Data for leaf rust are summarized in Table 72 across 18 locations. Mean severity percentages ranged from a low of 2 for Oasis to 43 for Rashid. Maris Templar, Flavio, GKF-2, Rashid, Martonvasar 3, Odesskaya 51, WA 5829, NE 68719, and Blueboy were the most susceptible, having infection percentages of 99% at one or more sites. Oasis was the most resistant, the highest percentage being only 10%.

Complete data for disease reaction of Eighth IWWPN cultivars to the three rusts over reporting locations from the RDISN are not available for this report. However, data for 17 cultivars presently in the Eighth IWWPN are available in the final report of the 1975 IWWPN (University of Nebraska Research Bulletin, 281). The Regional Disease and Insect Screening Nursery (RDISN) is coordinated by Dr. E. E. Saari and Dr. J. P. Srivastava from Cairo, Egypt. It provides an excellent vehicle for early evaluation of cultivars in known disease "hot spots" in several countries.

Disease data for powdery mildew *(Erysiphe graminis)* from 18 locations are reported in Table 73. Data from 10 sites are presented on a percentage basis while a scale of 0–8 was used by eight locations. Maris Templar, Maris Huntsman, and Oasis showed the most resistance to mildew using either scale of reporting. High scores of 99% were recorded for Lerma Rojo 64, WA 5829, NE 68719, and Blueboy. Mildew incidence was high at Vienna, Austria; Sedlec, Czechoslovakia; Bohnshausen, East Germany; Cambridge, England; Martonvasar, Hungary, and Warsaw, Poland. Mildew readings from an observation planting at Wageningen, Netherlands are presented in Table 82.

Septoria spp. data were reported from 10 locations (Table 74). All varieties appeared vulnerable to this disease. The severity of *Septoria* appeared to be related to variety maturity with the earliest varieties having the highest readings and the later varieties the lowest.

Insects

Dr. Robert Gallun, Purdue University-USDA entomologist, provided data from Hessian Fly *(Phytophaga destructor)* test of Eighth IWWPN cultivars (Table 83).

Evaluation of the Freezing Hardiness of the Eighth International Winter Wheat Performance Nursery, 1976[1]

The degree of winterhardiness or cold tolerance required in each country of the temperate zone of the world where wheat is grown depends on the minimum soil temperature of the region and the soil water content when that temperature is reached. Morphological characters such as decumbent seedling growth and depth of crown in the soil are characters which probably evolved to protect the seedling against wind dessication.

The winterhardiness of the thirty cultivars in the Eighth International Winter Wheat Performance trial and five cultivars (Genesee, Winoka, Kharkov MC22, Arrow, and Fredrick) used as checks was evaluated using methods described by Gullord *et al.*, 1975 (Table 96).

The crown is the most critical part of the winter wheat plant since destruction of these tissues results in death of the plant. The lower peripheral crown meristem from which new roots arise is less resistant to freezing stress than the apical crown meristem and, therefore, limits plant survival. The material was tested under high intensity freezing conditions (crowns were surrounded by free moisture in a sponge during freezing) at –12° and –17°C.

The crowns were visually rated for lower peripheral meristem damage on a 0 (dead) to 5 (undamaged) scale, a condition based on development of new roots. It will be noted, that, in general, the varieties from countries with warm climates (higher minimum soil temperatures in winter) have lower levels of winterhardiness than varieties grown in countries with continental climates (Figure 3).

The 18 replication test at –17°C demonstrated that a number of varieties have genes which protect against low soil temperatures.

LD_{50} temperatures (temperature at which 50% of the population is killed) were not calculated for the cultivars in this study because they are costly to obtain. Previous studies have demonstrated that the cultivars with low levels of hardiness kill at temperatures nearer the freezing point of water than those with high levels of winterhardiness.

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[1] Data provided by Drs. E. H. Everson, C. R. Olien, and Bernard Marchetti by Michigan State University, East Lansing, Michigan.

AFGHANISTAN

HERAT

COOPERATOR(S): A. B. Afzali; L. Mohammed.

DATE OF PLANTING (EFFECTIVE GERMINATION): November 13, 1975.

PRECIPITATION DURING CYCLE OF TEST: 206.7 mm.

AMOUNT OF IRRIGATION APPLIED: 4 applications (amounts not reported).

FERTILIZER USED: N = 120 kg/ha; P_2O_5 = 137 kg/ha; K_2O = 48 kg/ha (Urea; Diammonium Phosphate; Muriate of Potash).

GENERAL DESCRIPTION OF CLIMATIC CONDITIONS DURING TEST: A seasonal wind was experienced from June to September.

DISEASE DEVELOPMENT: Leaf rust (Puccinia recondita) and stem rust (P. graminis tritici) infections were heavy on some lines. Stripe rust (P. striiformis) was also reported.

INSECT, WEED OR PEST PROBLEMS: No serious damage occurred.

DATE OF HARVEST: June 7-16, 1976.

AREA HARVESTED FOR YIELD: 2.4 square meters.

DATES WHEN DIFFERENT NOTES WERE TAKEN:
Diseases (except on entries 1, 2 and 9) - May 22, 1976.
Diseases (entries 1, 2, and 9) - June 4, 1976.
Height - June 7-16, 1976.
Lodging - June 7-16, 1976.
Shattering - July 1, 1976.

Correlation Coefficients

No. of observations=120	Yield	Test weight	1000-kernel weight	Protein	Plant height	Lodging	Flowering	Ripening	Shattering
Test weight	.66**								
1000-kernel weight	.67**	.80**							
Protein	.23**	.55**	.52**						
Plant height	-.31**	.09	-.03	.37**					
Lodging	-.31**	.17	-.001	.28**	.37**				
Flowering	-.51**	-.56**	-.46**	-.02	.19*	-.18*			
Ripening	-.50**	-.59**	-.48**	.04	.21*	-.08	.76**		
Shattering	-.06	.01	.04	.33**	.31**	-.09	.20*	.16	
Winter survival	-.04	-.06	-.07	-.18*	-.03	.02	-.20*	-.23*	.08

** Significant at the 1% level.

* Significant at the 5% level

Table 5. Agronomic, grain quality and disease data for the 30 cultivars in the Eighth International Winter Wheat Performance Nursery grown at Herat, Afghanistan in 1976.

Cultivars	Yield q/ha	Test weight kg/hl	1000-kernel weight g	Protein %	Plant height cm	Lodging %	Date of Flowering (days from Jan. 1)	Date of Ripening (days from Jan. 1)	Shattering %	Winter survival %	Frost damage 0-9	Rust Stripe sev. %	Rust Leaf sev. %	Rust Stem sev. %	Seed grade 1-9
Talent	57.6	78.2	30.0	14.0	90	0	123	160	66	95	1	0	0	0	5
Flavio	53.6	80.3	34.8	12.0	91	0	116	152	16	97	1	0	5	5	4
GKF-8001	50.9	81.2	34.6	12.8	66	0	124	160	6	95	1	0	0	0	4
Martonvasar 2	50.2	82.2	45.0	14.3	99	0	123	157	33	96	2	0	0	0	3
Martonvasar 3	50.1	80.8	40.3	15.1	95	1	123	158	36	95	0	0	0	0	3
Dunav-1	49.2	79.9	33.9	13.7	93	0	118	158	29	94	1	0	0	0	4
Probstdorfer Karat	48.7	81.6	32.3	14.6	126	0	132	165	28	94	1	0	0	0	4
Biserka	47.9	78.7	32.6	13.6	90	0	126	155	33	95	1	0	0	0	4
Odesskaya 51	47.4	83.3	33.1	13.5	100	3	124	158	21	93	1	0	20	11	3
Sentinel	46.0	82.6	38.6	13.1	93	9	114	156	3	97	0	0	0	0	3
Bezostaya 1	45.6	81.3	40.5	14.4	105	2	123	160	6	95	2	0	0	0	3
GKF-2	44.1	76.8	32.6	11.8	85	0	119	158	4	95	1	0	46	67	4
F26-70	43.7	78.2	28.8	10.4	99	0	119	154	6	96	2	13	42	75	4
TRS 237	42.2	78.5	36.5	14.4	125	19	121	161	43	94	1	0	6	0	3
Galiafen	40.4	76.6	31.8	14.7	105	1	125	165	89	94	1	0	0	0	4
Kitakomi-Komugi	39.4	72.5	22.8	10.4	95	1	118	158	10	95	1	10	36	89	6
Sentinel	38.8	80.5	33.5	15.0	105	5	127	161	28	90	2	0	0	0	3
Priboy	36.0	78.0	31.3	11.8	106	16	124	160	15	95	1	6	28	46	4
Oasis	35.1	81.2	34.3	14.2	105	25	124	158	97	94	1	0	0	0	4
Sage	35.1	81.4	30.8	14.9	125	46	127	160	18	92	2	0	0	0	3
NE 68719	33.0	72.9	17.0	11.2	99	0	129	162	10	94	1	5	36	36	8
Blueboy	31.8	69.3	25.0	9.7	105	3	123	159	10	96	0	12	46	58	5
Kormoran	29.9	71.2	27.9	12.2	99	0	134	165	58	94	1	0	25	42	5
Rashid	29.5	78.0	29.0	12.9	108	97	117	158	0	95	1	6	32	99	4
Bordenave Puan Sag	28.9	80.3	29.4	15.1	121	60	127	161	19	97	1	0	0	1	3
Atlas 66	28.1	78.7	28.0	16.3	130	15	126	160	83	97	1	0	0	0	5
Maris Huntsman	23.5	64.3	24.0	11.0	103	0	136	164	18	92	3	7	40	58	7
Lely	22.9	61.8	17.8	12.7	96	0	139	172	10	94	1	2	58	90	9
Maris Templar	22.7	64.0	21.4	11.6	110	0	137	164	83	97	1	7	25	36	7
WA 5829	17.2	60.8	11.5	9.8	96	0	130	163	24	97	1	10	18	48	9
Mean	38.9	76.5	30.3	13.0	102.1	10.1	124.8	159.9	30.0	94.6	1.0	2.6	15.4	25.4	4.6
L.S.D. of cultivar means (.05)	8.9	3.3	3.2	1.0	7.5	14.2	4.1	1.2	20.4	2.2	0.6	-	-	-	0.2
Coefficient of variation (%)	16.2	3.1	7.5	5.4	5.3	100.2	2.3	0.5	48.4	1.6	47.2	-	-	-	3.8

AFGHANISTAN

KABUL

COOPERATOR(S): A. Qaume; M. Osmanzai.

DATE OF PLANTING (EFFECTIVE GERMINATION): October 21, 1975.

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; K_2O = 40 kg/ha (Urea, Diammonium Phosphate, and Potassium Chloride respectively).

GENERAL DESCRIPTION OF CLIMATIC CONDITIONS DURING TEST: Slightly above average, in general.

DISEASE DEVELOPMENT: Moderate rust infection.

INSECT, WEED OR PEST PROBLEMS: Not reported.

DATE OF HARVEST: Not reported.

AREA HARVESTED FOR YIELD: 2.4 square meters.

DATES WHEN DIFFERENT NOTES WERE TAKEN: Not reported.

Correlation Coefficients

N= No. of observations	Yield	1000-kernel weight	Protein	Plant height	Lodging	Flowering
1000-kernel weight	.58**					
N	30					
Protein	-.14	-.12				
N	120	30				
Plant height	.17	.22	.36**			
N	60	30	60			
Lodging	.13	.03	.04	.13		
N	120	30	120	60		
Flowering	-.46**	-.35	.10	-.01	-.14	
N	120	30	120	60	120	
Winter survival	.13	.11	-.08	.07	-.07	.04
N	120	30	120	60	120	120

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

Table 6. Agronomic and grain quality data for the 30 cultivars in the Eighth International Winter Wheat Performance Nursery grown at Kabul, Afghanistan in 1976.

Cultivars	Yield q/ha	1000-kernel[a] weight g	Protein %	Plant[b] height cm	Lodging %	Date of flowering :days from Jan.1:	Winter survival %	Seed grade 1-9
Martonvasar 2	67.6	46	15.1	93	0	149	89	2
GKF-8001	66.9	36	12.9	64	0	155	88	3
GKF-2	65.0	40	12.8	79	0	149	89	2
Probstdorfer Karat	62.3	38	14.7	115	0	156	93	3
Bezostaya 1	61.3	40	14.8	90	0	149	94	1
Martonvasar 3	60.7	44	15.1	91	0	149	86	2
Sentinel	60.5	30	15.7	100	0	151	83	2
Talent	59.7	34	13.4	80	0	151	83	5
Flavio	59.5	34	12.6	83	0	149	80	3
Blueboy	59.4	32	11.8	94	0	152	90	4
Lerma Rojo 64	59.0	38	14.1	93	3	144	90	3
Priboy	58.7	40	12.6	95	0	151	80	4
Sage	58.6	38	14.7	105	0	150	88	2
Rashid	57.7	40	14.5	108	20	146	86	2
Biserka	56.9	32	14.0	82	0	149	88	3
Oasis	56.5	42	13.7	89	0	149	89	3
Bordenave Puan Sag	56.5	34	14.2	118	8	151	90	2
Dunav-1	56.3	32	14.3	77	0	149	83	3
Kitakomi-Komugi	56.3	34	12.0	78	8	148	81	5
Odesskaya 51	54.9	40	13.1	91	0	150	80	2
Kormoran	51.2	34	14.2	95	0	157	86	5
Galiafen	51.1	34	14.0	95	0	153	78	4
Atlas 66	50.8	26	16.9	110	0	152	84	4
F26-70	50.1	38	13.8	90	0	149	91	2
TRS 237	49.7	38	14.9	110	0	149	84	2
Maris Huntsman	47.0	34	14.1	100	0	161	88	6
NE 68719	46.2	24	12.9	72	0	154	90	5
Maris Templar	42.8	40	14.3	90	0	161	93	6
WA 5829	42.0	30	13.2	70	0	157	89	5
Lely	37.0	24	15.6	90	0	165	85	6
Mean	55.4	35.5	14.0	91.4	1.3	151.8	86.4	3.3
L.S.D. of cultivar means (.05)	9.6	--	1.5	12.4	8.7	2.2	8.6	0.5
Coefficient of variation (%)	12.3	--	7.4	6.6	495.9	1.0	7.0	11.3

[a] One replication only.

[b] Two replications only.

ALGERIA

ALGIERS

COOPERATOR(S): L. Hachemi; G. Varughese.

DATE OF PLANTING (EFFECTIVE GERMINATION): December 9, 1975.

PRECIPITATION DURING CYCLE OF TEST: 400 mm.

AMOUNT OF IRRIGATION APPLIED: None.

FERTILIZER USED: N = 60 kg/ha; P_2O_5 = 137 kg/ha.

GENERAL DESCRIPTION OF CLIMATIC CONDITIONS DURING TEST: Conditions were good.

DISEASE DEVELOPMENT: Stem rust (Puccinia graminis tritici), leaf rust (P. recondita) and stripe rust (P. striiformis) were observed.

INSECT, WEED OR PEST PROBLEMS: Severe weed problem (Bromus sp.).

DATE OF HARVEST: August 5, 1976.

AREA HARVESTED FOR YIELD: 3 square meters.

DATES WHEN DIFFERENT NOTES WERE TAKEN:
Flowering date - May 6 to June 10, 1976.
Diseases - July.

Correlation Coefficients

No. of observations=120	Yield	Protein	Plant height	Lodging
Protein	-.01			
Plant height	-.08	.01		
Lodging	-.13	.44**	.16	
Flowering	-.36**	.03	-.02	-.16

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

Table 7. Agronomic, grain quality and disease data for the 30 cultivars in the Eighth International Winter Wheat Performance Nursery grown at Algiers, Algeria in 1976.

Cultivars	Yield q/ha	Protein %	Plant height cm	Lodging %	Date of flowering from Jan. 1	Rust[a/] Stripe sev. %	Stripe resp.	Leaf sev. %	Leaf resp.	Stem sev. %	Stem resp.	Seed grade 1-9
Flavio	27.9	11.8	113	0	142	0		0		10	MR	4
F26-70	20.4	12.4	103	0	143	0		0		70	MS-S	4
Biserka	19.2	14.3	115	38	144	0		0		0		4
Lerma Rojo 64	18.2	13.4	130	80	146	0		20	MR-MS	10	MS-S	4
Talent	17.6	13.9	114	15	147	0		0		30	MS	6
Probstdorfer Karat	17.1	12.6	108	30	151	0		0		0		4
Galiafen	16.4	14.7	95	13	147	0		0		30	MS	5
Dunav-1	16.2	13.2	106	0	153	0		0		20	MS	4
Martonvasar 3	16.0	12.2	110	23	146	0		0		0		4
GKF-8001	15.6	14.2	114	8	144	0		0		40	MS-S	5
Bezostaya 1	15.5	13.1	111	58	142	30	MS-S	10	MR	40	MS	3
GKF-2	15.0	11.7	111	0	145	0		0		0		4
Kormoran	14.9	14.2	106	45	153	0		20	MR-MS	40	MS	6
Sage	14.2	14.5	103	90	144	0		0		0		3
Sentinel	13.8	14.0	130	63	142	0		0		0		3
Blueboy	13.8	10.8	106	8	148	0		0		60	MS-S	6
NE 68719	13.5	13.9	114	0	148	0		0		0		6
Kitakomi-Komugi	13.3	11.5	106	0	146	0		0		30	MS	6
TRS 237	13.1	14.4	115	80	143	60	MS	0		20	MS	4
Priboy	12.9	12.3	118	35	142	0		40	MS	20	MS-S	3
Odesskaya 51	12.6	13.4	105	58	145	0		0		0		4
Martonvasar 2	12.6	13.6	112	58	144	0		0		60	MS	3
Atlas 66	12.4	15.6	106	85	146	0		0		0		5
Bordenave Puan Sag	10.9	15.9	114	80	153	0		20	MR-MS	40	MS-S	4
Oasis	10.3	15.4	116	68	146	0		0		60	MS-S	5
Maris Huntsman	9.5	12.5	115	30	155	0		50	MR	30	MS	8
Rashid	7.9	14.4	111	85	145	10	MS	5	MR	30	MS	3
WA 5829	7.8	12.1	106	0	151	0		0		0		5
Maris Templar	7.0	12.9	116	13	155	70	MS	0		30	MS	8
Lely	5.7	14.1	122	23	154	0		10	MR-MS	20	MS	8
Mean	14.0	13.4	111.6	36.0	147.0	5.7		5.8		23.0		4.8
L.S.D. of cultivar means (.05)	6.3	1.8	24.0	40.3	0.8	-		-		-		0.7
Coefficient of variation (%)	31.7	9.5	15.3	79.7	0.4	-		-		-		10.7

[a/] One replication only.

ARGENTINA

BORDENAVE

COOPERATOR: S. E. Garbini.

DATE OF PLANTING (EFFECTIVE GERMINATION): May 24, 1976; Effective germination June 10, 1976.

PRECIPITATION DURING CYCLE OF TEST: 658.4 mm.

AMOUNT OF IRRIGATION APPLIED: None.

FERTILIZER USED: None.

GENERAL DESCRIPTION OF CLIMATIC CONDITIONS DURING TEST: Conditions were favorable during the winter. Drought occurred from September to October, but later rain was abundant to the end of the cycle.

DISEASE DEVELOPMENT: Attacks of stripe rust (Puccinia striiformis) and stem rust (P. graminis tritici) were of moderate intensity.

INSECT, WEED OR PEST PROBLEMS: A light attack of rose-grain aphid (Metopolophium dirhodum) and grain aphid (Macrosiphum granarium). A late attack of armyworm (Pseudoaletia unipuncta) occurred also.

DATE OF HARVEST: December 16, 1976 to January 7, 1977.

AREA HARVESTED FOR YIELD: 3 square meters.

DATES WHEN DIFFERENT NOTES WERE TAKEN:
P. striiformis - October 28, 1976.
Flowering - October 13, 1976 to November 19, 1976.
P. graminis tritici - December 12, 1976.
Maturity - December 13, 1976-January 4, 1977.
Height - December 13, 1976-January 4, 1977.
Lodging - December 13, 1976-January 4, 1977.
Shattering - December 13, 1976-January 4, 1977.

Correlation Coefficient

N= No. of observations	Yield	Test weight	1000-kernel weight	Protein	Plant height	Lodging	Flowering
Test weight	.61**						
N	120						
1000-kernel weight	.65**	.71**					
N	120	120					
Protein	.18	.42**	.47**				
N	119	119	119				
Plant height	.04	-.09	-.15	-.15			
N	120	120	120	119			
Lodging	.18*	.22*	.10	.17	.32**		
N	120	120	120	119	120		
Flowering	-.27**	-.45**	-.47**	-.59**	.55**	.02	
N	120	120	120	119	120	120	
Ripening	-.27**	-.39**	-.47**	-.54**	.60**	-.08	.91**
N	120	120	120	119	120	120	120

** Significant at the 1% level.

* Significant at the 5% level.

Table 8. Agronomic, grain quality and disease data for the 30 cultivars in the Eighth International Winter Wheat Performance Nursery grown at Bordenave, Argentina in 1976.

Cultivars	Yield q/ha	Test weight kg/hl	1000-kernel weight g	Protein %	Plant height cm	Lodging %	Date of Flowering: days from Jan. 1	Date of Ripening: days from Jan. 1	Rust: Stripe sev. %	Rust: Stripe resp.	Rust: Stem sev. %	Rust: Stem resp.	Seed grade 1-9
Sage	38.8	77.3	35.9	15.2	104	15	307	356	2	0-R	0		4
Blueboy	37.2	73.4	32.5	11.9	95	0	298	354	7	MR-MS	77	S	5
Odesskaya 51	36.3	77.1	39.3	13.9	85	0	303	355	12	MS-S	47	S	4
Flavio	35.6	74.4	35.0	14.1	78	0	290	349	12	MS-S	1	O-MR	4
GKF-2	33.8	72.7	36.6	15.1	80	0	291	349	6	R-MS	22	S	4
Bordenave Puan Sag	33.4	78.3	32.9	15.0	109	44	305	354	27	MS	35	S	3
F26-70	32.3	74.5	34.9	14.2	94	0	297	352	10	MR-MS	42	S	3
Bezostaya 1	31.2	76.6	38.4	14.5	85	0	300	358	30	S	25	S	3
Priboy	31.2	77.7	36.9	13.4	88	0	305	356	6	MR	37	S	4
Biserka	30.2	72.1	32.1	15.2	73	0	289	348	12	MS-S	15	MS	4
Martonvasar 2	30.0	74.6	38.9	15.0	84	0	299	352	20	S	12	S	4
Dunav-1	29.7	72.3	32.4	15.5	71	0	291	350	12	MS-S	15	MS-S	4
Probstdorfer Karat	29.6	78.4	34.2	12.4	113	0	316	365	4	R	27	S	3
Martonvasar 3	28.9	76.8	38.4	15.0	85	0	300	354	27	MS-S	20	MS-S	4
Lerma Rojo 64	28.8	73.1	37.5	16.3	83	0	286	347	37	S	0		5
Kormoran	28.6	65.6	27.2	11.8	104	0	318	363	0		67	S	4
Sentinel	28.1	74.4	30.7	15.9	91	6	304	356	30	MS	25	MS-S	3
Talent	27.9	68.3	27.9	13.6	80	0	297	353	30	S	10	MS	5
NE 68719	34.5	72.9	28.7	14.8	86	0	308	358	35	MS-S	37	S	4
Galiafen	27.6	71.6	27.8	13.7	94	0	298	359	4	R-MR	15	MR-MS	5
Atlas 66	25.9	75.2	29.5	16.8	110	0	304	362	5	MR	20	MS	4
GKF-8001	25.7	73.9	32.5	13.7	64	0	304	355	35	S	27	MS-S	4
TRS 237	25.2	73.4	31.2	15.6	101	0	296	354	52	S	2	MR	3
Rashid	24.4	71.3	35.7	16.0	89	13	288	348	12	MS-S	22	S	3
WA 5829	24.1	70.3	23.2	10.5	80	0	312	360	60	S	80	S	4
Maris Huntsman	22.4	61.4	27.6	12.6	106	0	320	364	0		65	S	6
Kitakomi-Komugi	20.5	69.8	27.2	13.3	76	0	290	350	80	S	15	MS	5
Maris Templar	18.5	60.1	24.2	12.3	96	0	321	366	0		57	S	6
Lely	16.3	57.8	20.4	11.7	103	0	323	366	0		75	S	8
Oasis	15.2	72.4	25.3	14.4	79	0	300	352	75	S	0	O-R	5
Mean	28.3	72.2	31.8	14.1	89.4	2.6	301.8	355.4	21.4		29.7		4.2
L.S.D. of cultivar means (.05)	4.3	1.9	2.8	0.7	7.0	8.5	2.5	2.3	--		--		-
Coefficient of variation (%)	10.9	1.8	6.3	3.7	5.6	233.0	0.6	0.5	--		--		0.0

AUSTRIA

VIENNA

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

DATE OF PLANTING (EFFECTIVE GERMINATION): October 22, 1975.

PRECIPITATION DURING CYCLE OF TEST: 365 mm. (November 1, 1975 to July 31, 1976).

AMOUNT OF IRRIGATION APPLIED: None.

FERTILIZER USED: Preplant: N = 45 kg/ha; P_2O_5 = 113 kg/ha; K_2O = 180 kg/ha
March 15, 1976: N = 84 kg/ha (Nitro Chalk).

GENERAL DESCRIPTION OF CLIMATIC CONDITIONS DURING TEST: Differential winter injury occurred; the more severely damage varieties only partially recovered. Good development in general, however, drought from mid June accelerated ripening affecting the yield of late maturing varieties adversely.

DISEASE DEVELOPMENT: Powdery mildew (Erysiphe graminis) was serious, which also attacked the ears especially in entry nos. 8, 11, and 27. A light incidence of glume blotch (Septoria nodorum) was noticed. No rusts were observed.

INSECT, WEED OR PEST PROBLEMS: None; weeds were controlled.

DATE OF HARVEST: July 20 and 26, 1976.

AREA HARVESTED FOR YIELD: 3.3 square meters.

DATES WHEN DIFFERENT NOTES WERE TAKEN:
Winter survival - March 26, 1976.
Regeneration of stand - April 13, 1976.
Erysiphe graminis - May 19, 26, June 6, 22, 1976.
Date of flowering - May 20 to June 14, 1976.
Lodging - June 15, 1976.
Date of ripeness - July 3 to 22, 1976.

Correlation Coefficients

No. of observations=120	Yield	1000-kernel weight	Protein	Plant height	Lodging	Flowering	Ripening
1000-kernel weight	.56**						
Protein	-.32**	-.16					
Plant height	.06	.21*	.48**				
Lodging	.04	.09	.18*	.30**			
Flowering	.04	-.18*	.39**	.29**	-.11		
Ripening	-.10	-.39**	.16	.22*	-.06	.72**	
Winter survival	.49	-.12	-.14	-.09	-.12	.07	-.07

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

Table 9. Agronomic, grain quality and disease data for the 30 cultivars in the Eighth International Winter Wheat Performance Nursery grown at Vienna, Austria in 1976.

Cultivars	Yield q/ha	Test weight kg/hl	Protein %	Plant height cm	Lodging %	Date of Flowering days from Jan. 1	Date of Ripening days from Jan. 1	Winter survival %	Stand[a] rating 1-9	Mildew sev. 1-9 May 26	Mildew sev. 1-9 June 22	Seed grade 1-9
Odesskaya 51	68.3	43.6	15.4	101	15	149	195	95	2	3	3	5
Talent	67.5	36.1	15.3	83	10	149	197	86	3	2	3	4
Maris Huntsman	66.9	39.7	16.5	106	10	161	202	90	2	1	1	6
Flavio	65.7	36.3	14.1	88	10	148	195	92	3	4	5	4
Priboy	65.2	44.5	15.3	101	13	151	196	92	2	3	3	3
Probstdorfer Karat	63.1	40.7	16.1	118	10	153	196	98	2	3	2	5
F26-70	62.6	41.2	14.6	100	10	147	194	97	1	4	5	4
Bezostaya 1	62.3	45.4	15.2	100	10	151	197	91	1	4	5	5
Martonvasar 2	61.9	44.6	15.6	96	10	149	196	96	2	4	5	5
TRS 237	61.2	42.7	15.5	119	10	145	197	88	2	4	3	5
Kormoran	60.5	38.0	15.5	108	10	161	202	88	3	2	5	5
GKF-2	59.6	38.3	14.2	90	10	145	195	93	2	4	5	5
Sage	59.2	41.3	16.4	109	20	149	194	100	1	2	2	5
Bordenave Puan Sag	58.6	37.4	17.8	115	40	150	197	91	2	2	4	4
Biserka	57.9	39.7	16.0	81	10	144	196	84	3	3	3	5
Lely	55.8	33.0	17.2	106	10	163	203	97	2	4	6	6
Martonvasar 3	55.2	44.5	16.5	94	10	149	190	96	2	4	6	4
Maris Templar	53.1	36.8	17.4	101	10	162	204	97	2	1	1	5
Dunav-1	52.7	39.6	16.3	83	10	145	194	83	3	2	4	4
Blueboy	51.0	33.4	14.8	108	10	152	204	89	2	5	8	6
Lerma Rojo 64	49.9	39.7	14.8	100	15	143	195	68	4	6	8	5
GKF-8001	49.5	38.3	14.1	73	10	150	195	91	1	4	5	4
Oasis	47.7	38.8	17.1	106	10	148	195	92	2	2	2	5
Atlas 66	46.9	36.3	19.9	124	13	155	197	64	3	3	3	6
Sentinel	46.6	37.8	17.8	108	10	150	196	97	2	2	4	5
Kitakomi-Komugi	45.8	29.8	14.5	93	10	144	195	99	1	5	5	4
Rashid	45.2	42.3	15.9	114	28	146	197	53	4	5	8	4
NE 68719	43.8	31.0	15.7	85	10	148	195	78	2	6	8	5
WA 5829	41.4	26.7	15.9	84	10	153	202	91	2	4	7	5
Galiafen	32.7	34.7	15.8	101	10	153	199	18	7	4	5	5
Mean	55.2	38.4	15.9	99.7	12.4	150.3	196.9	86.4	2.2	3.3	4.5	4.7
L.S.D. of cultivar means (.05)	10.7	3.6	0.9	5.0	8.7	1.1	1.3	14.9	1.0	0.6	-	0.2
Coefficient of variation (%)	13.7	6.6	4.0	3.6	49.9	0.5	0.5	12.2	33.2	13.5	-	3.0
Local cultivar Probstdorfer Extrem	61.8	40.0	--	130	10	152	197	90	3	3	3	-

[a] 1 = very good stand, 9 = very poor stand.

BULGARIA

TOLBUKHIN

COOPERATOR: I. Govedarov

DATE OF PLANTING (EFFECTIVE GERMINATION): October 30, 1975.

PRECIPITATION DURING CYCLE OF TEST: 373.2 mm.

AMOUNT OF IRRIGATION APPLIED: None.

FERTILIZER USED: N = 100 kg/ha; P_2O_5 = 130 kg/ha (Ammonium nitrate and Super-phosphate).

GENERAL DESCRIPTION OF CLIMATIC CONDITIONS DURING TEST: A mild, snowless winter followed a damp autumn; early summer was dry, becoming damp later. Unfavorable conditions during part of the winter caused frost lifting resulting in severe damage to many plants. Some entries failed 100% while others were greatly thinned affecting yields.

DISEASE DEVELOPMENT: Infections of leaf rust (Puccinia recondita), stem rust (P. graminis tritici) and powdery mildew (Erysiphe graminis) were observed.

INSECT, WEED OR PEST PROBLEMS: None.

DATE OF HARVEST: July 25, 1976.

AREA HARVESTED FOR YIELD: 3.75 square meters.

DATES WHEN DIFFERENT NOTES WERE TAKEN: Not reported.

Correlation Coefficient

N= No. of observations	Yield	Test weight	1000-kernel weight	Protein	Plant height	Flowering	Ripening
Test weight	.27**						
N	108						
1000-kernel weight	.02	.48**					
N	116	108					
Protein	-.57**	.10	.15				
N	116	108	116				
Plant height	.22*	.40**	.19*	-.04			
N	116	108	116	116			
Flowering	.01	-.67**	-.30**	-.32**	-.13		
N	117	108	116	116	116		
Ripening	-.38**	-.83**	-.38**	.08	-.32**	.68**	
N	117	108	116	116	116	117	
Winter survival	.83**	.57**	.09	-.48**	.30**	-.25**	-.63**
N	117	108	116	116	116	116	116

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

Table 10. Agronomic, grain quality and disease data for the 30 cultivars in the Eighth International Winter Wheat Performance Nursery grown at Tolbukhin, Bulgaria in 1976.

Cultivars	Yield q/ha	Test weight kg/hl	1000-kernel weight g	Protein %	Plant height cm	Date of Flowering (days from Jan. 1)	Date of Ripening (days from Jan. 1)	Winter survival %	Rust: Leaf sev. %	Leaf resp.	Stem sev. %	Stem resp.	Mildew sev. %	Mildew resp.	Seed grade 1-9
Priboy	65.0	83.5	45.8	12.2	98	152	196	90	25	MR	75	VS	1	MS	2
Blueboy	64.6	77.8	34.6	11.9	90	155	198	70	10	M	75	S	60	VS	4
Odesskaya 51	63.0	83.5	42.6	13.2	97	151	194	90	99	VS	80	VS	10	VS	2
Martonvasar 2	62.7	82.9	46.5	14.2	87	151	196	70	40	M	75	MS	10	VS	3
Probstdorfer Karat	60.2	83.4	41.1	13.1	100	159	196	75	25	M	60	S	5	MR	3
Sentinel	59.3	82.1	35.9	16.0	95	134	195	90	5	R	25	MR	1	MR	4
Sage	59.0	83.1	40.4	14.9	105	151	193	80	0		25	R	1	MS	2
Bezostaya 1	57.1	83.7	44.6	13.6	92	152	198	90	40	VS	75	VS	20	VS	2
Maris Huntsman	56.7	75.6	41.4	13.3	89	163	205	40	5	MR	75	S	0		5
NE 68719	55.1	79.0	31.1	13.0	75	154	196	80	99	VS	89	S	30	VS	3
Lely	53.1	76.7	32.6	13.8	92	165	204	40	0		76	VS	45	VS	4
GKF-8001	52.2	82.4	38.5	12.7	66	152	198	70	40	MR	60	VS	10	VS	3
GKF-2	51.8	80.4	41.7	13.2	76	150	197	50	99	VS	75	S	1	MS	3
Martonvasar 3	51.6	82.1	45.5	13.7	84	151	194	80	99	VS	75	VS	10	VS	2
F26-70	48.8	81.8	41.9	13.7	92	150	196	70	94	M-VS	71	S-VS	15	VS	2
Bordenave Puan Sag	47.6	83.4	39.0	15.5	109	153	197	50	65	VS	60	M	5	VS	2
Kitakomi-Komugi	45.6	81.4	41.1	13.1	79	149	198	50	52	MS-VS	75	VS	30	VS	3
Kormoran	43.1	75.6	33.1	13.7	82	165	205	20	5	R	75	S	0		5
Oasis	36.8	82.7	38.8	14.0	99	151	192	75	0		0		0		4
Dunav-1	35.1	81.6	41.2	15.4	77	151	198	20	20	MR	75	S	1	VS	3
WA 5829	34.7	78.6	28.9	12.0	77	160	204	40	99	VS	60	S	10	MS	4
TRS 237	34.4	81.7	43.3	16.6	102	148	197	40	25	MR-M	45	M	5	VS	2
Talent	25.5	79.8	39.8	15.1	72	152	198	5	40	MS	80	VS	5	M	5
Maris Templar	25.3	73.8	41.6	14.5	80	166	205	5	99	VS	52	S	0		5
Biserka	23.2	79.6	40.1	16.3	71	148	197	8	1	R	75	MR	2	M-VS	3
Rashid	18.1	81.5	43.3	14.1	98	152	198	5	99	VS	99	M	25	VS	4
Flavio	11.3	79.8	38.8	14.3	79	152	202	3	99	VS	75	S	1	VS	3
Atlas 66	8.6	--	38.9	19.0	74	155	205	3	1	R	75	VS	1	MS	5
Lerma Rojo 64	5.2	--	42.8	16.3	99	145	198	2	0		1	MR	10	MS	3
Galiafen	0.0	--	--	--	--	155	205	0	--		--		--		-
Mean	41.8	80.6	39.8	14.2	87.4	153.0	198.3	48.2	44.3		64.1		10.8		3.3
L.S.D. of cultivar means (.05)	9.6	--	1.8	0.6	12.8	--	--	--	--		--		--		0.1
Coefficient of variation (%)	16.4	0.0	3.2	2.9	10.4	0.0	0.0	0.0	--		--		--		3.1

CHILE

TEMUCO

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

DATE OF PLANTING (EFFECTIVE GERMINATION): May 20, 1976.

PRECIPITATION DURING CYCLE OF TEST: Not reported.

AMOUNT OF IRRIGATION APPLIED: Not reported.

FERTILIZER USED: N = 96 kg/ha; P_2O_5 = 200 kg/ha (Chilean Sodium Nitrate and Triple Super-phosphate).

GENERAL DESCRIPTION OF CLIMATIC CONDITIONS DURING TEST: Not reported.

DISEASE DEVELOPMENT: Moderate attack of stripe rust (Puccinia striiformis).

INSECT, WEED OR PEST PROBLEMS: Not reported.

DATE OF HARVEST: February 25, 1977.

AREA HARVESTED FOR YIELD: 3 square meters.

DATES WHEN DIFFERENT NOTES WERE TAKEN: Not reported.

Correlation Coefficients

N= No. of observations	Yield	Test weight	1000-kernel weight	Protein	Plant height
Test weight	.48**				
N	115				
1000-kernel weight	.67**	.68**			
N	120	115			
Protein	-.63**	-.21*	-.46**		
N	120	115	120		
Plant height	-.09	.01	.07	.13	
N	120	115	120	120	
Lodging	-.34**	-.10	-.16	.30**	.28**
N	120	115	120	120	120

** Significant at the 1% level.

* Significant at the 5% level.

Table 11. Agronomic, grain quality and disease data for the 30 cultivars in the Eighth International Winter Wheat Performance Nursery grown at Temuco, Chile in 1976.

Cultivars	Yield q/ha	Test weight kg/hl	1000-kernel weight g	Protein %	Plant height cm	Lodging %	Date of heading days from Jan. 1	Stripe rust[a] sev. %	Stripe rust[a] resp.	Septoria[a] sev. %	Seed grade 1-9
Maris Huntsman	64.1	69.4	50.4	9.6	124	0	199	5	MR	10	5
Probstdorfer Karat	57.5	76.1	43.5	10.8	135	5	196	0	--	5	3
Maris Templar	56.6	72.5	49.3	9.6	118	0	199	0	--	10	5
Kormoran	56.3	67.9	40.4	10.0	119	0	196	0	--	5	4
Blueboy	55.6	64.6	38.1	10.6	121	8	188	10	MR	30	5
Lely	53.8	70.6	41.8	9.3	119	0	194	10	MS	10	4
Priboy	53.8	75.0	47.0	11.1	115	15	189	1	R	10	3
Bezostaya 1	52.3	73.6	47.4	11.4	114	8	187	20	MS	20	4
F26-70	52.3	70.9	42.3	11.0	114	5	190	10	MS	10	4
Dunav-1	51.1	71.1	36.9	12.2	91	0	180	1	R	30	4
Talent	49.8	68.4	34.1	11.5	95	0	191	30	MS	30	5
Martonvasar 2	48.8	72.5	47.6	11.8	114	8	186	1	R	30	3
GKF-2	47.5	68.6	43.3	11.0	99	5	190	1	R	20	4
GKF-8001	45.8	71.9	41.8	11.5	78	0	187	10	MS	30	4
Biserka	44.8	70.4	39.4	11.6	91	0	178	70	S	30	5
Martonvasar 3	43.8	71.2	44.9	12.0	113	10	190	5	MS	30	4
Bordenave Puan Sag	43.3	69.3	34.9	13.2	136	55	191	10	MS	20	4
Sage	42.8	70.2	39.9	12.4	138	28	190	30	MS	30	5
Flavio	42.6	70.1	35.3	11.5	96	0	179	40	MS	20	4
WA 5829	42.3	64.2	32.9	11.1	94	45	193	40	MS	30	5
Kitakomi-Komugi	40.3	66.9	33.3	10.8	105	25	180	70	S	30	4
Odesskaya 51	40.3	69.1	41.5	12.2	116	15	186	20	MS	30	4
Lerma Rojo 64	38.0	72.3	42.9	14.3	101	33	171	0	--	60	4
Sentinel	36.0	67.2	34.3	13.1	124	10	188	20	MS	20	5
Galiafen	32.8	65.9	30.4	11.1	116	13	187	10	MS	30	4
NE68719	32.8	59.3	24.4	13.3	98	0	191	50	MS	30	6
TRS 237	29.6	63.8	35.9	13.8	135	18	190	50	S	30	5
Atlas 66	27.3	67.4	34.6	13.6	151	23	194	40	MS	20	5
Rashid	25.6	69.2	34.3	12.5	128	60	179	80	S	20	4
Oasis	9.6	--	17.8	13.7	111	18	190	50	MS	20	7
Mean	43.9	69.3	38.7	11.7	113.5	13.4	188.2	22.8		23.3	4.4
L.S.D. of cultivar means (.05)	7.1	1.3	4.6	0.9	4.3	16.4	4.3	--		--	0.1
Coefficient of variation (%)	11.4	1.4	8.6	5.2	2.7	86.7	1.6	--		--	2.0

[a] One replication only.

CZECHOSLOVAKIA

MALE RIPNANY

COOPERATOR: D. Michalik.

DATE OF PLANTING (EFFECTIVE GERMINATION): October 3, 1975.

PRECIPITATION DURING CYCLE OF TEST: 291.7 mm.

AMOUNT OF IRRIGATION APPLIED: None.

FERTILIZER USED: N = 50 kg/ha (ammonium sulphate); P_2O_5 = 124 kg/ha (super-phosphate); K_2O = 90 kg/ha (potassium chloride).

GENERAL DESCRIPTION OF CLIMATIC CONDITIONS DURING TEST: Not reported.

DISEASE DEVELOPMENT: Powdery mildew (Erysiphe graminis) was observed.

INSECT, WEED OR PEST PROBLEMS: Not reported.

DATE OF HARVEST: July 19, 1976.

AREA HARVESTED FOR YIELD: 8 square meters.

DATES WHEN DIFFERENT NOTES WERE TAKEN:
E. graminis - May 6, May 26, and June 18, 1976.

Correlation Coefficients

No. of observations=120	Yield	Test weight	1000-kernel weight	Protein	Plant height	Lodging	Flowering	Ripening	Winter survival
Test weight	.10								
1000-kernel weight	-.05	.52**							
Protein	-.53**	.06	-.03						
Plant height	-.13	.26**	.37**	.46**					
Lodging	-.27**	.16	.03	.48**	.20*				
Flowering	-.27**	-.62**	-.26**	.25**	.19*	-.01			
Ripening	-.38**	-.26**	-.10	.12	.38**	.06	.39**		
Winter survival	.80**	.03	-.21*	-.20*	.05	.01	-.03	-.30**	
Frost damage	-.72**	.12	.35**	.21*	.19*	.01	-.10	.36**	-.85**

** Significant at the 1% level.

* Significant at the 5% level.

Table 12. Agronomic, grain quality and disease data for the 30 cultivars in the Eighth International Winter Wheat Performance Nursery grown at Male Ripnany, Czechoslovakia in 1976.

Cultivars	Yield q/ha	Test weight kg/hl	1000-kernel weight g	Protein %	Plant height cm	Lodging %	Date of Flowering days from Jan. 1	Date of Ripening days from Jan. 1	Winter survival %	Frost damage 0-9	Mildew head sev. %	Mildew leaf resp.	Seed grade 1-9
GKF-2	99.3	78.2	37.3	12.6	83	0	146	186	100	0	10	R	2
Martonvasar 2	98.0	82.6	43.0	13.5	93	0	146	186	100	0	40	M	2
Priboy	97.2	82.9	44.4	13.2	109	0	151	195	100	3	20	VR-M	2
Kitakomi-Komugi	97.0	82.8	38.6	12.2	91	0	148	192	100	0	10	M	3
F26-70	96.9	81.2	41.1	13.3	100	0	147	192	100	0	18	R-M	2
Talent	96.4	78.1	33.6	14.0	79	0	147	190	90	2	10	VR	4
Biserka	95.0	80.9	37.3	14.0	80	0	146	185	98	0	0	VR	2
Bezostaya 1	93.5	84.0	43.6	13.8	98	0	148	190	100	2	20	VR-R	2
Blueboy	92.6	74.7	33.3	13.2	97	0	151	194	100	1	25	M	3
Martonvasar 3	92.2	82.6	43.5	14.4	101	0	147	186	100	1	18	M	2
Sentinel	91.5	82.3	35.5	16.1	102	9	151	187	100	0	20	VR	2
Probstdorfer Karat	91.3	83.0	42.1	13.9	115	0	156	189	100	1	10	0	2
Maris Huntsman	90.2	75.2	41.4	13.7	103	0	157	190	100	0	0	0	4
Odesskaya 51	88.0	82.5	41.8	13.8	99	6	150	193	100	3	30	O-VR	2
Dunav-1	87.8	80.7	39.3	14.2	81	0	144	185	98	2	10	VR	2
WA 5829	87.6	77.3	28.6	13.4	82	0	153	194	100	0	20	R	4
GKF-8001	87.5	80.2	36.7	13.4	70	0	149	186	100	1	10	M-MS	2
Maris Templar	85.3	75.0	42.1	14.3	95	0	158	192	100	2	10	0	3
Kormoran	84.1	73.7	34.9	14.4	102	0	158	193	100	1	10	0	3
NE 68719	83.3	77.9	26.9	13.7	90	0	152	193	100	1	80	R-S	3
Sage	83.3	83.0	38.3	15.0	109	0	151	190	100	0	13	0	2
TRS 237	82.5	82.1	40.5	13.8	106	0	145	187	78	7	10	VR	2
Lely	82.0	76.2	34.4	14.5	92	0	160	186	100	0	20	VR	4
Oasis	81.8	82.7	38.4	14.7	107	0	150	189	100	2	15	O-M	3
Flavio	79.1	81.6	39.4	13.1	78	0	146	185	83	3	40	M	3
Atlas 66	69.1	80.0	38.1	16.8	122	0	151	196	80	6	10	M-S	3
Bordenave Puan Sag	63.1	81.1	36.7	17.1	105	30	153	190	100	0	10	0	2
Lerma Rojo 64	60.3	81.0	42.9	14.7	93	0	149	190	30	8	20	MS	3
Rashid	58.2	83.0	45.2	14.5	110	14	144	194	63	8	58	M	3
Galiafen	38.4	76.7	38.3	14.7	85	0	159	197	20	9	40	-	3
Mean	84.4	80.1	38.6	14.1	96.0	2.0	150.4	190.1	91.3	2.1	20.2		2.6
L.S.D. of cultivar means (.05)	4.5	0.2	0.1	0.3	0.3	6.7	--	0.3	3.5	0.7	6.6		--
Coefficient of variation (%)	3.8	0.2	0.2	1.3	0.3	243.7	0.0	0.1	2.7	22.9	23.2		0.0

CZECHOSLOVAKIA

SEDLEC

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

DATE OF PLANTING (EFFECTIVE GERMINATION): October 9, 1975.

PRECIPITATION DURING CYCLE OF TEST: 251 mm. (October 1, 1975-August 10, 1976).

AMOUNT OF IRRIGATION APPLIED: None.

FERTILIZER USED: Preplant: N = 30 kg/ha (Ammonium Sulphate).
May 15, 1976: N = 30 kg/ha (Urea-10% spray).

GENERAL DESCRIPTION OF CLIMATIC CONDITIONS DURING TEST: The winter was mild, with only a slight snow cover, however, variable frosts resulted in poor winter survival. Spring was warm and dry; plant development being unsatisfactory. The same conditions persisted into the summer and ripening was quicker than usual.

DISEASE DEVELOPMENT: A slight attack of powdery mildew (Erysiphe graminis) was the only disease present.

INSECT, WEED OR PEST PROBLEMS: None; 1.4 kg/ha MCPA and 0.35 kg/ha Flurenol herbicide mixture applied on May 4, 1976.

DATE OF HARVEST: July 18-August 9, 1976.

AREA HARVESTED FOR YIELD: 7.88 square meters.

DATES WHEN DIFFERENT NOTES WERE TAKEN:

Winter survival - April 20, 1976
Promptness of spring growth - May 6, 1976.
Evaluation of tillering - May 7, 1976.
Erysiphe graminis - June 28, 1976.
Height - June 29, 1976.

SEDLEC, CZECHOSLOVAKIA

Correlation Coefficients

N= No. of observations	Yield	Test weight	Flowering	Ripening	Plant height	Winter survival	1000-kernel weight	Emergence date	Promptness of spring growth	Tillering value	Beginning of shooting	Average wt. of kernels/ear	Grain development	Average no. of kernels/ear
Test weight	-.06													
N	120													
Flowering	-.002	-.55**												
N	120	120												
Ripening	-.59**	-.32**	.60**											
N	120	120	120											
Plant height	.37**	-.01	.39**	.01										
N	120	120	120	120										
Winter survival	.79**	-.002	-.06	-.60**	.16									
N	120	120	120	120	120									
1000-kernel weight	-.17	.53**	-.38**	-.01	.13	-.20*								
N	120	120	120	120	120	120								
Emergence date	.16	.01	.08	-.02	.20*	.18*	.15							
N	120	120	120	120	120	120	120							
Promptness of spring growth	.13	-.56**	.65**	.43**	.19*	.09	-.47**	.05						
N	116	116	116	116	116	116	116	116						
Tillering value	-.33**	.52**	-.58**	-.29**	-.21*	-.25**	.49**	-.07	-.75**					
N	116	116	116	116	116	116	116	116	116					
Beginning of shooting	.09	-.44*	.69**	.23	.15	.26	-.35	.41*	.71**	-.55**				
N	30	30	30	30	30	30	30	30	29	29				
Average wt. of kernels/ear	.71**	-.11	-.04	-.37**	.29**	.35**	.08	.13	-.10	.03	-.09			
N	120	120	120	120	120	120	120	120	116	116	30			
Grain development	.18*	-.80**	.46**	.17	-.06	.15	-.64**	.04	.43**	-.46**	.47**	.13		
N	120	120	120	120	120	120	120	120	116	116	30	120		
Average No. of kernels/ear	.69**	-.39**	.19*	-.29**	.21*	.36**	-.49**	.02	.20*	-.28**	.05	.81**	.47**	
N	120	120	120	120	120	120	120	120	116	116	30	120	120	
No. of ears/square meter	.77**	-.02	-.07	-.63**	.26**	.81**	-.31**	.10	.26**	-.42**	.23	.16	.15	.28**
N	120	120	120	120	120	120	120	120	116	116	30	120	120	120

** Significant at the 1% level.

* Significant at the 5% level.

Table 13. Agronomic, grain quality and disease data for the 30 cultivars in the Eighth International Winter Wheat Performance Nursery grown at Sedlec, Czechoslovakia in 1976.

Cultivars	Yield q/ha	Test weight kg/hl	1000-kernel weight g	Protein %	Plant height cm	Date of Flowering (days from Jan. 1)	Date of Ripening (days from Jan. 1)	Winter survival %	Mildew sev. %	Mildew resp.
NE 68719	54.8	77.8	27.7	15.4	69	162	196	91	57	VS
Priboy	51.9	82.3	38.3	14.3	85	165	200	79	20	S
Probstdorfer Karat	51.7	80.8	35.2	15.0	97	167	199	88	1	VR
Sentinel	50.5	81.5	32.9	17.2	83	162	196	86	2	R
Martonvasar 3	50.5	81.6	39.0	15.3	76	161	197	76	30	S
Odesskaya 51	50.5	82.6	38.0	15.2	80	161	198	77	4	R
Maris Huntsman	50.4	70.2	32.9	15.7	88	169	204	70	1	VR
Blueboy	50.2	73.8	28.7	14.7	86	165	199	72	47	VS
Martonvasar 2	49.4	78.1	38.7	15.5	76	161	198	77	30	S
Bezostaya 1	49.0	83.0	40.5	15.3	78	161	199	88	25	S
TRS 237	48.3	81.1	39.0	15.8	91	160	198	69	16	MR-MS
Lely	47.4	72.8	28.3	17.6	82	172	207	73	40	VS
Kormoran	47.3	73.4	31.4	15.7	85	170	202	72	16	MS-S
Sage	46.3	82.9	37.3	16.9	84	161	196	81	3	R
WA 5829	46.2	74.8	23.6	15.7	69	167	199	88	30	S
GKF-8001	45.9	81.3	32.4	14.2	58	161	197	78	32	S
Talent	44.8	76.4	29.9	15.4	68	164	199	67	4	R
GKF-2	44.1	78.0	38.7	14.7	68	160	197	70	30	S
F26-70	42.8	79.3	35.2	15.7	74	160	198	81	5	R
Bordenave Puan Sag	42.6	82.5	36.0	17.6	95	166	198	74	1	VR-R
Kitakomi-Komugi	40.2	79.6	30.4	14.9	68	159	199	74	18	MS-S
Atlas 66	40.1	77.8	30.8	18.1	98	167	203	21	13	S
Dunav-1	39.5	79.8	35.6	15.3	63	160	198	54	2	VR
Oasis	37.8	81.6	36.7	16.1	80	159	197	80	1	R
Maris Templar	37.3	70.4	35.9	16.6	80	170	209	68	0	VR
Biserka	36.8	78.2	33.2	15.5	59	160	198	50	5	R-MR
Rashid	31.9	80.1	39.3	15.6	94	162	203	21	57	VS
Flavio	20.6	76.9	35.5	14.8	61	161	203	14	22	S
Lerma Rojo 64	14.1	79.7	38.4	16.9	66	161	203	11	45	VS
Galiafen	3.5	82.2	36.2	15.9	65	168	217	6	27	S
Mean	42.2	78.7	34.5	15.7	77.3	163.3	200.1	65.1	19.5	
L.S.D. of cultivar means (.05)	6.6	1.5	1.5	0.5	3.3	1.8	1.1	6.0	--	
Coefficient of variation (%)	11.1	1.3	3.2	2.4	3.0	0.8	0.4	6.6	--	

Table 13. Agronomic, grain quality and disease data for the 30 cultivars in the Eighth International Winter Wheat Performance Nursery grown at Sedlec, Czechoslovakia in 1976. Concluded.

Cultivars	Emergence date: days from Jan. 1	Spring growth[a] 1-9	Evaluation of tillering[a] 1-9	Date of first heading[b] days from Jan. 1	Grain development[a] 1-9	Average kernel wt. per ear g	Average number of kernels per ear	Number of ears/m^2
NE68719	313	5	3	131	5	0.70	25.3	787
Priboy	314	4	5	129	2	0.86	22.6	602
Probstdorfer Karat	314	4	5	133	2	0.88	25.0	587
Sentinel	314	4	4	130	3	0.64	19.7	788
Martonvasar 3	314	2	7	129	3	0.88	22.6	572
Odesskaya 51	314	3	6	128	3	0.78	20.4	651
Maris Huntsman	315	7	3	134	7	0.91	27.1	556
Blueboy	312	4	5	128	6	0.80	27.9	630
Martonvasar 2	313	2	6	127	3	0.83	21.4	598
Bezostaya 1	312	2	7	131	2	0.82	20.2	599
TRS 237	312	4	5	126	1	0.76	19.6	633
Lely	313	7	3	133	4	0.75	26.5	630
Kormoran	313	8	1	134	4	0.76	24.1	627
Sage	314	5	4	129	3	0.60	16.2	770
WA 5829	312	5	3	133	6	0.59	24.8	784
GKF-8001	313	3	7	131	4	0.70	21.6	656
Talent	313	6	3	132	3	0.63	21.0	717
GKF-2	313	3	6	128	3	0.78	20.2	567
F26-70	312	3	7	130	3	0.71	20.1	604
Bordenave Puan Sag	312	4	6	130	1	0.63	17.4	684
Kitakomi-Komugi	313	3	6	127	4	0.74	24.2	550
Atlas 66	312	3	6	128	4	0.79	27.2	494
Dunav-1	313	3	6	128	3	0.82	23.0	484
Oasis	313	4	6	128	2	0.50	13.7	762
Maris Templar	313	5	4	133	6	0.63	17.6	591
Biserka	311	4	5	127	2	0.64	19.1	580
Rashid	314	4	6	130	2	0.61	15.6	521
Flavio	311	3	6	127	4	0.62	17.6	336
Lerma Rojo 64	313	3	7	129	2	0.64	16.9	215
Galiafen	313	-	-	129	2	0.26	7.2	128
Mean	312.8	3.8	4.9	129.7	3.2	0.71	20.8	590.0
L.S.D. of cultivar means (.05)	1.7	0.9	1.0	--	0.6	0.13	4.1	59.9
Coefficient of variation (%)	0.4	16.5	15.2	--	13.9	12.6	14.1	7.2

[a] 1 = very good, 9 = very poor

[b] One replication only.

EAST GERMANY

BÖHNSHAUSEN

COOPERATOR: A. Meinel.

DATE OF PLANTING (EFFECTIVE GERMINATION): October 11, 1975.

PRECIPITATION DURING CYCLE OF TEST: 383.2 mm. (October 11, 1975-August 10, 1976).

AMOUNT OF IRRIGATION APPLIED: None.

FERTILIZER USED: N = 25 kg/ha (March 29, 1976); N = 30 kg/ha (May 27, 1976); N = 40 kg/ha (June 4, 1976); (all Calcium Ammonium Nitrate).
August 26, 1975: P_2O_5 = 52 kg/ha; K_2O = 199 kg/ha (Potassium Super-phosphate).

GENERAL DESCRIPTION OF CLIMATIC CONDITIONS DURING TEST: The winter was mild but late frosts occurred in February and March. No significant precipitation and unusually high temperatures after flowering time.

DISEASE DEVELOPMENT: Glume blotch (Septoria nodorum) and eyespot (Cercosporella herpotrichoides) were present. No rusts were observed.

INSECT, WEED OR PEST PROBLEMS: None.

DATE OF HARVEST: August 5, 1976.

AREA HARVESTED FOR YIELD: 6.75 square meters.

DATES WHEN DIFFERENT NOTES WERE TAKEN:
Cercosporella herpotrichoides - July 23, 1976.
Breaking of stalks after maturity - August 5, 1976.

Correlation Coefficients

No. of observations=120	Yield	1000-kernel weight	Protein	Plant height	Lodging	Flowering	Ripening	Shattering	Winter survival
1000-kernel weight	.02								
Protein	-.26**	-.11							
Plant height	-.06	.13	.46**						
Lodging	-.16	-.12	.27**	.17					
Flowering	.10	-.46**	.37**	.43**	-.05				
Ripening	-.01	-.29**	.13	.03	-.15	.65**			
Shattering	-.06	-.19*	.28**	.30**	-.09	.32**	.21*		
Winter survival	.40**	-.12	.12	.17	.23*	.23*	-.07	.10	
Frost damage	-.41**	.04	-.11	-.17	-.10	-.22*	.02	-.19*	-.82**

** Significant at the 1% level.

* Significant at the 5% level

Table 14. Agronomic, grain quality and disease data for the 30 cultivars in the Eighth International Winter Wheat Performance Nursery grown at Bohnshausen, East Germany in 1976.

Cultivars	Yield q/ha	1000-kernel weight g	Protein %	Plant height cm	Lodging %	Date of Flowering days from Jan. 1	Date of Ripening days from Jan. 1	Shattering %	Winter survival %
F26-70	62.3	35.9	15.7	89	0	163	191	0	79
GKF-2	61.2	37.9	15.4	80	4	161	194	0	79
Talent	59.4	28.3	16.4	79	0	164	195	1	78
Odesskaya 51	58.3	37.3	16.1	94	0	164	202	0	76
Martonvasar 2	58.2	41.0	16.3	85	0	164	195	0	79
Probstdorfer Karat	58.1	35.1	15.8	105	0	166	197	0	78
NE 68719	58.0	27.4	15.9	79	4	164	190	0	81
Martonvasar 3	57.8	39.0	16.2	89	0	163	195	0	71
Priboy	57.7	39.4	14.5	94	0	163	196	0	69
Sentinel	56.1	35.4	18.4	96	18	163	195	0	75
Bezostaya 1	55.8	39.5	15.5	89	0	163	195	0	78
Sage	55.3	37.6	16.8	98	18	162	193	0	81
Maris Huntsman	55.2	35.5	17.1	100	0	168	200	1	85
Blueboy	55.0	28.9	15.2	95	0	165	195	0	76
Kormoran	54.7	29.3	16.6	98	0	169	200	2	79
Lely	54.0	26.9	18.5	94	0	171	202	1	81
Maris Templar	53.8	34.6	17.4	89	0	168	199	0	76
Kitakomi-Komugi	53.4	34.3	15.0	79	4	161	195	1	75
Biserka	52.9	34.5	16.2	71	0	161	194	0	71
GKF-8001	52.7	32.7	15.1	61	3	163	198	0	75
Dunav-1	51.3	37.7	15.5	68	3	160	194	0	74
Flavio	51.1	36.2	15.1	70	0	160	195	0	70
WA 5829	50.8	22.8	15.8	76	28	165	198	0	85
Oasis	49.4	35.8	16.9	94	1	163	195	2	79
TRS 237	47.0	36.1	16.2	108	0	163	192	0	81
Bordenave Puan Sag	46.5	35.5	18.4	108	29	164	194	0	81
Rashid	45.9	42.6	16.1	103	15	163	193	1	76
Lerma Rojo 64	41.5	40.4	17.2	76	0	159	194	0	68
Atlas 66	41.2	32.8	18.2	109	3	164	195	1	64
Galiafen	40.0	31.8	15.5	81	0	165	200	0	50
Mean	53.1	34.7	16.3	88.4	4.2	163.6	195.6	0.3	75.6
L.S.D. of cultivar means (.05)	5.2	1.8	0.4	3.9	5.9	0.9	1.0	0.4	7.0
Coefficient of variation (%)	7.0	3.7	1.9	3.2	100.0	0.4	0.4	80.6	6.5

Table 14. Agronomic, grain quality and disease data for the 30 cultivars in the Eighth International Winter Wheat Performance Nursery grown at Bohnshausen, East Germany in 1976. Concluded.

Cultivars	Frost damage 0-9	Mildew[a] leaf sev. 1-9	Mildew[a] head sev. 1-9	Septoria[a] sev. 1-9	Cercosporella[a] herpotrichoides 1-9	Stalk breakage[a] after maturity 1-9	Seed[b] grade 1-9
F26-70	3	7	8	7	7	7	3
GKF-2	3	7	8	9	8	8	3
Talent	3	8	9	9	8	7	4
Odesskaya 51	3	7	8	9	7	7	3
Martonvasar 2	3	6	8	9	7	8	2
Probstdorfer Karat	3	6	9	9	8	8	2
NE 68719	3	2	4	9	7	8	4
Martonvasar 3	3	6	8	8	6	9	2
Priboy	3	8	9	9	5	7	3
Sentinel	3	7	8	9	7	7	2
Bezostaya 1	3	5	8	9	7	8	2
Sage	3	7	9	9	7	8	3
Maris Huntsman	2	8	8	9	8	8	4
Blueboy	3	3	6	9	7	7	4
Kormoran	3	8	8	9	8	8	4
Lely	3	6	9	9	8	8	5
Maris Templar	3	8	9	9	8	8	4
Kitakomi-Komugi	3	3	6	8	6	6	4
Biserka	3	8	9	8	8	9	3
GKF-8001	3	7	8	8	8	9	3
Dunav-1	3	8	9	9	8	9	2
Flavio	3	7	9	8	7	8	3
WA 5829	3	5	7	9	6	7	5
Oasis	3	7	8	9	7	7	3
TRS 237	3	7	8	8	7	9	2
Bordenave Puan Sag	3	7	8	9	7	8	2
Rashid	3	4	7	8	6	7	3
Lerma Rojo 64	4	5	8	8	7	9	3
Atlas 66	4	7	8	8	5	6	4
Galiafen	5	7	8	8	8	8	4
Mean	3.0	6.4	7.9	8.6	7.1	7.6	3.2
L.S.D. of cultivar means (.05)	0.6	-	0.7	-	1.0	1.0	0.3
Coefficient of variation (%)	14.4	-	6.5	-	9.9	9.1	6.3

[a] 9 = best

[b] 1 = best

ENGLAND

CAMBRIDGE

COOPERATOR: F. G. H. Lupton.

DATE OF PLANTING (EFFECTIVE GERMINATION): October 23, 1975.

PRECIPITATION DURING CYCLE OF TEST: Not reported.

AMOUNT OF IRRIGATION APPLIED: None.

FERTILIZER USED: Not reported.

GENERAL DESCRIPTION OF CLIMATIC CONDITIONS DURING TEST: Throughout the period it was very dry especially in late spring-early summer.

DISEASE DEVELOPMENT: Powdery mildew (Erysiphe graminis) infection was severe. Conditions were unfavorable for rust development and a few plots showed virus damage.

INSECT, WEED OR PEST PROBLEMS: Birds damaged 25 plots.

DATE OF HARVEST: July 27, 1976.

AREA HARVESTED FOR YIELD: 6.5 square meters.

DATES WHEN DIFFERENT NOTES WERE TAKEN:
Winter habit - April 13, 1976.
Erysiphe graminis - April 27, 1976.
Height - July 14, 1976.

Correlation Coefficients

N= No. of observations	Yield	1000-kernel weight	Protein	Plant height	Flowering
1000-kernel weight	.36**				
N	120				
Protein	-.45**	-.26**			
N	119	119			
Plant height	.20*	-.004	-.10		
N	120	120	119		
Flowering	.45**	.37**	-.48**	.32**	
N	120	120	119	120	
Ripening	.39**	.28**	-.57**	.30**	.80**
N	120	120	119	120	120

** Significant at the 1% level.

* Significant at the 5% level.

Table 15. Agronomic, grain quality and disease data for the 30 cultivars in the Eighth International Winter Wheat Performance Nursery grown at Cambridge, England, 1976.

Cultivars	Yield[a] q/ha	1000-kernel weight g	Protein %	Plant height cm	Date of Flowering (days from Jan. 1)	Date of Ripening (days from Jan. 1)	Mildew Sev. 1-9	Winter habit 1-5	Seed grade 1-9
Talent	57.0	49.7	14.6	81	145	196	3	3	3
Maris Huntsman	51.8	47.6	12.8	101	154	208	1	2	3
Odesskaya 51	45.8	50.8	12.3	98	147	202	5	3	3
Sentinel	42.5	36.8	14.9	96	145	194	4	2	2
Priboy	42.4	50.3	12.4	94	147	200	8	4	3
GKF-8001	42.3	42.7	12.4	71	146	209	6	3	3
F26-70	41.8	43.9	14.9	88	140	198	8	5	5
WA 5829	41.3	46.1	11.6	81	149	211	8	2	5
Martonvasar 3	40.2	41.0	13.9	91	146	199	4	3	2
Maris Templar	40.2	60.2	12.8	88	156	206	1	4	2
Flavio	40.0	35.2	14.9	77	138	179	7	5	3
Probstdorfer Karat	39.6	44.8	14.1	107	152	212	4	2	2
Lely	37.9	43.1	12.6	90	153	201	9	2	3
Galiafen	37.3	41.5	12.7	91	142	200	4	3	4
GKF-2	37.2	47.8	13.6	82	137	187	7	4	3
Sage	36.8	39.1	14.3	100	145	197	5	3	3
Biserka	35.8	46.0	17.6	71	138	186	5	4	3
Bezostaya 1	35.6	45.4	12.9	90	133	183	8	4	3
Oasis	35.0	45.0	14.8	93	145	187	2	3	4
Martonvasar 2	34.5	42.9	13.7	85	147	197	8	4	3
TRS 237	34.5	41.8	15.1	109	145	194	6	3	2
Dunav-1	34.0	42.8	17.1	72	139	183	5	4	3
Kitakomi-Komugi	33.9	39.7	14.9	84	134	192	9	4	3
Kormoran	32.8	45.4	12.1	92	146	193	4	2	2
Bordenave Puan Sag	32.1	38.0	14.4	103	146	200	6	3	2
Blueboy	31.8	40.0	13.0	100	146	203	8	4	4
NE 68719	31.4	35.9	13.4	79	145	201	9	3	5
Rashid	31.1	43.5	14.6	101	135	187	6	4	2
Atlas 66	28.5	47.3	16.4	110	147	203	8	4	3
Lerma Rojo 64	23.6	38.9	16.5	85	133	163	9	5	3
Mean	37.6	43.7	14.0	90.4	144.0	195.7	5.9	3.4	3.0
L.S.D. of cultivar means (.05)	7.8	1.7	0.4	4.4	0.1	0.6	--	--	0.2
Coefficient of variation (%)	10.1	2.7	1.8	3.5	0.1	0.2	--	--	4.7

[a] Two replications only.

FINLAND

JOKIOINEN

COOPERATOR: R. Manner.

DATE OF PLANTING (EFFECTIVE GERMINATION): September 10, 1975.

PRECIPITATION DURING CYCLE OF TEST: 416.3 mm.

AMOUNT OF IRRIGATION APPLIED: None.

FERTILIZER USED: N = 160 kg/ha; P_2O_5 = 100 kg/ha; K_2O = 75 kg/ha.

GENERAL DESCRIPTION OF CLIMATIC CONDITIONS DURING TEST: The autumn soil frost was more severe than normal. Winter was wet with a cool and dry growing season later.

DISEASE DEVELOPMENT: Few disease problems.

INSECT, WEED OR PEST PROBLEMS: None of importance.

DATE OF HARVEST: August 20, 1975.

AREA HARVESTED FOR YIELD: 2 square meters.

DATES WHEN DIFFERENT NOTES WERE TAKEN:
Winter survival - May 17, 1976.
Date of flowering - June 24-30, 1976.
Height - July 22, 1976.
Date of ripenness - August 11-18, 1976.

Correlation Coefficients

N= No. of observations	Yield	Protein	Plant height	Flowering	Ripening
Protein	-.09				
N	56				
Plant height	.70**	.16			
N	68	56			
Flowering	-.30*	-.75**	-.57**		
N	67	56	67		
Ripening	-.27*	-.67**	-.37**	.75**	
N	62	50	62	61	
Winter survival	.67**	.56**	.62**	-.71**	-.73**
N	120	56	68	67	62

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

Table 16. Agronomic, and grain quality data for the 30 cultivars in the Eighth International Winter Wheat Performance Nursery grown at Jokioinen, Finland in 1976.

Cultivars	Yield q/ha	Protein %	Plant height cm	Date of Flowering (days from Jan. 1)	Date of Ripening (days from Jan. 1)	Winter survival %
Probstdorfer Karat	5.0	15.1	51	179	197	80
Odesskaya 51	4.5	17.7	54	178	195	96
Priboy	2.6	14.8	54	179	198	68
Sentinel	2.6	21.7	51	177	194	88
Martonvasar 2	2.3	16.3	39	179	195	52
Oasis	2.3	21.4	43	177	194	90
Lely	2.3	14.3	41	181	200	7
Kormoran	2.2	14.0	38	182	200	5
Sage	2.2	21.8	54	177	195	88
Bezostaya 1	2.0	15.2	45	179	197	38
Martonvasar 3	1.8	16.0	40	179	195	46
NE 68719	1.3	20.5	44	176	192	73
GKF-8001	1.1	16.0	31	180	198	37
GKF-2	0.6	15.8	38	180	197	1
Dunav-1	0.1	14.5	35	180	200	1
F26-70	0.1	17.1	35	178	199	1
Blueboy	0.1	15.7	38	182	199	4
WA 5829	0.0	17.2	30	182	200	1
Maris Templar	0.0	--	--	--	--	0
Maris Huntsman	0.0	--	--	--	--	0
Flavio	0.0	--	--	--	--	0
Biserka	0.0	--	--	--	--	0
TRS 237	0.0	--	--	--	--	0
Rashid	0.0	--	--	--	--	0
Kitakomi-Komugi	0.0	--	--	--	--	0
Talent	0.0	--	--	--	--	0
Lerma Rojo 64	0.0	--	--	--	--	0
Bordenave Puan Sag	0.0	--	--	--	--	0
Galiafen	0.0	--	--	--	--	0
Atlas 66	0.0	--	--	--	--	0
Mean	1.1	17.2	42.7	179.0	196.4	25.8
L.S.D. of cultivar means (.05)	1.9	0.5	8.6	1.3	2.2	19.8
Coefficient of variation (%)	123.7	1.8	14.1	0.5	0.7	54.8

FRANCE

PARIS
(ORGERUS)

COOPERATOR(S): Es. C. C. Benoist; J. P. Hardouin.

DATE OF PLANTING (EFFECTIVE GERMINATION): October 28, 1975.

PRECIPITATION DURING CYCLE OF TEST: 264.8 mm.

AMOUNT OF IRRIGATION APPLIED: Not reported.

FERTILIZER USED: March 1, 1976: N = 65 kg/ha; March 29, 1976: N = 65 kg/ha.

GENERAL DESCRIPTION OF CLIMATIC CONDITIONS DURING TEST: Conditions were unusually dry.

DISEASE DEVELOPMENT: Slight attack of powder mildew (Erysiphe graminis).

INSECT, WEED OR PEST PROBLEMS: None.

DATE OF HARVEST: July 12, 1976.

AREA HARVESTED FOR YIELD: 11.25 square meters.

DATES WHEN DIFFERENT NOTES WERE TAKEN: Not reported.

Correlation Coefficients

N= No. of observations	Yield	Protein	Plant height	Lodging
Protein	-.30**			
N	120			
Plant height	-.15	.66**		
N	30	30		
Lodging	-.25	.69**	.70**	
N	30	30	30	
Flowering	-.001	.07	.11	-.04
N	30	30	30	30

** Significant at the 1% level.

* Significant at the 5% level.

Table 17. Agronomic and grain quality data for the 30 cultivars in the Eighth International Winter Wheat Performance Nursery grown at Orgerus, France in 1976.

Cultivars	Yield q/ha	Protein %	Plant height[a] cm	Lodging[a] %	Date of Flowering[a] days from Jan. 1
F26-70	65.5	13.9	100	0	140
Talent	64.5	13.6	80	0	141
Priboy	62.2	13.3	100	70	145
Flavio	60.2	13.2	88	0	138
Maris Huntsman	58.7	13.9	100	70	151
Martonvasar 3	58.4	14.0	95	30	145
Maris Templar	57.7	14.2	90	5	152
Galiafen	56.4	13.8	103	0	142
Martonvasar 2	56.0	13.8	92	5	144
GKF-2	55.6	12.9	85	0	136
Blueboy	54.7	12.4	100	0	144
Bezostaya 1	54.6	13.8	90	5	145
Kitakomi-Komugi	53.9	12.4	85	0	137
Odesskaya 51	53.6	14.3	102	10	145
Biserka	52.9	14.1	83	0	135
Kormoran	52.6	13.5	96	5	153
Sage	52.3	14.7	105	70	144
Lely	52.0	14.1	94	5	154
GKF-8001	51.1	12.7	63	0	145
TRS 237	50.6	15.8	114	70	139
Dunav-1	50.4	14.3	78	0	137
Oasis	50.3	14.4	100	40	143
Bordenave Puan Sag	49.9	15.5	120	90	144
Probstdorfer Karat	49.4	14.3	115	10	150
Atlas 66	48.7	17.1	120	90	145
Sentinel	48.3	15.8	102	75	143
Rashid	46.0	14.8	115	90	136
Lerma Rojo 64	45.8	14.3	90	40	132
WA 5829	45.0	13.6	77	0	151
NE 68719	43.6	13.7	84	0	143
Mean	53.4	14.1	95.5	26.0	143.3
L.S.D. of cultivar means (.05)	5.5	0.4	--	--	--
Coefficient of variation (%)	7.4	2.0	--	--	--

[a] One replication only.

HUNGARY

MARTONVASAR

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

DATE OF PLANTING (EFFECTIVE GERMINATION): October 17, 1975.

PRECIPITATION DURING CYCLE OF TEST: 269 mm.

AMOUNT OF IRRIGATION APPLIED: None.

FERTILIZER USED: N = 170 kg/ha; P_2O_5 = 389 kg/ha; K_2O = 205 kg/ha.

GENERAL DESCRIPTION OF CLIMATIC CONDITIONS DURING TEST: Autumn was normal and the winter extremely mild. A cold, early spring was followed by a very dry summer.

DISEASE DEVELOPMENT: A heavy attack of powdery mildew (Erysiphe graminis) and a late stem rust (Puccinia graminis tritici) infection was observed.

INSECT, WEED OR PEST PROBLEMS: None.

DATE OF HARVEST: July 21, 1976.

AREA HARVESTED FOR YIELD: 5 square meters.

DATES WHEN DIFFERENT NOTES WERE TAKEN:
Erysiphe graminis - Resp. - May 18, 1976.
Sev. - June 15, 1976.
Height - June 30, 1976.
Puccinia graminis tritici - July 14, 1976.
Lodging - July 20, 1976.

Correlation Coefficients

N= No. of observations	Yield	Test weight	1000-kernel weight	Protein	Plant height	Lodging	Flowering
Test weight	.32**						
N	120						
1000-kernel weight	.45**	.60**					
N	120	120					
Protein	.07	.57**	.28**				
N	119	119	119				
Plant height	.48**	.40**	.48**	.32**			
N	120	120	120	119			
Lodging	-.08	.27**	-.07	.18	.22*		
N	120	120	120	119	120		
Flowering	.20*	-.40**	-.05	-.21*	.25**	-.23*	
N	120	120	120	119	120	120	
Ripening	.21*	-.28**	.02	-.27**	.28**	-.23*	.78**
N	120	120	120	119	120	120	120

** Significant at the 1% level.

* Significant at the 5% level.

Table 18. Agronomic, grain quality and disease data for the 30 cultivars in the Eighth International Winter Wheat Performance Nursery grown at Martonvasar, Hungary in 1976.

Cultivars	Yield q/ha	Test weight kg/hl	1000-kernel weight g	Protein %	Plant height cm	Lodging %	Date of Flowering days from Jan. 1	Date of Ripening days from Jan. 1	Stem rust sev. %	Stem rust resp.	Mildew sev. %	Mildew resp.	Seed grade 1-9
Probstdorfer Karat	76.9	83.0	45.5	13.8	115	1	153	198	27	VR-VS	25	MR-M	2
Maris Huntsman	71.5	73.7	46.4	13.1	104	0	157	201	91	S-VS	0		4
Priboy	70.9	82.9	47.6	12.6	102	30	150	196	79	M-VS	67	M-S	3
Odesskaya 51	68.1	83.2	44.7	13.8	104	42	149	196	30	R-VS	57	MR-M	2
Talent	67.9	78.5	38.2	13.8	83	1	149	196	32	O-VS	57	VR-MR	4
Sentinel	66.6	82.2	37.8	16.0	100	53	149	195	33	R	62	VR-MR	2
Oasis	66.2	82.8	41.3	14.8	109	63	148	191	2	O-VR	7	VR	3
Sage	66.2	82.8	41.4	15.1	108	80	149	191	3	O-VR	32	VR-MR	2
Biserka	64.6	77.7	38.2	14.2	83	0	147	188	10	VR-R	45	VR-R	3
Maris Templar	64.3	74.9	45.7	13.3	93	0	159	202	94	S-VS	2	O-VR	4
TRS 237	63.3	81.3	44.7	14.9	114	2	147	193	31	R-MS	52	MR-M	2
Martonvasar 2	62.9	76.5	45.4	13.9	94	0	148	194	15	O-S	95	M-S	2
Dunav-1	62.8	78.8	39.4	14.2	82	0	147	189	2	O-MS	41	VR-MR	2
Bordenave Puan Sag	62.6	83.4	39.9	15.3	105	83	152	195	27	VR-M	53	VR-M	2
F26-70	61.0	78.3	38.6	13.0	95	1	148	195	82	MS-VS	95	M-S	2
Bezostaya 1	59.2	82.0	46.3	13.7	98	1	148	196	20	VR-VS	90	S-VS	2
Kormoran	58.6	73.3	38.0	12.7	100	1	157	201	94	M-VS	87	VR-MR	3
Martonvasar 3	56.7	80.0	44.8	14.1	95	0	148	196	25	VR-MS	95	M-VS	2
Kitakomi-Komugi	56.4	78.9	34.7	12.6	86	40	145	196	65	MS-VS	92	VS	3
Blueboy	55.4	69.3	32.4	11.2	107	30	152	197	82	M-VS	99	S-VS	4
Atlas 66	54.9	79.6	40.8	17.5	116	5	151	196	30	VR-MS	47	MR-MS	4
Lely	52.9	73.2	31.1	12.9	100	0	160	201	96	S-VS	90	MR-S	3
Flavio	52.6	78.1	36.0	12.5	80	1	147	192	92	S-VS	82	R-M	3
GKF-2	52.6	73.1	38.1	12.8	88	4	147	192	52	MR-S	90	MR-S	2
NE 68719	47.0	74.5	26.6	13.7	84	0	150	195	72	ROS	99	VS	5
WA 5829	46.1	69.9	26.3	12.4	80	70	152	197	92	S-VS	99	S-VS	4
GKF-8001	40.6	72.8	33.4	13.6	67	0	148	193	10	O-MS	92	M-VS	3
Rashid	39.5	81.7	43.3	14.2	104	85	146	192	74	VR-VS	75	VS	3
Galiafen	36.0	79.5	38.9	13.9	89	0	150	198	35	O-R	95	M-S	3
Lerma Rojo 64	34.4	78.2	39.2	14.1	85	63	144	189	1	O-VR	99	VS	3
Mean	57.9	78.1	39.5	13.8	95.7	21.9	149.7	194.9	46.6		67.4		2.9
L.S.D. of cultivar means (.05)	5.8	1.8	1.8	0.4	4.0	16.2	1.1	2.0	--		--		0.1
Coefficient of variation (%)	7.2	1.6	3.3	2.2	2.9	52.5	0.5	0.7	--		--		3.5

HUNGARY

SZEGED

COOPERATOR: Z. Barabas.

DATE OF PLANTING (EFFECTIVE GERMINATION): November 10, 1975.

PRECIPITATION DURING CYCLE OF TEST: Not reported.

AMOUNT OF IRRIGATION APPLIED: 324 mm.

FERTILIZER USED: N = 200 kg/ha; P_2O_5 = 200 kg/ha; K_2O = some applied (amount not reported); (Ammonium Nitrate and Super-phosphate).

GENERAL DESCRIPTION OF CLIMATIC CONDITIONS DURING TEST: Winter and spring were rainy; summer was dry.

DISEASE DEVELOPMENT: More than average disease development occurred; leaf rust (Puccinia recondita), powdery mildew (Erysiphe graminis), Septoria sp. and Fusarium sp. were observed.

INSECT, WEED OR PEST PROBLEMS: Not reported.

DATE OF HARVEST: July 27, 1976.

AREA HARVESTED FOR YIELD: 2.4 square meters.

DATES WHEN DIFFERENT NOTES WERE TAKEN:
Erysiphe graminis - July 3, 1976.
Puccinia recondita - July 3, 1976.
Fusarium sp. - July 13, 1976.
Septoria tritici - July 15, 1976.
S. nodorum - July 15, 1976.

Correlation Coefficients

N= No. of observations	Yield	Test weight	1000-kernel weight	Protein	Plant height	Lodging	Flowering
Test weight	.35**						
N	60						
1000-kernel weight	.16	.38**					
N	120	60					
Protein	.28	.54**	.34				
N	30	30	30				
Plant height	.08	.09	.29**	.26			
N	120	60	120	30			
Lodging	.07	.47**	.13	.50**	.33**		
N	120	60	120	30	120		
Flowering	-.39**	-.37**	-.01	-.18	.15	-.06	
N	120	60	120	30	120	120	
Ripening	-.51**	-.39**	-.04	-.35	.09	-.004	.76**
N	120	60	120	30	120	120	120

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

Table 19. Agronomic, grain quality and disease data for the 30 cultivars in the Eighth International Winter Wheat Performance Nursery grown at Szeged, Hungary in 1976.

Cultivars	Yield q/ha	Test[a] weight kg/hl	1000-kernel weight g	Protein[b] %	Plant height cm	Lodging %	Date of Flowering days from Jan. 1	Date of Ripening days from Jan. 1	Leaf rust[b] sev. %	Leaf rust[b] resp.	Mildew[b] sev. %	Mildew[b] resp.	Septoria[b] sev. 0-9	Fusarium[b] sev. 0-9	Seed grade 1-9
Talent	71.7	75.8	40.5	15.5	86	25	152	191	0		1	R	3	1	4
Flavio	70.2	74.5	38.1	15.3	95	40	151	188	1	MS	3	R	4	1	3
Biserka	68.1	76.8	40.6	15.3	89	54	150	189	5	MR	8	R	2	1	3
Oasis	67.7	79.1	41.8	14.7	103	93	152	191	10	MS	1	R	3	0	4
Priboy	67.5	78.1	50.0	14.6	105	88	154	191	0		3	MS	4	1	4
Probstdorfer Karat	67.3	79.8	46.0	15.2	111	68	160	194	5	MS	1	R	4	0	3
F26-70	66.7	77.1	41.3	14.3	98	35	150	188	0		4	MS	5	3	3
Martonvasar 2	62.6	77.2	48.7	16.3	100	60	153	191	0		5	S	4	3	4
Atlas 66	62.1	77.4	39.8	18.2	111	85	160	194	0		3	R	2	1	3
Sentinel	61.4	77.2	39.0	17.8	101	91	155	190	1	MS	4	MS	2	1	3
GKF-2	61.0	75.2	43.0	14.3	94	30	150	188	5	S	8	MS	5	3	3
Bezostaya 1	60.9	79.1	47.5	15.2	96	55	154	192	1	S	5	S	5	1	3
Bordenave Puan Sag	60.3	79.6	42.0	17.5	105	95	155	195	1	MS	4	MS	4	0	3
Kitakomi-Komugi	59.4	76.0	40.8	13.4	96	51	150	191	1	S	4	MS	4	2	3
Blueboy	58.7	71.3	36.3	13.2	108	63	156	194	1	S	7	S	5	1	4
Odesskaya 51	58.7	78.6	47.8	15.2	103	70	151	190	10	S	4	R	3	1	3
Sage	58.0	79.2	42.8	16.3	108	87	153	189	0		3	R	3	1	3
Galiafen	57.6	76.7	38.3	13.9	96	53	156	196	0		5	R	2	1	4
Martonvasar 3	57.6	76.9	46.8	16.1	98	75	153	191	10	S	6	MS	5	3	4
Kormoran	57.0	73.2	39.5	14.3	104	28	164	194	1	MS	2	R	2	0	4
TRS 237	57.0	77.3	42.1	16.1	114	59	151	193	1	MS	5	MS	2	2	8
Dunav-1	56.2	77.1	41.5	15.4	86	41	150	188	0		1	R	5	1	4
Lerma Rojo 64	55.5	76.9	42.8	15.0	103	66	146	187	0		4	MS	4	1	4
Maris Huntsman	49.9	71.7	50.5	15.3	102	63	163	198	1		0		3	1	4
WA 5829	48.7	73.0	32.0	12.5	88	58	160	196	1	MS	7	MS	4	0	4
NE 68719	46.5	73.5	32.0	14.2	90	30	156	194	1	MR	8	S	5	0	4
Maris Templar	43.1	74.7	50.6	14.2	101	33	165	199	0		0		1	0	4
Lely	42.4	75.0	39.6	13.4	105	10	169	200	0		4	S	4	0	4
Rashid	42.3	77.5	43.5	16.7	113	87	152	193	20	MS	6	MS	2	1	4
GKF-8001	41.9	75.9	39.0	14.9	70	1	154	195	1	MS	4	S	5	2	4
Mean	57.9	76.4	42.1	15.1	99.2	56.3	154.8	192.3	2.6		4.0		3.5	1.1	3.7
L.S.D. of cultivar means (.05)	9.4	0.5	2.8	--	6.5	30.6	2.0	2.8	-		-		-	-	-
Coefficient of variation (%)	11.5	0.3	4.7	--	4.7	38.7	0.9	1.0	-		-		-	-	-

[a] Two replications only.

[b] One replication only.

IRAN

HAMADAN

COOPERATOR(S): H. Kaveh; N. Safaii.

DATE OF PLANTING (EFFECTIVE GERMINATION): October 20, 1975.

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 (Urea and Ammonium Phosphate).

GENERAL DESCRIPTION OF CLIMATIC CONDITIONS DURING TEST: Not reported.

DISEASE DEVELOPMENT: Not reported.

INSECT, WEED OR PEST PROBLEMS: Birds damaged some plots.

DATE OF HARVEST: Not reported.

AREA HARVESTED FOR YIELD: 3 square meters.

DATES WHEN DIFFERENT NOTES WERE TAKEN: Not reported.

Correlation Coefficients

No. of observations=120	Yield	Protein	Plant height	Flowering	Ripening
Protein	-.14				
Plant height	.10	.15			
Flowering	.26**	-.40**	-.01		
Ripening	.15	-.24**	.08	.35**	
Frost damage	-.14	.16	-.17	-.11	-.18*

** Significant at the 1% level.

* Significant at the 5% level.

Table 20. Agronomic and grain quality data for the 30 cultivars in the Eighth International Winter Wheat Performance Nursery grown at Hamadan, Iran in 1976.

Cultivars	Yield q/ha	Protein %	Plant height cm	Date of Flowering (days from Jan. 1)	Date of Ripening (days from Jan. 1)	Frost damage %	Bird damage %	Seed grade 1-9
WA 5829	55.6	11.5	65	150	202	4	0	3
NE 68719	53.3	13.7	73	149	202	3	0	3
Probstdorfer Karat	53.0	13.4	99	151	202	3	0	2
Maris Huntsman	49.7	11.2	95	153	204	3	0	5
Blueboy	49.7	11.8	93	150	202	3	0	3
Sentinel	45.3	15.1	86	149	202	3	0	2
GKF-8001	44.9	12.5	68	150	201	2	0	3
Odesskaya 51	44.3	14.3	86	149	201	3	0	2
Kormoran	43.5	12.5	85	153	204	2	0	3
Maris Templar	42.9	12.2	87	154	204	3	3	3
Martonvasar 3	42.6	14.7	83	148	200	3	0	2
Sage	42.4	15.4	90	149	201	3	0	2
Bordenave Puan Sag	41.4	15.8	93	148	201	3	0	2
Bezostaya 1	40.6	13.6	90	150	201	2	0	2
Oasis	40.5	15.1	84	149	201	3	18	3
Kitakomi-Komugi	39.8	14.4	80	150	201	3	0	2
Lely	38.3	13.0	83	153	206	3	0	4
Martonvasar 2	36.8	13.8	85	149	201	3	0	2
GKF-2	36.6	13.7	85	149	201	4	0	3
Atlas 66	36.4	16.4	111	149	201	3	0	3
TRS 237	34.5	15.6	93	149	202	2	28	2
Priboy	31.6	11.7	84	149	201	3	0	2
Dunav-1	30.7	14.8	72	149	201	2	43	2
F26-70	28.3	13.0	83	148	200	3	23	2
Galiafen	27.9	13.9	86	149	201	5	0	3
Biserka	24.2	14.9	76	148	201	3	33	3
Talent	24.1	13.3	71	149	201	3	0	3
Flavio	23.7	15.2	71	150	202	5	53	4
Lerma Rojo 64	23.2	16.5	86	148	187	5	8	2
Rashid	16.6	15.8	97	148	201	4	28	2
Mean	38.1	14.0	84.4	149.4	201.0	3.0	7.9	2.6
L.S.D. of cultivar means (.05)	16.7	1.7	7.6	1.3	6.8	1.7	-	0.3
Coefficient of variation (%)	31.2	8.9	6.4	0.6	2.4	39.7	-	8.7
Local cultivars:								
Omid	50.7	--	103	147	201	-		
Roshan	35.9	--	102	147	201	-		

IRAN

KARAJ

COOPERATOR: H. Kaveh.

DATE OF PLANTING (EFFECTIVE GERMINATION): October 23, 1975.

PRECIPITATION DURING CYCLE OF TEST: 251.4 mm.

AMOUNT OF IRRIGATION APPLIED: 5 applications (amounts not reported).

FERTILIZER USED: N = 120 kg/ha; P_2O_5 = 60 kg/ha (Urea and Ammonium Phosphate).

GENERAL DESCRIPTION OF CLIMATIC CONDITIONS DURING TEST: Winter was mild at first but later became cold. A cold, humid spring caused late maturity.

DISEASE DEVELOPMENT: The field was inoculated with stem rust (Puccinia graminis tritici) resulting in a severe infection. Some yellow rust (P. striiformis) was also observed.

INSECT, WEED OR PEST PROBLEMS: Weeds were controlled by herbicide and hand weeding.

DATE OF HARVEST: July 7, 1976.

AREA HARVESTED FOR YIELD: 3 square meters.

DATES WHEN DIFFERENT NOTES WERE TAKEN: Not reported.

Correlation Coefficients

N= No. of observations	Yield	Protein	Plant height	Lodging	Flowering	Ripening	Shattering
Protein	-.06						
N	120						
Plant height	-.28*	.37**					
N	60	60					
Lodging	.10	.26	.12				
N	30	30	30				
Flowering	-.21	-.21	.19	-.09			
N	60	60	60	30			
Ripening	-.08	-.23	-.11	-.29	.65**		
N	60	60	60	30	60		
Shattering	-.14	-.03	.42*	-.27	.06	-.23	
N	30	30	30	30	30	30	
Frost damage	-.06	.03	.07	.09	-.33**	-.16	-.06
N	120	120	60	30	60	60	30

** Significant at the 1% level.

* Significant at the 5% level.

Table 21. Agronomic, grain quality and disease data for the 30 cultivars in the Eighth International Winter Wheat Performance Nursery grown at Karaj, Iran in 1976.

Cultivars	Yield q/ha	Protein %	Plant height[a] cm	Lodging[b] %	Date of[a] Flowering days from Jan. 1	Date of[a] Ripening days from Jan. 1	Shattering[b] %	Frost damage 0-9	Germination %	Stem rust sev. %	Stem rust resp.
Lerma Rojo 64	75.6	12.7	98	60	131	179	0	5	99	0	
Flavio	74.0	11.6	93	0	134	179	5	4	98	15	MS
Kitakomi-Komugi	73.7	10.1	98	15	135	179	5	3	99	30	S
Martonvasar 3	72.6	12.7	105	0	140	179	10	0	99	50	S
Biserka	72.4	12.1	95	0	135	179	20	2	99	10	MS
Blueboy	72.1	10.9	115	0	142	183	15	0	99	70	S
Bezostaya 1	72.1	12.0	103	0	140	185	0	1	99	10	MS
GKF-8001	71.3	11.3	68	0	140	183	0	0	96	50	S
Priboy	70.6	11.8	108	80	141	183	5	0	99	30	MS
Talent	70.3	11.9	88	0	136	185	5	2	99	5	MS
Sage	70.1	13.8	110	60	139	179	0	0	99	0	
Odesskaya 51	67.7	12.6	108	60	139	182	0	0	99	50	S
TRS 237	66.8	13.9	123	0	136	179	20	1	99	5	MS
Sentinel	66.8	14.9	100	0	137	183	0	0	99	0	
Dunav-1	66.7	12.8	88	0	135	183	5	1	98	10	MS
Oasis	66.2	13.6	103	99	139	179	5	1	99	0	
Martonvasar 2	65.9	12.1	103	0	140	183	5	1	99	10	MS
Galiafen	65.6	12.7	110	0	137	182	5	5	99	1	MR
NE 68719	65.5	12.3	83	0	141	183	5	0	98	1	MS
Probstdorfer Karat	63.8	13.2	123	0	146	183	0	0	97	10	MS
F26-70	63.7	10.8	108	0	136	179	15	2	99	70	S
GKF-2	63.4	11.4	90	0	135	183	0	3	98	20	MS
Maris Huntsman	61.7	11.1	110	0	151	185	10	2	98	25	MS
WA 5829	60.2	8.9	83	0	148	187	0	0	99	70	S
Bordenave Puan Sag	59.1	14.2	115	99	140	182	0	2	99	10	MS
Kormoran	58.0	12.2	110	0	148	185	20	2	99	5	S
Maris Templar	56.3	12.2	110	0	151	188	5	2	99	15	MS
Rashid	55.5	13.5	105	99	131	179	5	3	99	30	S
Lely	55.5	12.4	105	80	152	188	10	2	97	50	S
Atlas 66	55.3	15.1	128	0	139	179	20	3	99	10	S
Mean	65.9	12.3	102.6	21.7	139.6	182.0	6.5	1.5	98.5	22.1	
L.S.D. of cultivar means (.05)	10.7	1.2	9.0	--	0.9	4.3	-	1.0	1.8	--	
Coefficient of variation (%)	11.6	7.1	4.3	--	0.3	1.2	-	48.0	1.3	--	
Local cultivars:											
Omid	38.1	--	127	99	138	185	0	3		99	S
Karaj 2	39.6	--	123	50	138	185	0	3		0	

[a] Two replications only.

[b] One replication only.

IRAQ

SULAIMANIYA

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

DATE OF PLANTING (EFFECTIVE GERMINATION): October 22, 1975.

PRECIPITATION DURING CYCLE OF TEST: 863.1 mm.

AMOUNT OF IRRIGATION APPLIED: None.

FERTILIZER USED: Ammonium sulphate and triple super-phosphate were used (amounts not reported).

GENERAL DESCRIPTION OF CLIMATIC CONDITIONS DURING TEST: Although total precipitation was above average its distribution was not uniform. The first rains did not occur until late November while very heavy rain fell during April. Climatic conditions were optimal for rust development in May. All these factors contributed to poor crop growth.

DISEASE DEVELOPMENT: Heavy rust infection especially leaf rust (Puccinia recondita) and stem rust (P. graminis tritici).

INSECT, WEED OR PEST PROBLEMS: 2,4-D was used to control weeds.

DATE OF HARVEST: July 11, 1976.

AREA HARVESTED FOR YIELD: 3.0 square meters.

DATES WHEN DIFFERENT NOTES WERE TAKEN:
Date of flowering - April and May.
Rust diseases - Late April to late May.
Winter survival - May 15 to 30, 1976.
Maturity - June.

Correlation Coefficients

N= No. of observations	Yield	Test weight	1000-kernel weight	Protein	Plant height	Lodging	Flowering
Test weight	.82**						
N	30						
1000-kernel weight	.73**	.84**					
N	30	30					
Protein	-.34**	-.29	-.21				
N	120	30	30				
Plant height	.34**	.23	.21	.27**			
N	120	30	30	120			
Lodging	.04	.14	.06	.05	.34**		
N	120	30	30	120	120		
Flowering	-.75**	-.79**	-.71**	.50**	-.16	-.19*	
N	120	30	30	120	120	120	
Ripening	-.77**	-.79**	-.69**	.50**	-.17	-.17	.97**
N	120	30	30	120	120	120	120

** Significant at the 1% level.

* Significant at the 5% level.

Table 22. Agronomic, grain quality and disease data for the 30 cultivars in the Eighth International Winter Wheat Performance Nursery grown at Sulaimaniya, Iraq in 1976.

Cultivars	Yield q/ha	Test[a] weight kg/hl	1000-kernel weight[a] g	Protein %	Plant height cm	Lodging %	Date of Flowering days from Jan. 1	Date of Ripening days from Jan. 1	Rust: Stripe sev. 0-9	Stripe resp.	Leaf sev. 0-9	Leaf resp.	Stem sev. 0-9	Stem resp.	Seed grade 1-9
Flavio	50.7	79.5	35.9	12.7	100	3	131	162	0		4	MR-S	0	O-R	3
Lerma Rojo 64	50.6	83.0	41.1	14.6	100	0	126	160	0		1	VR-R	0		2
Martonvasar 3	46.7	80.0	38.3	15.5	109	0	137	167	0		2	MR	0	O-MR	2
Odesskaya 51	46.4	81.5	35.8	13.6	111	0	135	166	1	O-MS	1	R-MR	3	MS-S	2
Sage	41.0	80.5	32.8	16.0	129	25	138	169	0		0	O-VR	0	O-VR	2
F26-70	40.8	80.0	33.1	13.0	104	0	135	165	0		2	MR-MS	4	MR-S	3
Priboy	40.1	81.0	36.1	13.3	110	0	138	169	0		1	O-MR	1	R-MS	3
Blueboy	39.7	73.0	32.4	11.6	109	0	136	167	0		1	R-MR	3	MR-S	4
Dunav-1	39.1	79.5	33.3	14.5	85	0	134	166	0		0	O-VR	0	O-R	2
Bordenave Puan Sag	38.7	79.5	28.9	17.3	125	20	139	169	0		0	O-VR	1	O-S	2
Probstdorfer Karat	38.7	78.5	30.5	15.6	126	0	145	176	0		1	VR	0	O-VR	4
GKF-8001	38.4	80.5	34.1	13.6	69	0	141	171	0		1	VR-R	0	O-MR	2
Bezostaya 1	38.3	82.5	36.9	14.3	99	0	136	168	0		1	VR-MR	0		2
Biserka	38.1	77.0	33.3	13.9	84	0	132	165	0		0	O-R	1	O-MS	3
Galiafen	37.9	75.0	29.8	15.6	105	0	137	169	0		0	O-VR	0	O-VR	4
Sentinel	36.9	79.0	32.0	15.8	105	0	139	170	0		0		0		2
Oasis	35.3	81.0	32.4	14.4	100	3	137	168	1	O-MS	0	O-VR	0	O-VR	3
GKF-2	35.1	77.0	34.0	13.5	86	0	135	166	1	O-S	3	MR-S	2	MR-S	3
Kitakomi-Komugi	32.7	77.0	29.5	12.1	92	0	133	164	2	O-VS	4	MR-VS	5	MR-VS	3
Martonvasar 2	32.3	81.0	41.6	15.5	91	0	137	168	0		1	VR-R	0	O-R	1
Talent	32.0	73.5	28.0	15.1	81	0	140	170	0		2	R-MS	0		5
TRS 237	31.8	78.5	35.3	14.8	124	8	136	168	0		5	MS-VS	0		2
Rashid	30.0	80.0	32.2	13.4	109	46	130	163	1	O-VS	5	MS-VS	2	O-VS	2
Atlas 66	29.1	77.5	30.3	18.1	128	10	138	169	0		0		0	O-R	5
NE 68719	28.1	73.5	20.7	12.8	84	0	145	175	0	O-R	2	R-MS	4	MS-VS	3
WA 5829	19.4	68.0	18.8	11.8	81	0	144	179	1	O-MS	4	MR-S	4	MS-S	7
Maris Huntsman	18.3	62.0	24.8	16.5	111	0	150	182	0	O-MR	1	VR-R	2	MR-S	9
Maris Templar	15.9	62.5	23.6	17.6	101	0	152	184	0		0	O-VR	2	R-S	8
Kormoran	13.4	69.0	22.3	17.5	93	0	150	182	0		0	O-R	1	MR	8
Lely	12.7	59.0	15.8	17.7	86	0	153	185	0		3	MR-MS	1	R-MR	8
Mean	34.3	76.3	31.1	14.7	101.2	3.8	138.5	169.9	0.2		1.5		1.2		3.6
L.S.D. of cultivar means (.05)	9.2	--	--	1.5	13.6	20.4	3.6	3.7	-		-		-		-
Coefficient of variation (%)	19.0	--	--	7.4	9.6	383.1	1.8	1.5	-		-		-		0.0

[a] One replication only.

ITALY

MILANO

COOPERATOR: B. Borghi.

DATE OF PLANTING (EFFECTIVE GERMINATION): October 24, 1975.

PRECIPITATION DURING CYCLE OF TEST: Not reported.

AMOUNT OF IRRIGATION APPLIED: None.

FERTILIZER USED: Preplant - P_2O_5 = 100 kg/ha; K_2O = 100 kg/ha
Spring - N = 100 kg/ha.

GENERAL DESCRIPTION OF CLIMATIC CONDITIONS DURING TEST: The spring was very dry.

DISEASE DEVELOPMENT: This was very limited.

INSECT, WEED OR PEST PROBLEMS: Not reported.

DATE OF HARVEST: July 12, 1976.

AREA HARVESTED FOR YIELD: 10 square meters.

DATES WHEN DIFFERENT NOTES WERE TAKEN:
Height - June 30, 1976.
Lodging - June 30, 1976.

Correlation Coefficients

N= No. of observations	Yield	Test weight	1000-kernel weight	Protein	Plant height	Lodging	Flowering	Ripening
Test weight	.16							
N	120							
1000-kernel weight	.18*	.42**						
N	120	120						
Protein	-.45**	-.08	-.03					
N	120	120	120					
Plant height	-.11	.31**	.36**	.41**				
N	120	120	120	120				
Lodging	-.05	.34**	.26**	.32**	.44**			
N	120	120	120	120	120			
Flowering	-.32**	-.48**	-.18*	.28**	-.08	-.26**		
N	120	120	120	120	120	120		
Ripening	-.04	-.38**	-.22*	.17	-.05	-.45**	.58**	
N	90	90	90	90	90	90	90	
Frost damage	.27	.36*	.26	-.01	-.01	.42*	-.20	-.30
N	30	30	30	30	30	30	30	30

** Significant at the 1% level.

* Significant at the 5% level.

Table 23. Agronomic and grain quality data for the 30 cultivars in the Eighth International Winter Wheat Performance Nursery grown at Milano, Italy in 1976.

Cultivars	Yield q/ha	Test weight kg/hl	1000-kernel weight g	Protein %	Plant height cm	Lodging %	Date of Flowering (days from Jan. 1)	Date of Ripening (days from Jan. 1)	Frost damage[a] 0-9	Seed grade 1-9
Kitakomi-Komugi	72.7	79.8	35.8	12.7	93	55	137	179	5	3
Flavio	71.8	82.5	35.9	12.9	102	23	135	183	0	2
Biserka	68.0	80.8	33.7	13.8	95	5	137	183	0	3
F26-70	65.6	79.2	38.1	13.7	108	26	137	180	0	3
Talent	64.5	75.7	29.3	14.3	90	60	141	180	5	4
Martonvasar 3	63.2	80.7	40.6	14.7	104	63	138	181	8	3
Dunav-1	61.7	79.2	35.0	13.8	95	2	137	182	5	2
Martonvasar 2	60.8	82.0	41.1	13.3	104	61	138	180	8	3
NE 68719	57.9	75.5	29.9	13.5	81	0	142	181	3	5
Maris Templar	57.1	76.4	44.7	15.2	103	51	145	184	0	4
Lerma Rojo 64	56.8	83.0	42.5	13.4	100	77	132	177	3	3
Galiafen	56.6	78.9	34.7	13.7	101	33	138	181	3	3
Priboy	56.3	82.4	41.4	13.8	104	95	141	181	3	3
Maris Huntsman	55.2	75.1	37.9	14.6	109	30	147	183	3	5
Odesskaya 51	53.9	82.4	38.1	13.9	106	70	139	179	5	3
Oasis	53.7	80.3	33.8	15.8	108	50	140	184	3	4
TRS 237	53.6	78.3	37.6	13.8	116	68	137	181	3	2
Bezostaya 1	53.5	81.6	38.9	14.6	104	85	139	178	8	2
Kormoran	52.9	72.7	35.6	15.5	103	3	145	184	0	4
Blueboy	52.6	74.1	33.7	13.1	104	23	142	184	0	4
Sage	51.1	81.6	35.3	14.7	115	70	139	179	3	4
Probstdorfer Karat	51.0	82.2	40.5	15.6	114	35	144	183	5	5
GKF-2	50.9	76.6	36.2	13.4	91	4	136	180	0	3
Sentinel	50.6	81.5	35.0	16.5	101	65	138	180	0	3
Atlas 66	49.8	80.1	36.5	16.9	124	65	139	183	3	4
GKF-8001	49.4	78.5	33.9	13.8	65	0	141	182	5	3
Rashid	47.0	82.8	42.8	15.8	118	80	136	179	3	2
WA 5829	44.2	76.2	31.1	13.3	76	5	143	182	0	5
Lely	42.5	74.2	33.3	15.5	98	0	149	185	0	4
Bordenave Puan Sag	36.6	82.4	31.6	16.4	114	85	142	180	0	2
Mean	55.4	79.2	36.5	14.4	101.4	42.8	139.7	181.2	2.8	3.3
L.S.D. of cultivar means (.05)	9.5	2.6	2.8	1.1	5.8	33.8	1.6	2.3	-	0.5
Coefficient of variation (%)	12.2	2.3	5.5	5.4	4.1	56.1	0.8	0.8	-	9.6

[a] One replication only.

ITALY

RIETI

COOPERATOR(S): G. Zitelli; E. Biaucolatte.

DATE OF PLANTING (EFFECTIVE GERMINATION): November 20, 1975.

PRECIPITATION DURING CYCLE OF TEST: 851.15 mm.

AMOUNT OF IRRIGATION APPLIED: None.

FERTILIZER USED: N; P_2O_5; K_2O (amounts not reported).

GENERAL DESCRIPTION OF CLIMATIC CONDITIONS DURING TEST: Not reported.

DISEASE DEVELOPMENT: Moderate infections of leaf rust (Puccinia recondita) and stem rust (P. graminis tritici) occurred.

INSECT, WEED OR PEST PROBLEMS: Not reported.

DATE OF HARVEST: July 20, 1976.

AREA HARVESTED FOR YIELD: 10 square meters.

DATES WHEN DIFFERENT NOTES WERE TAKEN: Not reported.

Correlation Coefficients

N= No. of observations	Yield	Test weight	1000-kernel weight	Protein	Plant height	Lodging	Flowering	Ripening
Test weight	.36**							
N	94							
1000-kernel weight	.34**	.50**						
N	120	94						
Protein	-.11	.02	.21*					
N	120	94	120					
Plant height	.51**	.27**	.08	.12				
N	120	94	120	120				
Lodging	.22*	.05	.25**	-.02	.003			
N	120	94	120	120	120			
Flowering	-.06	-.21*	-.19*	-.29**	-.59**	.14		
N	120	94	120	120	120	120		
Ripening	-.02	.004	-.19*	-.04	.12	-.08	-.05	
N	120	94	120	120	120	120	120	
Moisture	-.14	-.08					.04	.24**
N	120	94					120	120

** Significant at the 1% level.

* Significant at the 5% level.

Table 24. Agronomic, grain quality and disease data for the 30 cultivars in the Eighth International Winter Wheat Performance Nursery grown at Rieti, Italy in 1976.

Cultivars	Yield q/ha	Test weight kg/hl	1000-kernel weight g	Protein %	Plant height cm	Lodging %	Date of Flowering days from Jan. 1	Date of Ripening days from Jan. 1	Rust leaf sev. %	Rust stem sev. %	Grain moisture %	Seed grade 1-9
Flavio	44.8	75.1	33.1	12.3	80	80	143	187	80	25	11.7	4
TRS 237	39.2	77.2	38.1	14.3	102	78	136	197	70	32	11.8	4
Martonvasar 2	37.0	77.3	43.2	13.8	81	28	139	191	0	50	11.7	4
Blueboy	35.5	69.4	31.5	9.8	89	30	138	191	99	99	11.9	3
GKF-2	33.8	73.5	40.7	12.2	71	73	144	191	37	57	11.9	4
Odesskaya 51	32.6	76.4	38.9	12.4	83	3	137	191	15	57	11.7	3
Martonvasar 3	31.8	75.4	38.6	13.2	81	0	140	191	42	32	11.7	3
Probstdorfer Karat	31.1	74.1	34.2	13.0	99	5	133	191	0	40	12.0	4
F26-70	30.9	76.1	35.9	12.4	77	3	138	189	25	55	11.8	4
Lerma Rojo 64	30.3	75.2	42.0	14.3	73	33	137	189	0	35	11.8	4
Bezostaya 1	30.2	80.1	40.7	12.0	83	55	137	191	17	77	11.9	2
Oasis	29.8	76.8	39.6	14.0	84	55	134	191	0	0	11.9	3
Atlas 66	29.7	73.4	30.9	15.1	104	5	137	193	55	60	12.0	4
Sage	28.7	75.1	37.6	15.7	93	3	131	191	0	0	12.0	3
Galiafen	27.6	74.2	31.8	14.8	77	5	137	189	0	0	11.8	4
Lely	27.3	--	24.6	10.7	83	0	139	193	35	96	12.2	6
Sentinel	27.3	77.1	33.6	15.5	84	35	133	191	0	0	11.8	3
Priboy	27.1	74.3	42.0	12.6	76	10	137	191	25	67	11.7	4
Kormoran	27.0	--	26.5	11.3	75	35	140	197	25	67	12.5	6
Kitakomi-Komugi	27.0	71.6	33.7	11.7	77	88	140	191	80	80	11.7	3
Talent	27.0	73.8	35.7	12.2	66	0	140	191	87	15	12.0	4
Bordenave Puan Sag	26.9	74.9	29.6	13.6	103	0	135	191	30	45	11.9	3
Maris Templar	26.4	67.8	32.3	13.4	75	0	137	199	25	65	11.8	7
Dunav-1	24.2	73.8	35.6	14.3	58	43	146	191	15	62	11.9	4
Biserka	23.4	72.3	32.0	14.4	69	35	143	190	30	55	11.8	4
GKF-8001	22.9	74.1	34.9	12.3	54	5	144	191	0	40	11.9	4
NE 68719	19.4	70.7	28.5	13.3	68	33	140	191	30	30	12.0	5
Maris Huntsman	19.2	--	29.1	12.4	80	0	144	193	5	87	12.0	8
WA 5829	18.1	--	21.2	10.5	62	0	141	191	40	77	12.2	7
Rashid	16.8	72.9	33.0	12.8	95	35	133	189	96	96	11.9	3
Mean	28.4	74.7	34.3	13.0	79.9	25.7	138.3	191.4	32.1	50.0	11.9	4.1
L.S.D. of cultivar means (.05)	15.4	3.7	4.4	1.2	12.5	7.5	1.1	0.3	--	--	0.3	0.3
Coefficient of variation (%)	38.5	3.5	9.2	6.4	11.2	20.7	0.5	0.1	--	--	2.0	5.9

JAPAN

MORIOKA

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

DATE OF PLANTING (EFFECTIVE GERMINATION): September 23, 1975.

PRECIPITATION DURING CYCLE OF TEST: 635.5 mm.

AMOUNT OF IRRIGATION APPLIED: None.

FERTILIZER USED: Preplant: N = 90 kg/ha; P_2O_5 = 330 kg/ha; K_2O = 130 kg/ha.
Spring: N = 20.5 kg/ha (Ammonium Sulphate)

GENERAL DESCRIPTION OF CLIMATIC CONDITIONS DURING TEST: The duration of snow coverage was unusually short. There was some heterogeneity in soil fertility. Rainfall was below average in winter and during the ripening period.

DISEASE DEVELOPMENT: Infections of leaf rust (Puccinia recondita) and powder mildew (Erysiphe graminis) occurred but were unusually slight. Head scab (Gibberella roseum) was also noted.

INSECT, WEED OR PEST PROBLEMS: None.

DATE OF HARVEST: July 13, 17, 21, 23, and 27, 1976.

AREA HARVESTED FOR YIELD: 1.98 square meters.

DATES WHEN DIFFERENT NOTES WERE TAKEN:
Frost damage - March 25, 1976.
Winter Survival - April 15, 1976.
E. graminis - June 30, 1976.
P. recondita - July 3, 1976.
G. roseum - July 6, 1976.

Correlation Coefficients

N- No. of observations	Yield	Test weight	Protein	Plant height	Flowering	Ripening	Winter survival
Test weight	.09						
N	120						
Protein	-.48**	-.18*					
N	120	120					
Plant height	.56**	.03	.04				
N	120	120	120				
Flowering	.28**	-.67**	-.20*	.17			
N	120	120	120	120			
Ripening	-.11	-.50**	.06	.01	.50**		
N	120	120	120	120	120		
Winter survival	.47**	.08	-.46**	.40**	.44**	-.05	
N	60	60	60	60	60	60	
Frost damage	-.59**	-.01	.52**	-.43**	-.51**	-.03	-.88**
N	120	120	120	120	120	120	60

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

Table 25. Agronomic, grain quality and disease data for the 30 cultivars in the Eighth International Winter Wheat Performance Nursery grown at Morioka Iwate, Japan in 1976.

Cultivars	Yield q/ha	Test weight kg/hl	Protein %	Plant height cm	Date of Flowering (days from Jan. 1)	Date of Ripening (days from Jan. 1)	Winter survival[a] %	Frost damage 0-9	Leaf rust sev. %	Leaf rust resp.	Mildew sev. 0-9	Head scab sev. 0-9
F26-70	51.1	81.3	16.4	114	154	195	100	2	8	M-MS	2	2
Biserka	48.1	81.3	15.9	98	154	194	100	3	5	R	1	1
Blueboy	47.0	78.1	15.3	117	157	201	100	2	8	MS-S	4	2
Talent	44.7	80.9	15.5	93	156	191	100	3	7	M-MS	0	1
Maris Templar	44.6	72.6	15.7	112	164	205	100	3	10	MR-M	0	2
Oasis	42.6	82.0	16.1	114	156	195	100	2	5	R	0	1
GKF-2	42.0	80.1	15.2	99	155	195	100	2	12	MS-S	1	3
Lely	41.5	70.1	17.6	102	166	208	100	2	2	R-MR	2	2
Maris Huntsman	41.2	70.7	16.6	105	164	206	100	3	3	R-MR	0	2
Kitakomi-Komugi	41.0	83.9	15.0	103	153	199	100	3	32	S	3	2
WA 5829	40.1	78.7	13.1	88	161	205	100	2	12	MS-S	2	4
Dunav-1	38.0	80.5	16.8	92	154	197	100	3	4	R	0	1
Kormoran	34.7	74.2	16.4	98	162	205	100	2	2	R	0	3
Atlas 66	34.1	80.6	19.3	128	156	201	100	4	4	R	1	1
Probstdorfer Karat	31.9	79.7	15.7	111	161	204	100	2	12	MR-MS	0	3
Bezostaya 1	28.8	79.9	16.1	99	157	193	100	3	4	R-M	2	3
GKF-8001	27.2	79.9	14.9	75	158	202	100	3	3	R	1	3
Odesskaya 51	26.9	82.1	16.2	98	157	200	100	3	5	M-S	1	4
Sentinel	25.5	79.9	17.6	98	155	197	100	3	5	R-M	0	4
Bordenave Puan Sag	25.5	82.4	17.0	106	155	198	100	3	3	R	0	2
Martonvasar 2	24.5	78.8	17.6	94	157	201	100	3	4	R-MR	2	4
Martonvasar 3	24.3	80.0	16.9	94	157	201	100	4	10	M-MS	2	3
Flavio	22.1	78.7	16.4	75	153	198	58	9	38	S-VS	2	1
NE 68719	21.7	80.2	16.2	79	156	198	100	3	6	R-MR	4	2
Sage	20.6	81.0	17.9	93	156	199	100	4	6	R	0	3
TRS 237	20.0	75.2	17.4	117	156	201	100	3	5	M-S	0	2
Priboy	16.9	78.1	16.0	91	159	202	100	3	5	R	0	2
Rashid	14.1	79.5	17.3	92	149	200	65	8	65	VS	2	3
Galiafen	13.4	75.5	18.5	83	156	201	82	8	16	R-MR	0	4
Lerma Rojo 64	8.9	78.3	19.9	83	153	199	33	9	16	MR-S	2	3
Mean	31.4	78.8	16.5	98.3	156.9	199.7	94.5	3.4	10.6		1.1	2.3
L.S.D. of cultivar means (.05)	10.5	2.0	0.6	9.4	0.9	6.0	3.9	0.7	-		-	1.1
Coefficient of variation (%)	23.9	1.8	2.7	6.8	0.4	2.1	2.0	14.3	-		-	32.9
Local cultivars:												
Aobakomugi	29.8	80.5		93	150	191	100	3	10	S	2	1
Nanbukomugi	37.3	81.9		103	150	189	100	2	28	S	0	0

[a] Two replications only

JORDAN

AMMAN

COOPERATOR(S): Z. Ghosheh; I. Jaber; M. H. A. Aziz; H. Arni.

DATE OF PLANTING (EFFECTIVE GERMINATION): December 25, 1975. Effective germination January 5, 1976.

PRECIPITATION DURING CYCLE OF TEST: 183 mm.

AMOUNT OF IRRIGATION APPLIED: Not reported.

FERTILIZER USED: None.

GENERAL DESCRIPTION OF CLIMATIC CONDITIONS DURING TEST: A very dry year with rainfall considerably below average. April and May were hot, windy and dry; adversely affecting production.

DISEASE DEVELOPMENT: None were observed.

INSECT, WEED OR PEST PROBLEMS: None.

DATE OF HARVEST: July 12, 1976.

AREA HARVESTED FOR YIELD: 3.0 square meters.

DATES WHEN DIFFERENT NOTES WERE TAKEN: Not reported.

Correlation Coefficients

N= No. of observations	Yield	1000-kernel weight	Protein	Plant height	Flowering
1000-kernel weight	.35				
N	30				
Protein	-.10	-.17			
N	30	30			
Plant height	.06	.35	.28		
N	120	30	30		
Flowering	-.32**	-.28	.06	-.18*	
N	120	30	30	120	
Ripening	-.31**	-.32	.14	-.16	.81**
N	120	30	30	120	120

** Significant at the 1% level.

* Significant at the 5% level.

Table 26. Agronomic and grain quality data for the 30 cultivars in the Eighth International Winter Wheat Performance Nursery grown at Amman, Jordan in 1976.

Cultivars	Yield q/ha	1000-kernel weight[a] g	Protein[a] %	Plant height cm	Date of Flowering days from Jan. 1	Date of Ripening days from Jan. 1	Seed grade[a] 1-9
Flavio	25.2	25	14.1	43	131	163	4
Blueboy	23.0	26	14.5	49	131	163	4
Sage	22.9	22	13.4	50	129	161	2
Rashid	20.9	30	16.5	45	130	162	3
TRS 237	20.3	25	18.0	48	130	162	3
Martonvasar 3	18.7	28	14.5	48	131	162	2
GKF-2	18.2	34	15.6	58	130	162	4
Odesskaya 51	17.9	25	18.2	52	129	162	2
Atlas 66	17.8	24	20.6	55	130	162	4
Dunav-1	17.4	30	16.7	52	130	162	4
Bordenave Puan Sag	17.4	25	14.4	48	130	163	2
Priboy	17.4	25	13.2	46	130	161	2
GKF-8001	15.8	30	15.9	43	130	162	2
Talent	15.5	26	17.4	44	131	163	3
Oasis	15.4	20	18.2	43	130	162	3
Probstdorfer Karat	15.0	30	15.7	48	134	166	2
Lerma Rojo 64	14.5	25	16.9	41	131	163	3
Kitakomi-Komugi	14.4	25	16.1	45	130	163	3
NE 68719	13.7	20	15.4	46	133	166	3
Biserka	13.5	29	15.3	45	130	162	3
Martonvasar 2	13.1	28	19.3	51	130	162	2
Galiafen	12.5	24	16.1	46	131	163	4
Lely	11.2	21	16.8	36	132	166	3
Sentinel	10.6	21	17.2	50	130	162	3
Bezostaya 1	10.5	25	17.1	42	131	162	2
WA 5829	10.5	20	14.8	45	134	166	2
F26-70	10.1	25	12.9	45	130	162	3
Kormoran	7.7	19	19.9	51	134	166	6
Maris Templar	7.2	20	17.6	41	134	167	6
Maris Huntsman	5.4	20	16.3	44	134	164	6
Mean	15.1	24.9	16.3	46.6	130.9	162.9	3.2
L.S.D. of cultivar means (.05)	7.9	--	--	6.0	2.0	2.3	-
Coefficient of variation(%)	37.3	--	--	9.1	1.1	1.0	-

[a] One replication only.

KOREA

SUWON

COOPERATOR: H. O. Choi.

DATE OF PLANTING (EFFECTIVE GERMINATION): October 20, 1975.

PRECIPITATION DURING CYCLE OF TEST: 350 mm. (from October 21, 1975 to July 10, 1976).

AMOUNT OF IRRIGATION APPLIED: None.

FERTILIZER USED: N = 150 kg/ha; P_2O_5 = 137 kg/ha; K_2O = 72 kg/ha.

GENERAL DESCRIPTION OF CLIMATIC CONDITIONS DURING TEST: Not reported.

DISEASE DEVELOPMENT: Moderate attacks of leaf rust (Puccinia recondita) and stem rust (P. graminis tritici). Septoria tritici also seen.

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

DATE OF HARVEST: July 5, 1976.

AREA HARVESTED FOR YIELD: 3.6 square meters.

DATES WHEN DIFFERENT NOTES WERE TAKEN:
Winter survival - February 15, 1976.
Septoria tritici - June 10, 1976.
Puccinia recondita - June 15, 1976.
Puccinia graminis tritici - June 20, 1976.
Lodging - on date of ripeness.

Correlation Coefficients

N= No. of observations	Yield	Test weight	1000-kernel weight	Protein	Plant height	Lodging	Flowering	Ripening
Test weight	.60**							
N	112							
1000-kernel weight	.42**	.39**						
N	120	112						
Protein	-.70**	-.24*	-.22*					
N	120	112	120					
Plant height	.34**	.22*	.29**	-.10				
N	120	112	120	120				
Lodging	.08	.21*	-.07	.09	.40**			
N	120	112	120	120	120			
Flowering	-.37**	-.76**	-.28**	.10	-.14	-.15		
N	120	112	120	120	120	120		
Ripening	-.60**	-.78**	-.41**	.32**	-.31**	-.24**	.75**	
N	120	112	120	120	120	120	120	
Winter survival	.80**	.25**	.27**	-.68**	.31**	-.01	-.16	-.45**
N	120	112	120	120	120	120	120	120

** Significant at the 1% level.

* Significant at the 5% level.

Table 27. Agronomic, grain quality and disease data for the 30 cultivars in the Eighth International Winter Wheat Performance Nursery grown at Suwon, Korea in 1976.

Cultivars	Yield q/ha	Test weight kg/hl	1000-kernel weight g	Protein %	Plant height cm	Lodging %	Date of Flowering days from Jan. 1	Date of Ripening days from Jan. 1	Winter survival %	Rust Leaf sev. %	Rust Leaf resp.	Rust Stem sev. %	Rust Stem resp.	Septoria sev. 0-9	Seed grade 1-9
Martonvasar 2	62.3	77.5	42.8	13.9	99	0	145	173	100	12	R-MR	2	R	5	4
Bezostaya 1	61.5	78.3	43.4	13.6	98	0	146	175	100	27	MS	22	MR	4	3
Talent	59.8	77.8	32.6	14.1	84	0	144	176	85	11	R-MR	7	R-MR	4	5
Kitakomi-Komugi	59.3	78.5	39.7	13.0	92	0	142	174	85	37	MR	40	MS	3	4
F26-70	57.3	79.0	39.0	13.1	100	0	143	171	95	0	R	2	R-MR	3	2
Priboy	56.9	79.8	40.9	12.6	101	0	147	175	95	0	R	0	R	3	3
Blueboy	56.2	72.8	36.4	12.5	97	0	147	177	82	13	R-MR	6	R-MR	4	6
GKF-8001	51.5	76.3	39.7	13.3	60	0	147	178	90	10	MR	1	R	5	6
Odesskaya 51	50.9	80.8	40.7	13.1	103	3	146	172	95	7	MR-MS	1	R	7	3
Sentinel	50.8	77.5	32.8	15.2	98	15	143	171	100	52	MS-S	0		6	2
TRS 237	49.7	78.0	38.9	14.2	113	3	141	174	95	60	MR-MS	0		3	2
Martonvasar 3	48.9	78.5	42.6	13.4	96	0	147	172	90	7	MR	3	R-MR	6	4
Biserka	48.6	77.0	30.3	13.7	71	0	141	173	95	42	MR-MS	7	R-MR	4	4
GKF-2	48.2	75.5	37.3	13.6	83	0	143	173	100	57	MS-S	32	MR-MS	6	4
Atlas 66	47.7	75.5	33.7	15.4	114	28	147	175	70	6	R-MR	1	R-MR	2	5
Bordenave Puan Sag	46.6	80.3	34.6	14.4	107	15	144	174	80	2	R	0	R	6	2
NE 68719	46.5	77.3	29.9	13.2	74	0	156	176	100	25	MR-MS	3	R-MR	7	4
WA 5829	46.1	72.5	28.6	10.8	67	0	149	182	90	30	MR-MS	25	MR-MS	7	6
Sage	45.1	79.5	35.4	14.2	101	10	143	172	95	8	R-MS	7	R-MS	4	3
Dunav-1	44.7	76.8	39.4	14.1	84	0	142	173	95	7	MR	77	MS-S	5	5
Oasis	41.0	75.8	34.1	13.2	103	5	145	171	95	2	R-MR	3	R-MR	6	5
Probstdorfer Karat	39.9	74.5	32.1	14.2	105	0	149	179	100	25	MR-MS	6	R-MR	5	6
Maris Templar	39.1	66.0	39.3	13.1	89	0	154	183	95	20	MS	20	MS	5	7
Lely	36.0	67.5	29.5	13.9	92	0	153	184	86	50	MR-MS	11	R-MR	7	7
Kormoran	34.5	67.0	31.5	15.4	90	0	152	182	80	0	R	0	R	6	8
Maris Huntsman	31.0	67.3	36.2	15.2	95	0	152	183	95	11	MR	1	R	4	8
Flavio	20.4	72.3	32.9	15.7	71	0	148	180	35	77	MS-S	15	MR-MS	4	5
Rashid	12.8	71.5	31.0	17.3	92	0	145	184	40	65	S	45	MS-S	5	7
Galiafen	5.1	--	27.9	17.4	70	0	151	185	25	7	R-MR	0	R	5	8
Lerma Rojo 64	3.7	--	39.0	18.8	73	0	145	179	20	47	MR-MS	40	MS	6	8
Mean	43.4	75.4	35.7	14.2	90.7	2.6	146.2	176.4	83.6	23.9		12.6		4.9	4.9
L.S.D. of cultivar means (.05)	4.0	2.1	3.0	1.2	9.4	7.0	1.6	2.4	6.8	--		--		-	0.7
Coefficient of variation (%)	6.5	2.0	6.0	6.0	7.4	193.6	0.8	1.0	5.7	--		--		-	10.1

LEBANON

BEIRUT

COOPERATOR: A. Chaaban.

DATE OF PLANTING (EFFECTIVE GERMINATION): November 28, 1975.

PRECIPITATION DURING CYCLE OF TEST: 500 mm. (approx.).

AMOUNT OF IRRIGATION APPLIED: None.

FERTILIZER USED: N = 120 kg/ha; P_2O_5 = 100 kg/ha.

GENERAL DESCRIPTION OF CLIMATIC CONDITIONS DURING TEST: Extremely wet winter, heavy rainfall occurred at the end of April.

DISEASE DEVELOPMENT: A heavy infection of leaf rust (Puccinia recondita) was reported. Also some stem rust (P. graminis tritici).

INSECT, WEED OR PEST PROBLEMS: Some weed and bird problems.

DATE OF HARVEST: July 10, 1976.

AREA HARVESTED FOR YIELD: 2.7 square meters.

DATES WHEN DIFFERENT NOTES WERE TAKEN:
Rusts - June, 1976.

Correlation Coefficients

N= No. of observations	Yield	Test weight	Protein	Plant height	Flowering
Test weight	.40*				
N	30				
Protein	-.35	.15			
N	29	29			
Plant height	.001	.07	.43*		
N	30	30	29		
Flowering	-.55**	-.68**	.06	-.14	
N	30	30	29	30	
Ripening	-.51**	-.78**	-.02	-.10	.94**
N	30	30	29	30	30

** Significant at the 1% level.

* Significant at the 5% level.

Table 28. Agronomic, grain quality and disease data for the 30 cultivars in the Eighth International Winter Wheat Performance Nursery grown at Beirut, Lebanon in 1976.

Cultivars	Yield q/ha	Test weight[a] kg/hl	Protein[a] %	Plant height[a] cm	Date of Flowering[a] days from Jan. 1	Date of Ripening[a] days from Jan. 1	Rust[a] Stripe sev. %	Stripe resp.	Leaf sev. %	Leaf resp.	Stem sev. %	Stem resp.	Agronomic[a] score
Blueboy	46.2	74.1	11.5	110	165	203	0		10	S	10	S	4.5
Lerma Rojo 64	44.4	83.4	13.6	100	154	190	1	MR	0		0		4.5
Talent	43.7	77.3	12.9	88	161	200	0		30	S	5	S	5.5
F26-70	41.9	80.5	12.3	100	157	198	0		10	S	10	S	5.4
Martonvasar 2	41.9	79.9	13.1	105	163	200	0		5	MS	10	S	5.0
Flavio	41.3	79.5	10.3	95	158	196	0		50	S	5	S	6.0
GKF-2	39.8	79.6	12.1	85	160	198	0		30	S	10	S	6.0
Galiafén	39.5	75.0	12.8	100	161	202	0		10	MR	0		4.5
GKF-8001	38.9	79.4	12.3	65	166	203	0		5	MS	10	S	5.0
TRS 237	37.9	78.8	13.6	120	160	200	10	MS	60	S	10	S	6.0
Bordenave Puan Sag	37.0	81.1	13.0	120	166	202	0		1	MS	5	MS	5.0
Bezostaya 1	36.9	79.2	12.2	105	163	200	0		10	S	10	S	5.0
Biserka	36.2	78.5	11.9	90	156	195	0		10	MS	0		5.5
Kitakomi-Komugi	36.2	79.2	12.0	95	158	197	30	MS	20	S	10	S	5.0
WA 5829	36.1	75.8	10.9	75	174	210	5	MR	20	MS	10	S	6.5
Sage	35.2	80.1	13.2	105	165	202	0		5	MS	0		5.0
NE 68719	35.2	76.4	13.2	85	172	205	5	MS	10	S	5	MS	6.0
Priboy	33.8	79.8	12.4	95	164	202	0		5	R	5	S	5.0
Dunav-1	33.5	77.7	12.6	90	158	196	0		5	MS	5	S	5.5
Oasis	33.2	78.8	13.0	100	164	202	0		10	MR	0		4.5
Rashid	33.1	82.3	12.7	120	157	196	0		50	S	10	S	5.5
Probstdorfer Karat	32.2	78.0	13.2	105	170	207	0		30	MS	10	S	5.0
Martonvasar 3	32.1	79.6	13.7	95	163	200	0		10	MR	10	S	5.0
Odesskaya 51	32.0	81.1	12.1	90	164	201	0		1	MR	10	S	5.5
Atlas 66	31.4	77.2	15.1	120	165	202	10	MR	0		5	MS	5.0
Sentinel	29.4	77.8	13.2	100	174	202	0		10	MS	5	MS	5.5
Kormoran	27.1	79.3	13.3	90	177	210	0		10	S	5	S	5.5
Maris Templar	23.0	71.9	--	100	178	215	0		30	S	5	S	6.5
Maris Huntsman	19.2	70.3	12.4	102	176	215	0		20	S	10	S	6.0
Lely	15.2	69.2	12.3	97	180	215	5	MR	60	S	10	S	6.5
Mean	34.8	78.0	12.7	98.2	165.0	202.1	2.2		17.6		6.7		5.4
L.S.D. of cultivar means (.05)	7.4	--	--	--	--	--	-		--		--		--
Coefficient of variation (%)	15.1	--	--	--	--	--	-		--		--		--

[a] One replication only.

MEXICO

TOLUCA

COOPERATOR: CIMMYT

DATE OF PLANTING (EFFECTIVE GERMINATION): November 28, 1975.

PRECIPITATION DURING CYCLE OF TEST: Not reported.

AMOUNT OF IRRIGATION APPLIED: 16 applications (amounts not reported).

FERTILIZER USED: N = 200 kg/ha; P_2O_5 = 229 kg/ha.

GENERAL DESCRIPTION OF CLIMATIC CONDITIONS DURING TEST: Conditions were generally dry, average temperatures from November to February were below 0°C and fell to -13°C in late February. Frost destroyed many of the early cultivars.

DISEASE DEVELOPMENT: Frost damage was followed by a heavy infestation of root rots especially take all (Ophiobolus graminis).

INSECT, WEED OR PEST PROBLEMS: None (Trebonyl herbicide was used).

DATE OF HARVEST: July 10, 1976.

AREA HARVESTED FOR YIELD: Not reported (many plots were so severely damaged that no yield was obtained).

DATES WHEN DIFFERENT NOTES WERE TAKEN:
Lodging - June 24, 1976.
Height - June 24, 1976.

Correlation Coefficients

No. of observations=120	Protein	Plant height	Lodging	Flowering
Plant height	-.09			
Lodging	.16	.25**		
Flowering	-.44**	-.004	-.35**	
Ripening	-.52**	.22*	-.22*	.84**

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

Table 29. Agronomic and grain quality data for the 30 cultivars in the Eighth International Winter Wheat Performance Nursery grown at Toluca, Mexico in 1976.

Cultivars	Protein %	Plant height cm	Lodging %	Date of Flowering (days from Jan. 1)	Date of Ripening (days from Jan. 1)	Seed grade 1-9
Maris Templar	16.9	78	0	197	242	8
Maris Huntsman	17.6	89	0	192	243	8
Martonvasar 2	20.4	70	3	176	203	8
Dunav-1	21.5	63	0	173	200	8
Flavio	18.7	63	0	160	171	7
GKF-2	20.6	64	3	166	181	7
Biserka	21.8	64	1	165	180	8
TRS 237	18.7	80	1	164	194	5
Lely	18.4	66	0	202	230	6
Sentinel	18.7	66	5	180	203	6
Rashid	20.1	83	34	160	184	6
Kormoran	17.0	78	0	198	242	7
Kitakomi-Komugi	17.5	80	4	170	202	5
Talent	18.0	65	0	171	199	6
Bezostaya 1	18.2	68	0	180	203	5
Lerma Rojo 64	19.0	74	34	160	199	6
Bordenave Puan Sag	21.2	80	60	163	178	6
Galiafen	19.0	70	1	169	194	6
GKF-8001	18.6	53	0	179	201	5
Martonvasar 3	20.3	64	0	180	200	6
Oasis	22.4	74	5	169	183	6
Probstdorfer Karat	18.3	83	1	190	237	6
Sage	19.8	79	3	179	203	6
Odesskaya 51	18.5	74	6	173	194	5
Priboy	19.4	66	1	180	198	6
F26-70	19.1	84	19	167	191	5
WA 5829	15.6	74	16	185	232	5
NE 68719	18.8	69	0	180	203	5
Atlas 66	20.1	93	4	169	198	6
Blueboy	18.0	70	1	168	191	6
Mean	19.1	72.6	6.7	175.4	202.8	6.2
L.S.D. of cultivar means (.05)	1.5	11.0	15.3	4.6	12.5	0.2
Coefficient of variation (%)	5.7	10.7	161.9	1.9	4.4	2.3

NEPAL

KATHMANDU - (LALITPUR)

COOPERATOR(S): A. N. Bhattarai; B. K. Silwal; P. M. Shrestha.

DATE OF PLANTING (EFFECTIVE GERMINATION): October 30, 1975.

PRECIPITATION DURING CYCLE OF TEST: 107.2 mm.

AMOUNT OF IRRIGATION APPLIED: 2 flood applications (amounts not reported).

FERTILIZER USED: N = 120 kg/ha; P_2O_5 = 60 kg/ha; K_2O = 40 kg/ha.
(urea, super phosphate and potash).

GENERAL DESCRIPTION OF CLIMATIC CONDITIONS DURING TEST: The winter was mild and later conditions were satisfactory for the crop.

DISEASE DEVELOPMENT: Disease incidence was almost nil.

INSECT, WEED OR PEST PROBLEMS: None.

DATE OF HARVEST: Later half of May, 1976.

AREA HARVESTED FOR YIELD: 3.0 square meters.

DATES WHEN DIFFERENT NOTES WERE TAKEN: Not reported.

Correlation Coefficients

N = No. of observations	Yield	1000-kernel weight	Plant height	Flowering	Ripening
1000-kernel weight	.54**				
N	30				
Plant height	.28**	.41*			
N	120	30			
Flowering	-.41**	-.30	-.50**		
N	120	30	120		
Ripening	-.31**	-.30	-.50**	.84**	
N	120	30	120	120	
Shattering	.05	.03	-.01	-.08	-.01
N	120	30	120	120	120

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

Table 30. Agronomic data for the 30 cultivars in the Eighth International Winter Wheat Performance Nursery grown at Kathmandu, Nepal in 1976.

Cultivars	Yield q/ha	1000-kernel weight [a] g	Plant height cm	Date of Flowering days from Jan. 1	Date of Ripening days from Jan. 1	Shattering %
Lerma Rojo 64	62.0	44	107	121	160	0
Galiafen	56.3	38	101	138	178	1
Priboy	49.0	38	91	166	196	3
Odesskaya 51	48.8	44	93	165	195	0
Flavio	48.7	41	99	130	166	5
Bordenave Puan Sag	48.6	35	113	151	182	1
Martonvasar 2	48.6	42	89	162	189	1
Rashid	48.0	42	123	129	166	2
Martonvasar 3	47.9	40	88	165	192	1
Probstdorfer Karat	46.7	40	94	169	203	3
Talent	45.8	32	78	158	189	2
F26-70	45.4	38	98	154	186	3
Bezostaya 1	44.9	40	91	165	193	0
Kitakomi-Komugi	43.8	37	86	155	188	4
Sentinel	43.5	33	89	165	193	1
Blueboy	42.4	36	96	155	187	2
Biserka	41.7	34	83	150	180	1
Lely	41.6	34	80	171	208	2
WA 5829	41.6	35	65	166	201	2
Maris Huntsman	41.5	42	92	166	193	2
NE 68719	40.2	30	71	165	193	2
Sage	40.2	37	101	165	179	1
TRS 237	39.9	36	115	152	183	2
GKF-2	39.4	35	78	155	186	1
Kormoran	39.0	36	80	172	203	1
Dunav-1	38.2	35	79	150	181	1
Atlas 66	37.4	34	124	154	182	1
Oasis	35.5	32	90	158	186	1
Maris Templar	35.1	43	91	165	195	2
GKF-8001	35.1	31	57	166	195	1
Mean	43.9	37.1	91.3	156.7	187.5	1.5
L.S.D. of cultivar means (.05)	9.1	--	6.8	1.9	8.2	2.2
Coefficient of variation (%)	14.8	--	5.3	0.9	3.1	106.9

[a] One replication only.

NETHERLANDS

WAGENINGEN

COOPERATOR: A. C. Zeven.

DATE OF PLANTING (EFFECTIVE GERMINATION): October 16, 1975.

PRECIPITATION DURING CYCLE OF TEST: 392.1 mm.

AMOUNT OF IRRIGATION APPLIED: Not Reported.

FERTILIZER USED: P_2O_5 = 92 kg/ha; K_2O = 72 kg/ha.

GENERAL DESCRIPTION OF CLIMATIC CONDITIONS DURING TEST: Rather mild and dry winter, dry spring and a very dry, hot summer.

DISEASE DEVELOPMENT: Powdery mildew (Erysiphe graminis) was reported.

INSECT, WEED OR PEST PROBLEMS: None.

DATE OF HARVEST: July 15-30, 1976.

AREA HARVESTED FOR YIELD: 4.5 square meters.

DATES WHEN DIFFERENT NOTES WERE TAKEN:
Winter survival - March 4, 1976.
Erysiphe graminis - June 16, 1976.
Height - June 16, 1976.

Correlation Coefficients

No. of observations=120	Yield	Test weight	1000-kernel weight	Protein	Plant height	Lodging	Flowering	Ripening	Shattering
Test weight	.01								
1000-kernel weight	.09	.53**							
Protein	-.61**	.13	.001						
Plant height	-.10	.11	.08	.35**					
Lodging	-.43**	.10	-.03	.51**	.52**				
Flowering	.35**	-.04	-.13	-.14	.40**	.07			
Ripening	.20*	-.27**	-.21*	-.10	.32**	.01	.57**		
Shattering	-.29**	.14	.25**	.25**	.04	.14	-.33**	-.18*	
Winter survival	.11	.04	.01	.13	.25**	-.09	.38**	.43**	-.1

** Significant at the 1% level.

* Significant at the 5% level.

Table 31. Agronomic, grain quality and disease data for the 30 cultivars in the Eighth International Winter Wheat Performance Nursery grown at Wageningen, The Netherlands in 1976.

Cultivars	Yield q/ha	Test weight kg/hl	1000-kernel weight g	Protein %	Plant height cm	Lodging %	Date of Flowering days from Jan. 1	Date of Ripening days from Jan. 1	Shattering %	Winter survival %	Mildew sev. %	Seed grade 1-9
Talent	63.5	77.0	31.3	13.4	86	0	158	204	5	85	0	4
Maris Templar	60.3	75.5	39.6	13.1	101	0	162	212	11	89	0	3
Probstdorfer Karat	58.5	84.5	37.8	13.5	122	44	162	209	15	85	5	3
WA 5829	56.0	76.0	28.7	12.2	90	25	161	207	10	80	13	5
Priboy	55.5	83.5	40.8	13.4	108	70	160	209	14	84	8	3
Maris Huntsman	54.9	78.0	38.0	13.8	107	5	162	208	11	90	0	4
Odesskaya 51	54.7	82.0	38.7	14.1	108	73	160	197	10	80	5	3
Kormoran	54.4	76.5	32.2	13.6	111	13	163	212	10	90	15	4
Galiafen	53.8	80.0	32.0	12.9	96	0	159	204	15	86	10	4
Oasis	52.1	81.0	35.3	14.5	112	70	161	203	10	85	3	4
Blueboy	52.0	76.0	35.0	12.6	111	74	160	208	10	85	26	4
Lely	52.0	78.0	32.2	13.9	107	20	164	212	10	90	20	2
Flavio	51.9	83.0	34.7	13.9	62	0	155	200	11	85	13	2
Martonvasar 3	51.8	84.0	40.7	14.0	99	0	157	197	14	80	18	3
GKF-2	50.0	77.0	36.0	13.5	91	0	156	200	15	80	10	2
Dunav-1	49.7	77.5	37.2	14.9	80	0	155	200	15	88	7	3
GKF-8001	49.7	81.5	37.3	12.3	73	0	158	206	10	86	13	3
Bezostaya 1	49.0	83.5	40.0	13.3	99	3	157	203	10	90	21	2
TRS 237	48.1	79.0	33.8	15.4	124	64	156	208	10	85	6	2
Kitakomi-Komugi	47.7	78.0	33.5	13.1	93	43	153	197	15	85	23	4
Martonvasar 2	47.5	81.5	40.2	14.2	99	24	157	200	15	86	18	3
Biserka	46.7	78.0	35.5	15.0	79	0	154	200	15	80	13	2
F26-70	44.8	77.5	34.3	13.9	93	0	156	205	10	80	16	4
Sentinel	44.1	79.5	33.5	15.9	110	75	157	206	18	90	20	4
Atlas 66	42.1	79.0	34.0	16.5	119	61	160	208	11	90	11	4
Sage	41.7	80.0	34.8	16.5	108	75	158	209	15	85	12	3
NE 68719	41.4	78.5	28.1	14.3	89	40	159	207	10	80	55	4
Bordenave Puan Sag	41.0	84.5	36.5	16.6	117	80	160	197	10	90	26	2
Lerma Rojo 64	40.4	79.0	37.3	14.5	96	79	153	197	15	69	40	3
Rashid	31.3	80.5	38.6	16.0	111	80	156	206	15	86	45	4
Mean	49.5	79.7	35.6	14.1	99.9	33.8	158.2	204.3	12.2	84.8	15.7	3.1
L.S.D. of cultivar means (.05)	5.4	2.8	3.1	0.8	11.8	24.4	2.5	1.2	2.3	1.8	--	0.5
Coefficient of variation (%)	7.7	2.5	6.2	3.8	8.4	51.2	1.1	0.4	13.4	1.5	--	3.8%

NORWAY

VOLLEBEKK

COOPERATOR(S): M. Gullord; K. Ringlund.

DATE OF PLANTING (EFFECTIVE GERMINATION): September 8. 1975.

PRECIPITATION DURING CYCLE OF TEST: 476 mm. (September 1, 1975 to August 31, 1976).

AMOUNT OF IRRIGATION APPLIED: None.

FERTILIZER USED: On May 4, 1976 (amount and type not reported).

GENERAL DESCRIPTION OF CLIMATIC CONDITIONS DURING TEST: Exceptionally dry and warm weather.

DISEASE DEVELOPMENT: No serious disease occurred.

INSECT, WEED OR PEST PROBLEMS: None.

DATE OF HARVEST: August 6, 1976.

AREA HARVESTED FOR YIELD: 2.25 square meters.

DATES WHEN DIFFERENT NOTES WERE TAKEN: Not reported.

Correlation Coefficients

N= No. of observations	Yield	Test weight	1000-kernel weight	Protein	Plant height	Flowering
Test weight	.25*					
N	67					
Seed grade	.32**	.69**				
N	87	67				
1000-kernel weight	-.02	.06				
N	87	67				
Protein	-.50**	.28*	-.18			
N	63	54	63			
Plant height	.61**	.09	.10	-.15		
N	92	67	85	63		
Flowering	.11	-.56**	.41**	-.71**	.12	
N	94	67	86	63	92	
Winter survival	.91**	.51**	-.11	-.30*	.58**	-.07
N	120	67	87	63	92	94

** Significant at the 1% level.

* Significant at the 5% level.

Table 32. Agronomic and grain quality data for the 30 cultivars in the Eighth International Winter Wheat Performance Nursery grown at Vollebekk, Norway in 1976.

Cultivars	Yield q/ha	Test weight kg/hl	1000-kernel weight g	Protein[a] %	Plant height cm	Date of Flowering days from Jan.1	Winter survival %	Seed grade[b] 0-5
Bezostaya 1	35.5	83.5	41.8	12.0	70	169	79	4
Priboy	32.9	83.0	40.7	11.3	70	169	89	4
Odesskaya 51	30.2	83.5	39.4	12.4	69	168	79	4
GKF-8001	29.9	83.5	40.4	11.3	50	170	68	4
Oasis	29.3	81.6	35.1	14.1	68	165	90	3
WA 5829	28.5	82.4	36.3	10.9	57	168	64	4
Blueboy	26.7	79.5	38.3	12.0	68	168	76	3
Probstdorfer Karat	26.3	83.0	38.8	12.6	74	169	55	3
Martonvasar 2	25.8	83.4	42.7	13.2	65	169	71	4
Lely	24.6	76.5	38.3	10.9	62	174	45	3
F26-70	22.3	82.2	39.2	13.2	63	166	60	4
Sentinel	19.6	82.5	34.6	14.6	56	164	45	4
Martonvasar 3	19.4	82.4	41.3	13.4	63	168	53	4
Dunav-1	18.1	82.1	40.8	13.4	54	167	40	4
Kormoran	17.9	73.7	37.5	11.3	61	174	24	3
GKF-2	16.3	80.8	42.2	13.5	55	165	38	3
NE 68719	14.8	81.8	32.8	13.3	50	165	36	3
Maris Huntsman	14.7	76.7	44.3	11.6	63	174	23	2
Sage	12.3	83.4	37.4	14.5	60	163	33	4
TRS 237	10.8	80.8	36.8	15.1	63	164	35	4
Kitakomi-Komugi	6.8	77.5	39.4	14.6	52	165	13	3
Maris Templar	0.2	--	52.9	--	49	174	1	2
Bordenave Puan Sag	0.2	--	42.3	--	--	--	0	3
Flavio	0.1	--	37.6	--	--	168	0	3
Biserka	0.0	--	--	--	47	167	3	-
Atlas 66	0.0	--	--	--	63	168	2	-
Talent	0.0	--	--	--	45	169	0	-
Rashid	0.0	--	--	--	--	--	0	-
Lerma Rojo 64	0.0	--	--	--	--	--	0	-
Galiafen	0.0	--	--	--	--	--	0	-
Mean	15.4	81.4	39.1	12.8	60.6	167.9	37.3	3.5
L.S.D. of cultivar means (.05)	7.9	0.9	1.5	1.3	4.7	1.1	20.3	0.4
Coefficient of variation (%)	36.6	0.7	2.6	6.0	5.5	0.5	38.7	8.0
Local cultivar: Trond	41.1							

[a] Three replications

[b] 5 = best

POLAND

WARSAW
(RADZIKOW)

COOPERATOR: S. Starztcki.

DATE OF PLANTING (EFFECTIVE GERMINATION): September 18, 1975.

PRECIPITATION DURING CYCLE OF TEST: 376.4 mm.

AMOUNT OF IRRIGATION APPLIED: None.

FERTILIZER USED: N = 90 kg/ha (Ammonium Nitrate); P_2O_5 = 100 kg/ha (Super-phosphate); K_2O = 72 kg/ha (Potassium Chloride).

GENERAL DESCRIPTION OF CLIMATIC CONDITIONS DURING TEST: Cool and dry during the spring with favorable growing conditions later.

DISEASE DEVELOPMENT: Powdery mildew (Erysiphe graminis) was common. Leaf rust (Puccinia recondita) and Septoria sp. occurred.

INSECT, WEED OR PEST PROBLEMS: Some aphids present but caused inconsequential damage.

DATE OF HARVEST: August 8, 1976.

AREA HARVESTED FOR YIELD: 8 square meters.

DATES WHEN DIFFERENT NOTES WERE TAKEN:

Winter survival - March 30, 1976.
Heading - May 30-June 13, 1976.
Flowering - June 10-22, 1976.
E. graminis - June 25, 1976.
P. recondita - July 14, 1976.
Septoria sp. - July 17, 1976.
Height - July 20, 1976.
Lodging - July 20, 1976.
Ripeness - July 23-August 6, 1976.
Shattering - August 21, 1976.

Correlation Coefficients

N= No. of observations	Yield	Test weight	1000-kernel weight	Protein	Plant height	Lodging	Flowering	Ripening	Sha ter
Test weight	.36**								
N	116								
1000-kernel weight	.42**	.51**							
N	116	116							
Protein	.03	.29**	.20*						
N	116	116	116						
Plant height	.43	.32**	.26**	.31**					
N	120	116	116	116					
Lodging	-.23*	.10	.02	.39**	.32**				
N	120	116	116	116	120				
Flowering	.32**	.006	.17	-.17	.30**	-.14			
N	120	116	116	116	120	120			
Ripening	.01	-.17	.18*	-.20*	.08	-.02	.59**		
N	118	116	116	116	118	118	118		
Shattering	-.28**	-.45**	-.48**	-.29**	-.40**	-.10	-.39**	-.22**	
N	120	116	116	120	120	120	120	118	
Winter survival	.72**	.15	-.02	-.04	.39**	-.18	.14	-.33**	.06
N	120	116	116	116	120	120	120	118	12

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

Table 33. Agronomic, grain quality and disease data for the 30 cultivars in the Eighth International Winter Wheat Performance Nursery grown at Warsaw, Poland in 1976.

Cultivars	Yield q/ha	Test weight kg/hl	1000-kernel weight g	Protein %	Plant height cm	Lodging %	Date of Flowering (days from Jan. 1)	Date of Ripening (days from Jan. 1)
Kormoran	67.1	75.4	43.4	14.2	102	0	174	212
Biserka	65.6	76.3	44.2	15.1	83	0	163	208
Maris Huntsman	65.0	73.1	50.6	15.5	102	0	172	213
Maris Templar	64.0	72.8	53.9	15.3	95	0	172	215
Probstdorfer Karat	62.5	78.5	46.9	13.6	117	0	172	211
Priboy	59.2	78.1	49.8	13.6	101	1	167	211
F26-70	57.8	76.6	45.6	14.4	99	0	164	207
Martonvasar 3	57.6	77.6	46.9	14.6	99	0	167	209
Odesskaya 51	56.5	78.1	45.8	14.5	104	4	170	208
Bezostaya 1	54.4	79.2	48.9	13.8	101	0	170	209
Lely	52.5	74.4	40.0	13.7	102	0	174	214
Sage	52.2	76.4	45.0	17.5	105	20	167	208
Martonvasar 2	51.4	77.6	46.7	14.9	95	1	167	209
Dunav-1	50.3	75.8	42.5	15.2	79	0	164	209
Talent	50.2	73.1	36.8	14.5	84	0	167	210
Blueboy	49.8	72.9	39.7	12.6	109	16	171	214
Sentinel	48.6	76.6	40.9	18.0	104	30	167	207
Atlas 66	47.2	75.7	43.8	17.7	115	6	170	212
GKF-2	46.6	72.3	42.4	13.9	88	1	163	206
Bordenave Puan Sag	45.9	79.1	45.4	17.5	107	80	166	209
Oasis	45.2	77.7	45.7	16.5	115	44	167	208
TRS 237	44.4	75.6	45.6	15.5	114	1	165	209
GKF-8001	37.4	76.3	41.7	12.9	75	0	169	211
Kitakomi-Komugi	36.3	72.7	37.7	13.9	97	5	163	208
WA 5829	35.3	68.1	36.2	12.9	90	13	169	212
NE 68719	31.4	71.4	33.8	14.5	90	0	166	206
Flavio	25.7	74.6	43.6	14.5	76	0	168	211
Rashid	11.2	73.6	44.2	15.0	101	92	165	211
Galiafen	10.6	73.7	42.3	14.8	76	0	169	213
Lerma Rojo 64	0.0	--	--	--	78	0	163	210
Mean	46.1	75.3	43.8	14.8	96.7	10.5	167.7	209.9
L.S.D. of cultivar means (.05)	9.9	1.8	2.7	0.2	5.7	14.6	1.8	2.3
Coefficient of variation (%)	15.3	1.7	4.5	1.2	4.2	99.2	0.8	0.8
Local cultivars:								
Grana	60.5	76.7	46.8		104	9	171	214
Luna	53.1	74.3	40.2		93	1	168	212

Table 33. Agronomic, grain quality and disease data for the 30 cultivars in the Eighth International Winter Wheat Performance Nursery grown at Warsaw, Poland in 1976. Concluded.

Cultivars	Shattering	Winter survival	Leaf rust		Mildew	Septoria	Date of heading
			sev.	resp.	sev.	sev.	
	%	%	%		%	1-9	days from Jan. 1
Kormoran	8	79	12	MR-MS	28	4	164
Biserka	33	73	1	O-VR	37	7	152
Maris Huntsman	6	79	8	MR-MS	1	2	164
Maris Templar	6	65	3	O-MR	8	3	165
Probstdorfer Karat	5	84	25	MS-S	11	2	161
Priboy	5	70	16	MR-S	22	4	161
F26-70	26	88	25	MS-VS	67	8	154
Martonvasar 3	11	80	35	O-S	67	8	158
Odesskaya 51	13	75	26	MR-S	30	6	160
Bezostaya 1	5	85	11	O-MS	45	7	160
Lely	6	75	0		62	5	165
Sage	18	79	0		22	3	155
Martonvasar 2	13	78	12	MR-S	50	7	159
Dunav-1	30	71	7	O-MR	42	8	152
Talent	14	64	11	MR-MS	30	6	155
Blueboy	5	70	20	MR-S	70	5	161
Sentinel	6	78	5	O-MR	42	3	154
Atlas 66	4	58	8	MR-MS	21	2	158
GKF-2	16	76	11	O-S	75	8	152
Bordenave Puan Sag	6	80	0		17	3	153
Oasis	10	83	0		6	3	159
TRS 237	4	63	21	MS-S	22	3	153
GKF-8001	23	71	10	MR-MS	87	9	160
Kitakomi-Komugi	58	79	11	O-S	52	6	152
WA 5829	73	86	3	O-MR	92	9	160
NE 68719	25	88	2	O-MR	96	8	156
Flavio	14	14	22	MS-S	35	4	158
Rashid	12	7	57	MR-VS	55	4	154
Galiafen	8	2	6	R-MR	33	4	159
Lerma Rojo 64	38	2	2	O-MR	37	1	152
Mean	16.5	66.6	12.3		42.1	5.1	157.4
L.S.D. of cultivar means (.05)	9.3	10.7	--		--	-	1.7
Coefficient of variation (%)	40.0	11.4	--		--	-	0.8
Local cultivars:							
Grana	8	86	21	MS	29	4	163
Luna	5	69	50	MS-S	48	7	160

ROMANIA

FUNDULEA

COOPERATOR(S): N. Ceapoiu; G. H. Ittu; N. N. Saulescu.

DATE OF PLANTING (EFFECTIVE GERMINATION): October 15, 1975.

PRECIPITATION DURING CYCLE OF TEST: 459.8 mm. (August 1, 1975 to August 1, 1976).

AMOUNT OF IRRIGATION APPLIED: None.

FERTILIZER USED: N = 130 kg/ha; P_2O_5 = 160 kg/ha.

GENERAL DESCRIPTION OF CLIMATIC CONDITIONS DURING TEST: Precipitation was adequate in the autumn. The winter was warmer than normal and spring drier resulting in conditions favorable for plant development.

DISEASE DEVELOPMENT: Conditions favored leaf rust (Puccinia recondita) and powdery mildew (Erysiphe graminis) development.

INSECT, WEED OR PEST PROBLEMS: A herbicide was used.

DATE OF HARVEST: July 15, 1976.

AREA HARVESTED FOR YIELD: 3.75 square meters.

DATES WHEN DIFFERENT NOTES WERE TAKEN:
Frost damage - March 16, 1976.
Winter survival - March 19, 1976.
Height - June 10, 1976.
Erysiphe graminis - June 19, 1976.
Puccinia striiformis - June 20, 1976.
P. recondita - June 26, 1976.
Lodging - June 26, 1976.

Correlation Coefficients

No. of observations=120	Yield	Test weight	Protein	Plant height	Lodging	Flowering	Ripening	Winter survival
Test weight	.18*							
Protein	-.17	.20*						
Plant height	-.08	.24**	.44**					
Lodging	-.19*	.17	.34**	.20*				
Flowering	-.04	-.70**	-.05	.17	-.07			
Ripening	-.12	-.64**	-.07	.25**	-.09	.94**		
Winter survival	.45**	-.07	.01	.13	-.04	.14	.02	
Frost damage	-.38**	.04	.17	-.14	.17	-.17	-.13	-.67**

**Significant at the 1% level.

*Significant at the 5% level.

Table 34. Agronomic, grain quality and disease data for the 30 cultivars in the Eighth International Winter Wheat Performance Nursery grown at Fundulea, Romania in 1976.

Cultivars	Yield q/ha	Test weight kg/hl	Protein %	Plant height cm	Lodging %	Date of Flowering days from Jan. 1	Date of Ripening days from Jan. 1	Winter survival %	Frost damage 0-9	Rust: Stripe Sev. %	Rust: Stripe resp.	Rust: Leaf sev. %	Rust: Leaf resp.	Mildew sev. 0-9	Seed grade 1-9
Odesskaya 51	58.7	82.5	14.8	104	0	150	185	100	1	15	S	87	VS	3	1
Kitakomi-Komugi	57.9	81.8	13.8	83	0	147	183	100	5	0		85	VS	6	3
Priboy	57.2	82.7	14.3	101	5	152	188	100	1	0		60	S	5	3
Biserka	54.6	80.6	15.0	74	0	147	183	100	4	15	S	16	R	2	3
Lely	54.3	76.1	15.3	95	0	161	195	100	4	0		45	S	5	4
F26-70	53.2	80.8	15.3	96	0	149	185	100	3	12	S	77	VS	5	2
Lerma Rojo 64	53.1	81.5	16.1	78	0	145	181	80	8	0		42	S	3	3
Bezostaya 1	53.0	82.6	14.6	100	0	151	186	100	2	0		57	S	5	2
Sage	52.8	82.8	16.4	106	0	150	184	100	1	10	S	0		0	1
Flavio	52.8	80.1	14.4	86	0	148	183	100	6	0		65	VS	3	3
Martonvasar 2	52.5	82.3	15.0	98	0	150	185	100	3	0		52	VS	4	2
Dunav-1	52.3	81.1	15.0	78	0	148	183	100	4	77	S	27	MS-S	3	2
GKF-2	51.3	78.6	14.6	78	0	148	183	100	3	0		87	VS	3	3
Probstdorfer Karat	50.8	82.4	14.6	114	0	154	190	100	1	0		65	S-VS	3	2
Talent	50.4	79.8	15.6	78	0	152	185	90	7	0		22	S	0	3
Maris Templar	50.2	75.0	15.3	95	0	160	193	100	5	0		15	S	1	6
Blueboy	52.2	75.5	13.1	101	0	151	187	100	3	12	MS	35	S	6	4
Martonvasar 3	50.2	80.9	14.7	93	0	150	185	100	3	0		87	VS	5	2
Sentinel	50.1	81.7	16.5	100	1	148	185	100	1	15	S	15	R	2	2
Kormoran	49.0	74.2	15.3	96	0	159	192	100	3	0		32	S	4	3
NE 68719	48.7	77.6	14.3	73	0	151	184	100	1	25	S	50	MS-S	7	4
GKF-8001	48.5	79.6	13.6	60	0	151	187	100	4	0		92	VS	5	2
Maris Huntsman	47.6	72.2	14.9	100	0	160	193	100	4	0		40	MS-S	1	6
Bordenave Puan Sag	47.0	82.4	17.0	106	79	151	185	100	5	7	MS	0		2	1
Oasis	46.0	81.6	15.4	99	0	150	184	100	6	25	S	0		0	2
TRS 237	44.9	82.0	16.3	114	0	147	186	93	6	8	S	55	VS	1	1
Atlas 66	39.4	80.4	17.5	116	0	152	187	100	5	45	VS	7	R	2	4
WA 5829	38.8	73.3	14.2	75	0	154	189	100	1	12	S	99	VS	8	5
Galiafen	37.0	79.1	14.2	84	0	152	189	45	9	8	MS	45	MS	3	3
Rashid	30.1	82.5	15.5	103	35	147	184	80	8	0		99	VS	6	2
Mean	49.4	79.8	15.1	92.7	4.0	151.2	186.3	96.3	3.9	7.2		48.6		3.4	2.8
L.S.D. of cultivar means (.05)	4.6	1.1	0.9	4.7	15.9	--	--	1.7	0.4	-		-		-	0.3
Coefficient of variation (%)	6.7	1.0	4.2	3.6	281.9	0.0	0.0	1.2	7.1	-		-		-	8.9

REPUBLIC OF SOUTH AFRICA

BETHLEHEM
(DRYLAND PLANTING)

COOPERATOR: I. B. J. Smit.

DATE OF PLANTING (EFFECTIVE GERMINATION): May 17, 1976.

PRECIPITATION DURING CYCLE OF TEST: 353.4 mm.

AMOUNT OF IRRIGATION APPLIED: None.

FERTILIZER USED: N = 24 kg/ha; P_2O_5 = 82 kg/ha.

GENERAL DESCRIPTION OF CLIMATIC CONDITIONS DURING TEST: Fairly normal conditions occurred during the growing period and harvesting conditions were excellent.

DISEASE DEVELOPMENT: The season was exceptionally healthy but stem rust (Puccinia graminis tritici) and leaf rust (P. recondita) occurredlate in the season. Glume blotch (Septoria nodorum) was also reported.

INSECT, WEED OR PEST PROBLEMS: None.

DATE OF HARVEST: December 17, 1976 - January 5, 1977.

AREA HARVESTED FOR YIELD: 5.6 square meters.

DATES WHEN DIFFERENT NOTES WERE TAKEN:

P. graminis tritici - November 11, 1976.
P. recondita - November 11, 1976.
S. nodorum - November 11, 1976.
Height - December 17, 1976 -January 5, 1977.
Lodging - December 17, 1976-January 5, 1977.
Shattering - December 30, 1976-January 19, 1977.

Correlation Coefficients

No. of observations=120	Yield	Test weight	Protein	Plant height	Flowering	Ripening
Test weight	-.07					
Protein	-.19*	.25**				
Plant height	.12	.09	.16			
Flowering	.17	-.25**	-.62**	.01		
Ripening	.28**	-.20*	-.64**	.04	.91**	
Shattering	-.19*	.04	-.01	-.01	-.15	-.12

** Significant at the 1% level.

* Significant at the 5% level.

Table 35. Agronomic, grain quality and disease data for the 30 cultivars in the Eighth International Winter Wheat Performance Nursery grown at Bethlehem, South Africa (dryland) in 1976.

Cultivars	Yield q/ha	Test weight kg/hl	Protein %	Plant height cm	Date of Flowering: days from Jan. 1	Date of Ripening: days from Jan. 1	Shattering %	Rust: Leaf sev. %	Rust: Leaf resp.	Rust: Stem sev. %	Rust: Stem resp.	Septoria sev. 0-9
Talent	40.9	74.9	9.6	76	286	334	0	2	MS-S	6	O-S	0
Probstdorfer Karat	37.1	77.7	10.1	103	297	343	0	0		0		0
Bordenave Puan Sag	36.1	80.2	11.1	101	284	329	0	0		0	O-MR	0
Galiafen	35.8	73.2	10.7	91	283	335	0	0		0		3
Blueboy	35.4	71.2	8.8	95	283	334	0	9	S	52	S	0
GKF-8001	34.9	77.2	9.8	67	289	338	0	0		3	S	0
WA 5829	34.2	72.9	6.9	72	290	342	0	2	O-S	57	S	0
Bezostaya 1	34.0	61.3	10.4	91	288	328	0	0		0	O-S	0
Martonvasar 3	33.0	77.9	10.4	88	286	332	0	0		0		0
Priboy	31.5	77.2	8.7	93	289	335	0	7	O-R	6	S	0
Lely	31.5	70.2	7.6	82	317	354	0	0		60	S	0
Kormoran	31.3	70.3	8.3	89	310	346	0	0		25	S	0
GKF-2	31.2	73.5	9.9	79	283	329	0	0	O-MS	37	S	0
Maris Templar	31.0	70.6	8.4	83	313	355	0	2	O-R	60	S	0
Maris Huntsman	31.0	68.5	7.9	95	310	349	0	1	O-S	50	S	0
TRS 237	30.9	75.6	11.1	101	281	330	0	0	O-MS	5	O-S	0
NE 68719	30.7	72.5	9.0	76	290	336	0	4	R-MR	40	S	0
Odesskaya 51	30.6	78.4	9.4	89	289	331	0	0		0	O-S	0
Sentinel	30.5	76.6	11.0	91	285	331	0	0		0	O-S	2
Sage	29.6	75.7	10.1	94	286	334	24	0		0		3
Flavio	29.3	74.5	9.7	69	281	320	0	4	MR-S	22	S	0
Martonvasar 2	28.7	77.5	10.9	85	285	326	0	0		0	O-S	0
Kitakomi-Komugi	27.9	74.8	9.2	87	282	328	31	15	R-S	37	S	0
Biserka	27.2	74.1	12.2	65	280	323	10	2	O-S	62	S	0
Lerma Rojo 64	24.9	75.8	12.4	89	266	309	0	2	O-S	2	O-S	2
Atlas 66	24.4	76.2	11.4	105	286	334	0	0	O-S	1	O-S	0
Rashid	24.3	77.1	12.0	93	269	314	0	26	S	16	S	2
F26-70	24.1	75.7	9.5	84	284	330	15	2	O-MS	57	S	0
Dunav-1	24.0	74.7	10.6	69	284	332	0	2	O-MS	27	S	0
Oasis	24.0	77.3	10.0	84	284	331	0	0		0		0
Mean	30.7	74.4	9.9	86.1	287.8	332.9	2.7	2.7		20.8		0.4
L.S.D. of cultivar means (.05)	4.3	9.0	1.3	4.4	2.8	3.5	2.4	-		-		-
Coefficient of variation (%)	10.0	8.6	9.1	3.6	1.3	1.3	64.6	-		-		-

REPUBLIC OF SOUTH AFRICA

BETHLEHEM
(IRRIGATED PLANTING)

COOPERATOR: I. B. J. Smit.

DATE OF PLANTING (EFFECTIVE GERMINATION): June 1, 1976.

PRECIPITATION DURING CYCLE OF TEST: 353.4 mm.

AMOUNT OF IRRIGATION APPLIED: 197 mm.

FERTILIZER USED: N = 86 kg/ha; P_2O_5 = 124 kg/ha.

GENERAL DESCRIPTION OF CLIMATIC CONDITIONS DURING TEST: Fairly normal during the growing season and excellent harvesting conditions.

DISEASE DEVELOPMENT: Fewer than normal disease problems. Light stem rust (Puccinia graminis tritici) leaf rust (P. recondita) and Septoria sp. occurred.

INSECT, WEED OR PEST PROBLEMS: None.

DATE OF HARVEST: December 15, 1976-January 6, 1977.

AREA HARVESTED FOR YIELD: 5.6 square meters.

DATES WHEN DIFFERENT NOTES WERE TAKEN:
Puccinia graminis tritici - November 17, 1976.
P. recondita - November 17, 1976.
Septoria nodorum - November 17, 1976.
Height - December 15, 1976-January 6, 1977.
Lodging - December 15, 1976-January 6, 1977.
Shattering - December 29, 1976-January 20, 1977.

Correlation Coefficients

N= No. of observations	Yield	Test weight	Protein	Plant height	Flowering	Ripening
Test weight	.38**					
N	120					
Protein	-.03	.53**				
N	119	119				
Plant height	.13	.21*	.10			
N	120	120	119			
Flowering	-.25**	-.54**	-.69**	.09		
N	120	120	119	120		
Ripening	-.17	-.50**	-.67**	.09	.96**	
N	120	120	119	120	120	
Shattering	-.07	.01	.07	-.30**	-.32**	-.31**
N	120	120	119	120	120	120

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

Table 36. Agronomic, grain quality and disease data for the 30 cultivars in the Eighth International Winter Wheat Performance Nursery grown at Bethlehem, South Africa (irrigated) in 1976.

Cultivars	Yield q/ha	Test weight kg/hl	Protein %	Plant height cm	Date of Flowering (days from Jan. 1)	Date of Ripening (days from Jan. 1)	Shattering %	Rust: Leaf sev. %	Rust: Leaf resp.	Rust: Stem sev. %	Rust: Stem resp.	Septoria sev. 0-9
Blueboy	42.3	71.2	8.2	105	288	334	0	35	MS-S	60	S	0
Galiafen	41.8	74.7	9.5	98	288	336	0	0		0		4
Bezostaya 1	40.8	78.7	9.9	102	292	334	0	0		0	0-S	0
GKF-8001	40.6	77.6	9.2	72	295	340	0	0	0-MR	0	0-S	0
Bordenave Puan Sag	39.1	79.9	10.5	110	289	335	0	1	0-S	1	0-S	0
GKF-2	39.0	73.9	9.9	86	286	330	0	2	0-S	15	S	0
Odesskaya 51	38.5	79.0	9.5	99	292	331	0	0	0-MR	0	0-S	0
Talent	36.4	74.9	10.1	77	289	336	0	1	0-S	0	0-S	0
Martonvasar 2	36.3	79.0	10.1	96	289	332	0	0		1	0-S	0
Priboy	35.7	76.3	9.2	98	293	336	0	0	0-S	8	S	0
Probstdorfer Karat	35.6	80.5	9.4	113	306	352	0	0		0		0
F26-70	35.3	76.1	9.4	94	287	329	15	2	0-S	11	S	0
Flavio	35.3	73.7	9.4	82	283	322	20	11	0-S	21	S	0
Martonvasar 3	35.0	78.6	10.5	98	290	331	0	0	0-S	0		0
Sage	34.4	76.8	9.3	101	296	338	0	1	0-S	0	0-R	1
WA 5829	33.9	72.5	7.2	79	302	344	0	1	R-MR	52	S	0
Biserka	33.5	76.3	10.4	76	284	329	17	0	0-S	37	S	0
Kitakomi-Komugi	33.3	74.4	9.2	91	285	331	35	1	0-S	15	MS-S	0
Sentinel	32.7	74.1	10.4	104	295	337	0	3	0-S	6	R-S	1
TRS 237	32.5	78.1	11.0	101	283	330	0	1	0-S	2	MS-S	0
Maris Huntsman	31.3	68.6	8.3	101	317	357	0	1	0-S	75	S	0
Lerma Rojo 64	31.0	75.7	12.3	89	272	313	0	0		0		3
Oasis	30.7	77.0	9.7	94	287	330	11	0		0		0
NE 68719	30.2	71.5	8.9	85	303	348	0	4	0-S	72	S	0
Kormoran	30.1	69.7	8.7	98	316	354	0	1	0-MS	42	S	0
Maris Templar	29.9	72.6	8.4	95	319	359	0	1	MR-S	62	S	0
Dunav-1	29.8	75.7	11.6	77	286	333	17	0		21	S	0
Rashid	29.6	76.1	12.0	107	279	321	0	0		18	S	0
Atlas 66	28.9	76.1	10.8	115	292	335	0	2	MR-S	9	S	0
Lely	25.4	66.6	7.6	90	322	361	0	5	MS-S	69	S	0
Mean	34.3	75.2	9.7	94.4	293.4	336.5	3.8	2.4		19.9		0.3
L.S.D. of cultivar means (.05)	6.6	1.5	0.5	7.4	1.3	2.5	2.3	--		--		-
Coefficient of variation (%)	13.7	1.4	3.7	5.6	0.7	1.0	43.2	--		--		-

SWEDEN

SVALOF

COOPERATOR: G. Olsson.

DATE OF PLANTING (EFFECTIVE GERMINATION): September 18, 1975.

PRECIPITATION DURING CYCLE OF TEST: 529 mm. (September 1, 1975 to August 31, 1976).

AMOUNT OF IRRIGATION APPLIED: None.

FERTILIZER USED: N = 120 kg/ha; P_2O_5 = 48 kg/ha; K_2O = 47 kg/ha. (calcium nitrate and 0-7-13 compound).

GENERAL DESCRIPTION OF CLIMATIC CONDITIONS DURING TEST: Winter was normal except for the lack of snow and occasional strong winds;spring was normal while the summer was warm.

DISEASE DEVELOPMENT: Very little disease occurred except for a light attack of powdery mildew (Erysiphe graminis).

INSECT, WEED OR PEST PROBLEMS: None.

DATE OF HARVEST: August 4-12, 1976.

AREA HARVESTED FOR YIELD: 2.1 square meters.

DATES WHEN DIFFERENT NOTES WERE TAKEN:
Winter survival - April 18, 1976.
Erysiphe graminis - July 2, 1976.
Height - July 22, 1976.
Lodging - August 2, 1976.

Correlation Coefficients

N= No. of observations	Yield	Test weight	1000-kernel weight	Protein	Plant height	Lodging	Flowering	Ripening
Test weight	.23*							
N	105							
1000-kernel weight	.55**	.14						
N	108	105						
Protein	-.57**	-.04	-.10					
N	108	105	108					
Plant height	.33**	.04	.41**	.08				
N	108	105	108	108				
Lodging	-.45**	-.15	-.13	.16	.09			
N	108	105	108	108	108			
Flowering	.81**	-.04	.39**	-.45**	.44**	-.24*		
N	104	104	104	104	104	104		
Ripening	.29**	.36**	.36**	-.13	.33**	.15	.48**	
N	104	104	104	104	104	104	104	
Winter survival	.70**	.24*	.11	-.19*	.20*	.03	.38**	.12
N	120	105	108	108	108	108	104	104

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

Table 37. Agronomic, grain quality and disease data for the 30 cultivars in the Eighth International Winter Wheat Performance Nursery grown at Svalof, Sweden in 1976.

Cultivars	Yield q/ha	Test weight kg/hl	1000-kernel weight g	Protein %	Plant height cm	Lodging %	Date of Flowering (days from Jan. 1)	Date of Ripening (days from Jan. 1)	Winter survival %	Mildew sev. %	Pearling resistance	Seed grade 1-9
Maris Huntsman	82.3	77.5	48.3	13.1	98	4	176	219	100	0	6.7	4
Maris Templar	71.5	78.8	50.4	13.5	81	1	177	221	75	0	5.3	5
Kormoran	69.5	77.2	37.8	12.5	98	3	178	219	100	2	6.9	3
Lely	63.4	78.7	38.5	12.8	94	5	177	220	96	11	5.8	2
Talent	51.0	80.9	34.6	14.2	75	4	172	219	79	0	5.9	3
Probstdorfer Karat	48.9	81.1	42.4	14.2	100	65	174	220	98	0	6.8	1
Priboy	48.2	81.6	43.5	12.8	91	78	173	219	75	1	6.5	2
Martonvasar 3	42.0	80.7	44.8	15.3	85	65	172	220	91	6	6.7	2
Martonvasar 2	41.1	80.9	44.4	15.4	85	38	173	219	89	7	6.6	2
Odesskaya 51	40.8	82.0	43.0	14.8	89	31	173	219	60	1	6.3	2
Bezostaya 1	37.6	81.5	43.3	14.4	83	40	172	218	66	5	6.8	2
Blueboy	36.7	77.0	36.6	12.1	96	25	173	218	50	22	5.5	4
TRS 237	36.7	80.1	39.9	16.4	99	35	172	214	43	4	6.5	2
F26-70	36.2	78.3	37.1	14.5	83	4	172	217	53	10	6.7	3
GKF-2	35.1	78.2	41.6	15.3	80	8	171	216	79	3	6.4	3
NE.68719	34.6	77.6	31.6	15.5	74	31	172	216	99	26	6.3	4
GKF-8001	34.4	80.0	38.8	13.6	65	28	172	218	58	5	7.4	2
Dunav-1	29.5	77.5	36.4	15.8	69	0	171	215	33	4	6.2	3
Oasis	28.4	79.4	39.9	19.5	95	38	172	219	78	0	5.7	3
Biserka	25.7	77.5	36.6	16.2	68	0	171	212	30	5	5.6	3
Sentinel	25.5	78.1	35.0	20.0	85	40	171	217	98	5	6.4	3
Sage	24.4	77.7	38.5	20.2	93	55	172	216	99	1	6.5	2
WA 5829	22.9	77.0	29.5	12.9	71	78	173	218	94	4	6.1	4
Atlas 66	21.8	79.3	38.0	17.8	89	23	173	224	9	2	6.1	4
Bordenave Puan Sag	21.5	80.5	40.4	19.7	93	45	171	219	45	0	6.5	2
Kitakomi-Komugi	19.8	77.6	32.5	14.4	71	53	171	218	59	9	5.9	3
Rashid	2.9	--	38.1	16.7	86	85	--	--	1	8	5+7	4
Flavio	0.0	--	--	--	--	--	--	--	0	-	--	-
Lerma Rojo 64	0.0	--	--	--	--	--	--	--	0	-	--	-
Galiafen	0.0	--	--	--	--	--	--	--	0	-	--	-
Mean	34.4	79.1	39.3	15.3	84.9	32.6	172.8	218.0	61.7	5.2	6.3	2.6
L.S.D. of cultivar means (.05)	4.3	0.8	1.6	0.6	4.3	23.3	0.7	1.0	9.3	-	0.2	0.1
Coefficient of variation (%)	8.9	0.7	2.9	2.7	3.6	50.8	0.3	0.3	10.7	-	2.1	3.9

SWITZERLAND

ZURICH

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

DATE OF PLANTING (EFFECTIVE GERMINATION): October 9, 1975.

PRECIPITATION DURING CYCLE OF TEST: 698 mm.

AMOUNT OF IRRIGATION APPLIED: None.

FERTILIZER USED: N = 120 kg/ha; P_2O_5 = 80 kg/ha; K_2O = 160 kg/ha.

GENERAL DESCRIPTION OF CLIMATIC CONDITIONS DURING TEST: A mild winter gave rise to normal crop development in the spring. July was very dry.

DISEASE DEVELOPMENT: Powder mildew (Erysiphe graminis) was fairly severe and stripe rust (Puccinia striiformis) infection very light.

INSECT, WEED OR PEST PROBLEMS: None.

DATE OF HARVEST: August 5, 1976.

AREA HARVESTED FOR YIELD: 4.6 square meters.

DATES WHEN DIFFERENT NOTES WERE TAKEN:
Lodging - June 3, 1976.
Puccinia striiformis - June 17, 1976.
Erysiphe graminis - June 17, 1976.

Correlation Coefficients

No. of observations=120	Yield	Test weight	Flowering	Plant height	1000-kernel weight	Heading	Seed grade	Lodging
Test weight	.44**							
Flowering	.19*	.17						
Plant height	-.19*	-.10	.22*					
1000-kernel weight	.50**	.26**	.25**	.03				
Heading	.39**	.17	.89**	.08	.45**			
Seed grade	-.72**	-.66**	-.18*	.10	-.54**	-.33**		
Zeleny value	.03	.60**	.09	.09	.02	.05	-.33**	
Protein	-.32**	.14	.21*	.59**	-.06			.54**
Lodging	-.51**	-.14	.02	.43**	-.24**			

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

Table 38. Agronomic, grain quality and disease data for the 30 cultivars in the Eighth International Winter Wheat Performance Nursery grown at Zurich, Switzerland in 1976.

Cultivars	Yield q/ha	Test weight kg/hl	1000-kernel weight g	Protein %	Plant height cm	Lodging %	Date of Flowering days from Jan. 1	Date of Heading days from Jan. 1	Stripe rust sev. %	Stripe rust resp.	Mildew sev. %	Mildew resp.	Septoria[a] sev. %	Seed grade 1-9	Zeleny value
Talent	67.8	74.9	38.0	13.4	88	0	160	152	0		2	0-MR	65	3	34
Maris Templar	65.7	71.1	54.9	13.4	103	0	163	161	0		7	0-MR	74	3	25
Blueboy	62.5	74.8	41.5	12.4	113	19	161	152	0		25	M	86	4	30
GKF-2	62.3	69.2	44.4	12.4	91	0	155	148	0		15	MR	72	4	33
Maris Huntsman	62.2	66.2	49.6	13.6	108	0	163	158	0		2	0-MR	93	6	17
Lely	61.9	74.7	44.3	13.9	108	0	167	161	0		28	MR-S	--	3	30
Martonvasar 3	61.3	75.9	47.1	14.2	105	0	159	152	16	MR-M	17	MR	98	3	55
F26-70	61.0	73.0	42.0	12.9	100	0	155	147	3	0-MR	20	MR	76	4	41
Biserka	60.8	71.9	38.8	12.9	89	0	153	145	5	0-MR	21	MR-M	68	5	43
Flavio	59.7	70.5	39.7	11.7	95	0	155	148	0		15	MR	70	6	27
Probstdorfer Karat	58.4	76.0	45.3	14.6	121	8	162	154	0		15	MR	89	4	56
Martonvasar 2	58.4	75.7	47.3	14.4	104	0	159	152	5	0-MR	20	MR	--	4	48
Kormoran	57.8	70.0	42.1	13.5	106	0	166	161	0		20	MR	--	4	62
Bezostaya 1	57.8	76.7	46.5	14.0	104	0	158	152	0		21	MR-M	91	2	54
Priboy	57.4	74.1	47.2	13.4	110	8	160	152	0		10	MR	93	4	43
Dunav-1	55.6	72.6	40.4	13.0	84	0	153	145	0		18	MR-M	60	6	39
Galiafen	54.9	75.1	37.4	13.9	100	0	159	151	0		21	MR-M	66	5	41
Odesskaya 51	54.0	73.2	43.8	13.8	110	4	158	151	11	MR	15	MR	--	5	55
Atlas 66	52.8	76.6	39.3	16.5	130	40	160	149	0		21	MR-M	--	4	45
GKF-8001	51.2	74.8	46.4	13.7	71	0	159	152	5	0-MR	20	MR	71	5	46
TRS 237	51.1	63.6	39.3	15.1	130	19	155	148	5	0-MR	21	MR-M	81	7	33
WA 5829	49.4	67.9	35.7	11.3	85	4	162	155	0		23	MR-M	66	7	14
Sentinel	46.1	74.1	38.8	15.2	109	51	158	149	0		22	MR-M	--	5	60
Kitakomi-Komugi	45.5	62.1	38.4	12.1	99	6	154	146	0		25	M	--	6	13
Oasis	44.6	68.5	38.8	14.2	119	15	160	152	0		10	MR	94	7	28
Bordenave Puan Sag	42.4	72.1	38.1	16.3	119	62	160	152	0		37	M-S	84	6	56
Lerma Rojo 64	41.6	72.5	41.1	13.0	100	11	153	144	0		36	MR-S	74	5	35
NE 68719	40.1	71.3	34.2	14.0	88	0	160	152	11	MR	50	S	78	7	57
Sage	36.4	65.2	38.7	14.9	115	13	159	149	0		17	MR	97	7	34
Rashid	30.4	65.9	40.0	15.0	119	78	157	145	0		55	S	--	8	25
Mean	53.7	71.7	42.0	13.7	104.0	11.2	158.7	151.1	2.0		21.0		79.4	4.9	39.3
L.S.D. of cultivar means (.05)	4.4	1.2	2.0	0.6	5.4	21.5	1.8	1.2	-		--		--	0.9	4.1
Coefficient of variation (%)	5.9	1.2	3.3	3.1	3.7	136.8	0.8	0.6	-		--		--	13.8	7.4

[a] One replication only. Method of A. Bronnman, Proceedings of the 2nd IWW Conference, p. 442, 1975.

TURKEY

ANKARA

COOPERATOR(S): A. Bayraktar; K. Yakar; H. H. Gecit.

DATE OF PLANTING (EFFECTIVE GERMINATION): October 7, 1975.

PRECIPITATION DURING CYCLE OF TEST: Not reported.

AMOUNT OF IRRIGATION APPLIED: None.

FERTILIZER USED: N = 60 kg/ha; P_2O_5 = 137 kg/ha (Ammonium Nitrate and Diammonium Phosphate).

GENERAL DESCRIPTION OF CLIMATIC CONDITIONS DURING TEST: Winter was very severe with snow cover, however, no winter damage was reported. The spring was cloudy and wet.

DISEASE DEVELOPMENT: Stripe rust (Puccinia striiformis) and stem rust (P. graminis tritici) were reported as present.

INSECT, WEED OR PEST PROBLEMS: None.

DATE OF HARVEST: July 25, 1976.

AREA HARVESTED FOR YIELD: 6.0 square meters.

DATES WHEN DIFFERENT NOTES WERE TAKEN: None.

Correlation Coefficients

N= No. of observations	Yield	Test weight	1000-kernel weight	Protein	Plant height
Test weight	-.32				
N	30				
1000-kernel weight	.21	.15			
N	30	30			
Protein	-.13	-.10	-.16		
N	120	30	30		
Plant height	-.21*	.22	.17	.23*	
N	120	30	30	120	
Flowering	.33**	-.66**	-.12	-.22*	-.18*
N	120	30	30	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 Eighth International Winter Wheat Performance Nursery grown at Ankara, Turkey in 1976.

Cultivars	Yield q/ha	Test[a] weight kg/hl	1000-kernel[a] weight g	Protein %	Plant height cm	Date of flowering days from Jan. 1	Stripe rust[a] sev. %	Stripe rust[a] resp.	Stand[b] evaluation 1-9	Seed grade 1-9
Maris Huntsman	37.8	74.6	37.3	13.5	80	167	0		2	4
Lely	36.0	74.8	30.5	14.3	75	166	0		3	3
GKF-8001	36.0	81.8	38.0	12.2	59	158	0		3	2
Blueboy	35.7	77.0	31.0	16.8	86	157	0		3	4
Talent	35.6	78.7	36.5	14.0	70	160	0		4	4
Bezostaya 1	35.6	82.5	39.5	13.3	90	156	0		1	2
Maris Templar	35.1	75.1	40.3	14.3	76	166	0		2	4
Priboy	33.7	81.5	38.0	13.4	89	158	0		3	2
Martonvasar 2	33.7	71.8	41.3	14.2	83	157	10	MS	2	2
Probstdorfer Karat	33.4	81.9	35.8	13.5	97	160	10	MS	3	2
Flavio	33.2	81.3	33.0	13.5	73	155	0		3	4
Kitakomi-Komugi	33.2	81.8	36.5	13.8	78	150	10	S	1	3
Martonvasar 3	33.0	81.3	41.8	14.2	87	155	0		1	2
F26-70	32.3	81.0	40.0	11.9	85	155	0		1	3
GKF-2	31.6	81.1	39.0	14.0	75	153	0		2	3
Kormoran	31.6	73.2	32.3	13.8	76	166	0		5	3
WA 5829	30.2	79.0	27.5	14.5	64	160	5	S	3	5
Sentinel	30.1	80.5	31.5	15.3	79	154	10	MS	3	3
Odesskaya 51	30.0	82.4	39.0	13.6	83	157	5	S	3	2
Biserka	29.4	79.5	34.8	14.2	72	152	10	MS	3	2
Bordenave Puan Sag	29.2	81.4	31.5	15.6	96	156	0		3	2
Oasis	28.8	80.9	34.8	14.0	85	153	0		3	3
TRS 237	28.4	79.1	35.8	15.0	96	153	20	MS	3	2
Dunav-1	28.3	80.2	35.5	13.9	68	154	0		3	3
NE 68719	28.0	80.0	28.3	12.5	71	158	10	S	3	4
Lerma Rojo 64	27.1	82.2	41.3	16.4	83	150	0		3	3
Sage	26.7	81.9	35.0	14.0	89	155	0		3	2
Galiafen	25.7	76.8	30.8	14.3	78	158	0		6	4
Rashid	24.2	82.3	35.5	14.9	98	150	10	S	3	2
Atlas 66	23.1	76.9	35.0	13.0	98	162	10	MS	3	4
Mean	31.2	79.4	35.6	14.0	81.2	156.9	3.7		2.8	2.9
L.S.D. of cultivar means (.05)	3.5	--	--	0.2	4.8	2.6	-		-	-
Coefficient of variation (%)	7.9	--	--	1.1	4.2	1.2	-		-	0.0

[a] One replication only.

[b] Two replications only; 1 = very good stand.

TURKEY

ERZURUM

COOPERATOR(S): B. Yilmaz; A. S. Kiral.

DATE OF PLANTING (EFFECTIVE GERMINATION): September 24, 1975.

PRECIPITATION DURING CYCLE OF TEST: 500.1 mm.

AMOUNT OF IRRIGATION APPLIED: None.

FERTILIZER USED: N = 60 kg/ha; P_2O_5 = 60 kg/ha (applied at planting time and boot stage).

GENERAL DESCRIPTION OF CLIMATIC CONDITIONS DURING TEST: Conditions were better than average for growth of the crop.

DISEASE DEVELOPMENT: This was slow but a severe infection of stem rust (Puccinia graminis tritici) resulted. Also stripe rust (P. striiformis) was seen.

INSECT, WEED OR PEST PROBLEMS: Birds caused problems.

DATE OF HARVEST: August 23, 1976.

AREA HARVESTED FOR YIELD: 6.0 square meters.

DATES WHEN DIFFERENT NOTES WERE TAKEN:

Frost damage - April 10, 1976.
Winter survival - April 29, 1976.
Flowering - June 26-July 9, 1976.
Rusts - July 12 and July 28, 1976.
Ripeness - August 1-15, 1976.
Lodging - August 4, 1976.
Height - August 15, 1976.
Shattering - September 2, 1976.

Correlation Coefficients

N= No. of observations	Yield	Test weight	1000-kernel weight	Protein	Plant height	Flowering	Ripening	Shattering	Winter survival
Test weight	.35**								
N	120								
1000-kernel weight	.39**	.48**							
N	120	120							
Protein	-.68**	-.28**	-.35**						
N	119	119	119						
Plant height	.14	.20*	.31**	.27**					
N	120	120	120	119					
Flowering	.48**	-.12	.03	-.32**	.05				
N	120	120	120	119	120				
Ripening	.43**	-.04	.02	-.54**	-.27**	.60**			
N	120	120	120	119	120	120			
Shattering	-.14	-.37**	.03	.08	.07	.06	-.004		
N	120	120	120	119	120	120	120		
Winter survival	.59**	.48**	.38**	-.26**	.46**	.06	-.09	-.19*	
N	120	120	120	119	120	120	120	120	
Frost damage	-.62**	.02	-.11	.54**	.22	-.65**	-.65**	-.01	.10
N	30	30	30	30	30	30	30	30	30

** Significant at the 1% level.

* Significant at the 5% level.

Table 40. Agronomic, grain quality and disease data for the 30 cultivars in the Eighth International Winter Wheat Performance Nursery grown at Erzurum, Turkey in 1976.

Cultivars	Yield q/ha	Test weight kg/hl	1000-kernel weight g	Protein %	Plant height cm	Date of Flowering days from Jan. 1	Date of Ripening days from Jan. 1	Shattering %	Winter survival %	Frost[a] damage 0-9	Rust Stripe sev. %	Rust Stripe resp.	Rust Stem sev. %	Rust Stem resp.
Maris Templar	53.6	77.5	45.1	13.7	72	183	218	30	90	0	0	0-R	55	S
Blueboy	51.7	75.5	40.3	14.1	83	179	218	28	84	0	4	R-S	45	S
Lely	50.5	77.0	35.2	14.7	80	187	225	22	89	0	6	R	60	S
GKF-8001	49.1	80.3	41.4	13.5	54	180	224	10	89	0	0		40	S
WA 5829	49.0	78.8	35.7	11.6	66	182	223	6	85	1	27	S	35	S
Probstdorfer Karat	43.7	80.3	41.4	15.2	91	181	223	12	85	1	8	R-MS	25	MS-S
Kormoran	43.4	75.5	37.4	15.3	76	184	220	26	84	3	0	0-R	40	S
NE 68719	42.6	77.8	31.3	14.9	64	178	215	15	80	0	21	R-S	45	S
Bezostaya 1	40.4	80.0	43.3	15.1	88	180	218	15	94	2	1	R	25	MS-S
Martonvasar 3	39.4	79.8	43.7	15.8	88	178	216	18	90	2	7	R-S	45	S
GKF-2	39.0	78.5	43.4	14.6	76	178	215	6	93	3	10	MR-S	45	S
Martonvasar 2	37.9	78.8	44.6	15.3	87	180	216	9	96	2	1	R	35	S
Talent	37.8	77.5	36.8	15.1	75	180	218	16	83	3	2	0-R	20	MS-S
F26-70	37.8	81.0	41.7	14.8	86	177	214	10	88	4	3	0-S	45	MS-S
Priboy	36.3	80.0	44.9	15.0	88	178	217	24	86	3	6	R	40	MS-S
Maris Huntsman	35.7	76.0	42.8	14.7	76	183	218	19	88	2	0	0-R	55	MS-S
Kitakomi-Komugi	35.1	78.5	37.5	14.4	77	175	217	19	86	3	11	R-S	55	S
Odesskaya 51	34.0	78.0	41.7	17.0	85	180	216	20	81	2	15	S	40	MS-S
Sage	31.4	78.0	37.0	17.6	86	178	213	21	83	3	7	R-S	0	
Sentinel	28.8	77.3	33.4	18.1	86	177	214	7	83	4	7	R-MS	35	S
TRS 237	26.5	76.5	38.1	16.2	93	178	215	22	90	4	2	0-R	70	S
Bordenave Puan Sag	26.2	78.0	36.7	18.3	90	177	214	23	89	5	2	0-R	20	MS-S
Biserka	24.1	77.0	38.3	16.1	64	170	215	14	93	5	1	R	20	S
Oasis	20.0	78.0	35.6	17.3	81	180	214	25	84	3	17	MR-MS	0	
Lerma Rojo 64	19.6	79.0	40.3	17.3	69	174	215	20	50	3	6	R-S	55	S
Dunav-1	19.5	77.8	37.6	15.8	65	175	216	28	85	5	0	0-R	20	MS
Rashid	18.5	77.0	40.9	16.5	87	176	218	28	74	4	10	S	65	S
Atlas 66	17.8	75.5	32.4	19.1	83	180	217	10	80	3	40	MR-S	17	S
Flavio	11.2	77.3	35.5	15.9	50	181	218	16	35	2	0	0-R	75	S
Galiafen	9.4	71.5	32.7	17.0	63	179	220	27	13	1	15	0-MS	20	MR-MS
Mean	33.7	77.8	38.9	15.6	77.5	178.7	217.3	18.1	80.8	2.4	7.6		38.2	
L.S.D. of cultivar means (.05)	2.3	1.1	1.0	0.9	3.7	1.5	1.0	4.4	7.9	-	-		-	
Coefficient of variation (%)	4.9	1.0	1.8	4.1	3.4	0.6	0.3	17.1	6.9	-	-		-	

[a] One replication only.

TURKEY

ESKISEHIR

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

DATE OF PLANTING (EFFECTIVE GERMINATION): October 10, 1975.

PRECIPITATION DURING CYCLE OF TEST: 365 mm. (from September 1975 to August 20, 1976).

AMOUNT OF IRRIGATION APPLIED: 30 mm. (to facilitate germination).

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

GENERAL DESCRIPTION OF CLIMATIC CONDITIONS DURING TEST: Autumn was dry, causing late germination.

DISEASE DEVELOPMENT: Rust and other disease infections were light.

INSECT, WEED OR PEST PROBLEMS: None.

DATE OF HARVEST: August 5, 1976.

AREA HARVESTED FOR YIELD: 8 square meters.

DATES WHEN DIFFERENT NOTES WERE TAKEN:

Winter survival - February 5, 1976.
Date of flowering - June 1, 1976.
Puccinia striiformis - June 30, 1976.
P. recondita - July 10, 1976.
P. graminis tritici - July 20, 1976.
Date of ripening - July 20, 1976.
Date of lodging - July 25, 1976.
Date of shattering - August 10, 1976.

Correlation Coefficients

No. of observations=120	Yield	Test weight	1000-kernel weight	Protein	Plant height	Lodging	Flowering	Ripening	Shattering
Test weight	-.07								
1000-kernel weight	.35**	-.07							
Protein	-.38**	.04	-.05						
Plant height	.002	.19*	.13	.38**					
Lodging	-.27**	.15	.01	.13	.25**				
Flowering	.23*	-.21*	-.22*	-.37**	.06	-.03			
Ripening	.24**	-.22*	-.10	-.31*	.04	-.05	.64**		
Shattering	-.27**	.23*	-.03	.15	.39**	.67**	-.04	-.11	
Frost damage	-.53**	.06	-.16	.41**	-.03	.08	-.30**	-.13	.16

** Significant at the 1% level.

* Significant at the 5% level.

Table 41. Agronomic, grain quality and disease data for the 30 cultivars in the Eighth International Winter Wheat Performance Nursery grown at Eskisehir, Turkey in 1976.

Cultivars	Yield q/ha	Test weight kg/hl	1000-kernel weight g	Protein %	Plant height cm	Lodging[a/] sev.	Lodging[a/] %	Date of Flowering days from Jan. 1	Date of Ripening days from Jan. 1
Blueboy	47.5	76.4	36.9	12.9	99	0	0	161	197
Lely	45.3	78.4	33.7	12.5	89	0	0	167	202
Probstdorfer Karat	45.0	83.8	41.2	13.6	110	0	0	164	195
Maris Templar	43.8	76.3	47.3	14.1	86	0	0	161	202
Odesskaya 51	42.8	82.7	42.5	14.3	96	0	0	157	195
F26-70	42.7	79.4	40.8	13.6	84	0	0	157	193
Bezostaya 1	42.4	82.9	42.0	13.4	91	0	0	157	193
GKF-8001	42.4	82.5	38.3	12.6	64	0	0	159	195
Priboy	41.2	79.0	46.0	12.9	96	0	0	158	196
Maris Huntsman	40.7	73.3	43.1	13.7	86	0	0	165	198
Kormoran	40.4	77.7	35.6	13.3	83	0	0	169	199
Martonvasar 3	40.1	82.0	43.1	14.4	89	0	0	157	192
Sage	39.3	82.3	37.8	14.5	101	0	0	156	189
Martonvasar 2	38.8	74.4	46.0	14.5	88	0	0	157	190
NE 68719	38.6	79.0	32.2	13.7	78	0	0	159	193
GKF-2	38.2	74.6	43.6	13.7	71	0	0	155	190
Dunav-1	38.0	76.9	37.5	14.3	66	0	0	156	193
Sentinel	36.6	80.9	34.2	16.0	95	0	0	157	192
Kitakomi-Komugi	36.4	82.4	35.2	14.4	79	0	0	154	193
Flavio	36.3	75.8	35.7	14.0	70	0	0	157	191
Biserka	36.1	79.4	35.7	14.4	70	0	0	155	190
Talent	34.8	79.3	34.4	15.1	70	0	0	159	195
WA 5829	34.6	80.6	31.7	12.1	69	0	0	163	196
Lerma Rojo 64	33.7	82.1	43.7	16.2	86	0	0	153	186
TRS 237	33.1	80.8	36.6	14.9	99	0	0	157	191
Oasis	32.4	81.8	37.0	14.3	95	0	0	155	194
Bordenave Puan Sag	32.3	82.0	36.1	15.2	110	5	50	161	190
Atlas 66	32.3	75.5	33.5	16.9	116	0	0	158	197
Rashid	30.1	82.7	40.3	15.3	109	5	50	157	196
Galiafen	29.2	79.9	32.5	13.8	80	0	0	162	198
Mean	38.2	79.5	38.5	14.1	87.5	0.3	3.3	158.7	193.9
L.S.D. of cultivar means (.05)	4.4	2.1	2.1	0.9	6.6	2.1	-	3.0	3.1
Coefficient of variation (%)	8.2	1.9	3.8	4.6	5.4	447.2	-	1.4	1.1

[a/] Sev = degree of lodging; % = percentage of plot lodged.

Table 41. Agronomic, grain quality and disease data for the 30 cultivars in the Eighth International Winter Wheat Performance Nursery grown at Eskisehir, Turkey in 1976. Concluded.

Cultivars	Shattering %	Frost damage 0-9	Rust: Stripe sev. %	Stripe resp.	Leaf sev. %	Leaf resp.	Stem sev. %	Stem resp.	Seed grade 1-9
Blueboy	1	5	0		0	O-MS	12	S	3
Lely	0	5	2	O-S	12	O-S	42	S	4
Probstdorfer Karat	0	5	5	O-S	0	O-MS	21	S	2
Maris Templar	0	5	0		0	O-MR	27	S	3
Odesskaya 51	0	5	0		1	O-MS	10	O-S	2
F26-70	0	5	0		0	O-MS	1	O-S	2
Bezostaya 1	0	5	0		0		7	S	2
GKF-8001	0	5	0		0	O-MS	13	S	3
Priboy	0	6	0		0	O-MS	8	O-S	2
Maris Huntsman	0	5	0		0	O-MS	17	MS-S	3
Kormoran	0	4	0		0	O-S	9	S	3
Martonvasar 3	0	5	0		0	O-MS	6	S	3
Sage	4	5	0		0	O-MS	0		2
Martonvasar 2	0	5	0		0	O-MS	3	O-S	2
NE 68719	0	5	13	MS-S	0	O-MS	3	O-S	3
GKF-2	0	5	0		2	MS	3	O-S	2
Dunav-1	0	6	2	O-S	0		8	O-S	3
Sentinel	0	5	3	O-S	0	O-MS	0		2
Kitakomi-Komugi	0	6	0		0	O-MS	17	S	3
Flavio	0	7	3	O-S	4	O-S	3	O-S	3
Biserka	0	6	2	O-MS	0		5	O-S	2
Talent	0	6	0		0	O-MS	5	O-S	3
WA 5829	0	4	13	MS-S	0	O-MS	13	S	3
Lerma Rojo 64	0	7	0		0	O-MS	0		3
TRS 237	0	6	25	S	2	O-S	6	O-S	2
Oasis	1	5	5	O-MS	0		0		3
Bordenave Puan Sag	8	5	0		0	O-MS	0		3
Atlas 66	0	7	11	MR-S	0		5	O-S	5
Rashid	9	7	1	O-S	16	O-S	30	S	2
Galiafen	0	8	0		0	O-MS	2	O-S	4
Mean	0.8	5.3	2.8		1.2		9.2		2.7
L.S.D. of cultivar means (.05)	2.4	0.5	-		-		-		0.5
Coefficient of variation (%)	224.1	6.9	-		-		-		12.2

UNITED STATES

CALIFORNIA

DAVIS

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

DATE OF PLANTING (EFFECTIVE GERMINATION): October 29, 1975.

PRECIPITATION DURING CYCLE OF TEST: 97 mm.

AMOUNT OF IRRIGATION APPLIED: 280 mm. (in 2 sprinkle and 3 flood applications).

FERTILIZER USED: N = 55 kg/ha (Ammonia gas).

GENERAL DESCRIPTION OF CLIMATIC CONDITIONS DURING TEST: Very dry conditions were experienced throughout the whole growing season.

DISEASE DEVELOPMENT: Stripe rust (Puccinia striiformis) was observed at the heading stage and became severe during the grain filling period on susceptable lines.

INSECT, WEED OR PEST PROBLEMS: None.

DATE OF HARVEST: July 7, 1976.

AREA HARVESTED FOR YIELD: 2.97 square meters.

DATES WHEN DIFFERENT NOTES WERE TAKEN:
Puccinia striiformis - May 17, 1976.
Lodging - June 2, 1976.
Shattering - Before harvest - June 15, 1976.
After harvest - July 10, 1976.

Correlation Coefficients

N= No. of observations	Yield	Test weight	Plant height	Lodging	Flowering
Test weight	.19*				
N	120				
Plant height	-.43**	.15			
N	120	120			
Lodging	-.20*	.44**	.47**		
N	120	120	120		
Flowering	-.42**	-.46**	-.09	-.31**	
N	120	120	120	120	
Ripening	-.38*	-.04	-.15	-.17	.83**
N	30	30	30	30	30

** Significant at the 1% level.

* Significant at the 5% level.

Table 42. Agronomic, and disease data for the 30 cultivars in the Eighth International Winter Wheat Performance Nursery grown at Davis, California, USA in 1976.

Cultivars	Yield q/ha	Test weight kg/hl	Plant height cm	Lodging %	Date of Flowering (days from Jan. 1)	Date of Ripening[a] (days from Jan. 1)	Shattering %	Stripe rust[a] sev. %	Stripe rust[a] resp.
Flavio	70.6	78.0	108	9	167	204	0	0	
WA 5829	69.5	76.9	88	0	190	220	1	30	MR
Blueboy	68.5	73.0	121	4	181	209	0	0	
F26-70	67.0	79.6	119	28	170	208	0	5	MR
GKF-2	66.3	76.5	103	11	171	210	0	0	
Kitakomi-Komugi	65.6	77.4	111	10	172	211	0	10	MR
Dunav-1	65.6	78.1	102	10	170	215	3	2	
Biserka	64.5	77.3	103	1	170	202	0	0	
NE 68719	61.0	76.8	92	0	184	213	1	5	MR
Talent	60.3	73.8	97	0	176	213	0	0	
Lerma Rojo 64	60.2	78.8	122	53	159	198	0	2	
Martonvasar 3	58.5	79.0	113	19	175	212	0	2	
Priboy	53.0	79.5	120	78	179	212	0	10	R
Martonvasar 2	52.4	79.5	119	45	177	221	4	0	
GKF-8001	51.3	77.6	77	0	182	215	0	0	
Bezostaya 1	50.7	79.9	118	28	176	212	0	0	
Galiafen	50.6	74.5	123	23	172	211	0	0	
Sage	49.7	79.9	133	85	183	216	0	0	
Odesskaya 51	49.3	80.6	117	50	176	212	0	0	
Lely	48.8	72.4	109	0	194	230	20	0	
TRS 237	44.4	76.6	135	18	171	208	0	5	
Sentinel	43.0	78.0	122	33	183	219	15	2	R
Rashid	42.4	80.7	124	99	163	212	0	5	S
Oasis	41.8	78.5	120	73	173	213	0	50	S
Probstdorfer Karat	38.6	79.2	128	4	190	223	20	0	
Bordenave Puan Sag	36.4	79.2	139	44	181	210	0	0	
Maris Templar	36.1	73.8	108	0	193	226	18	0	
Kormoran	33.3	71.3	112	0	190	221	25	0	
Atlas 66	33.2	73.6	142	36	183	207	0	5	
Maris Huntsman	32.0	72.6	116	1	191	228	35	0	
Mean	52.1	77.1	114.5	25.3	177.9	213.7	4.7	4.4	
L.S.D. of cultivar means (.05)	8.6	2.0	5.7	24.5	2.8	--	-	-	
Coefficient of variation (%)	11.7	1.8	3.5	69.0	1.1	--	-	-	

[a] One replication only.

UNITED STATES

COLORADO

FORT COLLINS

COOPERATOR: J. R. Welsh.

DATE OF PLANTING (EFFECTIVE GERMINATION): September 15, 1975.

PRECIPITATION DURING CYCLE OF TEST: 331 mm.

AMOUNT OF IRRIGATION APPLIED: None (adequate soil moisture supplied by water table).

FERTILIZER USED: None.

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

DISEASE DEVELOPMENT: The plots were inoculated with stem rust (Puccinia graminis tritici) races 15B-2 and 56 on May 20, 1976.

INSECT, WEED OR PEST PROBLEMS: None.

DATE OF HARVEST: August 12, 1976.

AREA HARVESTED FOR YIELD: 4.4 square meters.

DATES WHEN DIFFERENT NOTES WERE TAKEN:
Winter survival - April 15, 1976.
Heading - June 1-14, 1976.
Height - July 20, 1976.
Puccinia graminis tritici - July 20, 1976.
Lodging - July 20, 1976.

Correlation Coefficients

N= No. of observations	Yield	Test weight	Protein	Plant height	Lodging	Flowering
Test weight	-.18					
N	30					
Protein	-.43**	.59**				
N	117	30				
Plant height	.17	.17	.24			
N	30	30	30			
Lodging	-.07	.16	.31	.36*		
N	30	30	30	30		
Flowering	.03	-.43*	-.19	.13	-.23	
N	30	30	30	30	30	
Winter survival	.80**	.007	-.28**	.24	-.10	-.003
N	120	30	117	30	30	30

** Significant at the 1% level.

* Significant at the 5% level.

Table 43. Agronomic, grain quality and disease data for the 30 cultivars in the Eighth International Winter Wheat Performance Nursery grown at Fort Collins, Colorado, USA in 1976.

Cultivars	Yield q/ha	Test[a] weight kg/hl	Protein %	Plant[a] height cm	Lodging[a] %	Date of flowering[a] days from Jan. 1	Winter survival %	Stem rust[a] sev. %	Stem rust[a] resp.	Seed grade 1-9
Probstdorfer Karat	59.3	73.5	14.3	112	10	156	100	80	S	4
Martonvasar 2	55.2	72.9	15.8	99	10	152	100	40	S	4
Talent	54.6	71.1	14.4	81	10	154	100	40	S	5
Kitakomi-Komugi	54.2	69.5	14.1	86	10	152	100	50	S	5
Odesskaya 51	53.3	74.2	15.6	96	10	154	100	40	S	4
Sentinel	53.2	73.3	17.2	112	50	154	100	5	R	5
NE 68719	52.7	70.7	14.9	89	10	154	100	80	S	4
Kormoran	52.5	66.3	15.2	102	10	162	100	80	S	5
Priboy	52.0	75.3	14.2	107	10	154	100	20	S	4
Bezostaya 1	51.8	74.4	14.9	109	10	153	100	80	S	3
GKF-2	50.9	71.7	14.4	89	10	152	100	10	S	5
Blueboy	50.4	66.2	12.5	107	10	155	100	70	S	5
WA 5829	49.9	61.9	11.4	79	10	157	100	90	S	5
Martonvasar 3	48.8	72.0	16.0	102	10	154	100	90	S	4
Lely	48.8	62.8	14.9	104	10	165	100	90	S	5
Sage	47.7	72.6	16.6	112	70	152	100	1	R	4
Bordenave Puan Sag	46.6	75.1	17.2	99	30	153	100	10	R	3
Maris Templar	46.3	70.4	14.5	101	10	162	100	50	S	5
Maris Huntsman	45.7	75.7	14.6	99	10	162	100	60	S	6
F26-70	45.1	72.0	14.8	99	10	152	100	50	S	3
Dunav-1	42.2	73.0	15.2	74	10	151	100	1	R	4
Biserka	42.2	72.1	15.2	81	10	152	100	1	R	4
GKF-8001	41.0	71.6	14.4	74	10	154	100	90	S	4
TRS 237	38.0	69.4	15.6	117	10	153	100	1	R	4
Oasis	35.9	72.1	16.5	109	30	151	100	1	R	4
Atlas 66	31.2	73.7	18.6	127	10	156	75	20	S	4
Rashid	30.9	70.4	15.7	109	50	154	15	70	S	5
Flavio	21.0	70.4	15.7	74	10	153	6	40	S	5
Galiafen	13.7	70.7	16.2	76	10	157	5	20	S	4
Lerma Rojo 64	4.6	72.5	19.3	84	10	155	0	1	R	-
Mean	44.0	71.3	15.2	97.0	16.0	154.8	86.7	42.7		4.3
L.S.D. of cultivar means (.05)	8.6	--	0.7	--	--	--	6.2	--		-
Coefficient of variation (%)	13.9	--	3.6	--	--	--	5.1	--		-

[a] One replication only.

UNITED STATES

MONTANA

BILLINGS

COOPERATOR: P. Salm.

DATE OF PLANTING (EFFECTIVE GERMINATION): September 25, 1975.

PRECIPITATION DURING CYCLE OF TEST: 457 mm.

AMOUNT OF IRRIGATION APPLIED: None.

FERTILIZER USED: P_2O_5 = 115 kg/ha; K_2O = 60 kg/ha (Residue: N = 220 kg/ha; P_2O_5 = 230 kg/ha; K_2O = 120 kg/ha).

GENERAL DESCRIPTION OF CLIMATIC CONDITIONS DURING TEST: Spring and early summer were cool, becoming hot at maturity and harvesting times.

DISEASE DEVELOPMENT: Powdery mildew (Erysiphe graminis), stripe rust (Puccinia striiformis) and stem rust (P. graminis tritici) were seen.

INSECT, WEED OR PEST PROBLEMS: None.

DATE OF HARVEST: August 17, 1976.

AREA HARVESTED FOR YIELD: 2.82 square meters.

DATES WHEN DIFFERENT NOTES WERE TAKEN:

Winter survival - April 14, 1976.
Heading - June 5-25, 1976.
P. striiformis - July 2, 1976.
E. graminis - July 7, 1976.
P. graminis tritici - July 13, 1976.
Height - July 26, 1976.
Lodging - August 13, 1976.
Shattering - August 16, 1976.

Correlation Coefficients

N= No. of observations	Yield	Test weight	Protein	Plant height	Lodging	Flowering	Shattering
Test weight	.37**						
N	116						
Protein	-.11	.47**					
N	117	115					
Plant height	.40**	.15	-.03				
N	120	116	117				
Lodging	.12	.22*	.13	.32**			
N	120	116	117	120			
Flowering	-.41**	-.59**	-.13	.06	-.23**		
N	120	116	117	120	120		
Shattering	.12	.17	.17	.22*	.32**	-.20*	
N	120	116	117	120	120	120	
Winter survival	.81**	-.12	-.29**	.19*	-.05	-.18	-.006
N	120	116	117	120	120	120	120

** Significant at the 1% level.

* Significant at the 5% level.

Table 44. Agronomic, grain quality and disease data for the 30 cultivars in the Eighth International Winter Wheat Performance Nursery grown at Billings, Montana, USA in 1976.

Cultivars	Yield q/ha	Test weight kg/hl	Protein %	Plant height cm	Lodging %	Date of flowering days from Jan. 1	Shattering %	Winter survival %	Rust: Stripe sev. %	Rust: Stripe resp.	Rust: Stem sev. %	Rust: Stem resp.	Mildew sev. %	Mildew resp.	Seed grade 1-9
Bordenave Puan Sag	71.5	78.4	16.6	118	90	165	5	100	50	MS	1		50	VS	3
Sage	71.4	74.8	16.0	123	80	164	23	100	35	M	1		15	M	4
Sentinel	70.3	74.2	16.7	110	76	165	3	100	20	MR	12	MR	20	MS	4
Martonvasar 2	70.3	73.5	13.8	98	0	165	0	100	20	MR	57	MS-VS	20	MS	3
Priboy	69.8	76.1	13.0	111	0	170	0	100	10	MR	52	MS-S	10	M	4
Probstdorfer Karat	69.8	74.2	12.6	122	0	170	0	100	5	VR	57	MS-S	10	M	4
Odesskaya 51	69.6	75.5	13.7	110	28	163	0	100	30	M	52	M-S	15	M	4
Oasis	67.8	73.8	14.0	115	43	161	13	100	60	S	1		20	MS	4
F26-70	65.4	71.6	13.5	101	0	165	5	100	5	R	55	MS-S	20	MS	5
Kormoran	64.3	65.8	14.2	114	0	176	10	100	20	MR	30	MR-MS	20	MS	5
Martonvasar 3	63.9	71.6	13.6	101	0	166	0	100	40	MS	70	S-VS	30	MS	4
TRS 237	63.5	74.5	15.2	123	5	162	5	100	15	MR	7	O-MR	15	M	4
GKF-2	63.2	70.7	14.2	90	0	162	0	100	10	MR	30	MR-MS	10	M	4
Talent	62.8	70.0	15.3	84	0	167	0	100	5	R	12	O-MR	5	R	4
Kitakomi-Komugi	61.8	71.3	13.1	93	20	163	13	100	15	MR	55	M-S	15	M	4
Blueboy	61.7	60.0	11.6	119	0	170	3	100	60	S	70	S-VS	40	S	5
Bezostaya 1	61.7	74.5	13.8	103	0	168	0	100	10	MR	67	S-VS	10	M	3
Biserka	56.5	71.3	15.2	79	0	167	8	85	5	R	3	O-MR	5	R	4
Dunav-1	56.0	72.0	15.5	77	0	163	3	100	5	R	22	MR-M	5	R	4
WA 5829	53.8	60.9	11.1	92	90	172	0	100	10	MR	47	M-VS	30	MS	5
Lerma Rojo 64	52.6	73.5	15.7	98	25	161	8	79	15	R	1		15	M	3
GKF-8001	52.4	70.0	14.4	71	0	170	0	100	1		37	MR-S	20	MS	4
Maris Templar	51.1	64.2	14.2	116	0	180	5	98	1		37	MR-MS	1		5
Atlas 66	50.6	74.5	17.5	113	0	174	3	58	25	M	10	MR	10	M	5
Maris Huntsman	50.4	59.3	13.8	109	0	180	0	99	1		50	M-S	1		6
NE 68719	49.9	61.9	13.0	94	5	165	0	100	80	VS	27	MR-M	50	VS	5
Lely	37.6	60.9	13.9	104	0	183	0	100	30	M	47	M-S	30	MS	6
Rashid	31.3	74.5	14.3	125	88	169	13	15	40	MS	62	MS-VS	40	S	3
Flavio	12.6	69.7	15.4	73	0	172	0	8	5	R	17	MR	5	R	4
Galiafen	5.3	68.4	15.6	80	0	172	0	3	20	MR	10	O-MR	20	MS	4
Mean	56.3	70.4	14.3	102.1	18.3	168.2	3.8	88.1	21.6		33.3		18.6		4.2
L.S.D. of cultivar means (.05)	7.4	1.9	0.6	6.9	18.0	1.7	9.2	10.4	--		--		--		0.3
Coefficient of variation (%)	9.3	1.9	3.0	4.8	69.9	0.7	170.0	8.4	--		--		--		5.5

UNITED STATES

NEBRASKA

LINCOLN

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

DATE OF PLANTING (EFFECTIVE GERMINATION): September 23, 1975.

PRECIPITATION DURING CYCLE OF TEST: 484.9 mm. (July 1, 1975 to June 30, 1976).

AMOUNT OF IRRIGATION APPLIED: None.

FERTILIZER USED: N = 12 kg/ha (Ammonium Nitrate); P_2O_5 = 26 kg/ha.

GENERAL DESCRIPTION OF CLIMATIC CONDITIONS DURING TEST: The winter was mild with little snow cover, however, winter kill was serious on the non-winter hardy types.

DISEASE DEVELOPMENT: Some powdery mildew (Erysiphe graminis) developed early in the season, very little Septoria tritici was seen. Also, leaf rust (Puccinia recondita) and stem rust (P. graminis tritici) were noted, but infection was light.

INSECT, WEED OR PEST PROBLEMS: None.

DATE OF HARVEST: July 6-14, 1976.

AREA HARVESTED FOR YIELD: 1.48 square meters.

DATES WHEN DIFFERENT NOTES WERE TAKEN:
Winter survival - March 25, 1976.
Erysiphe graminis - June 6, 1976.
Rusts - June 18, 1976.

Correlation Coefficients

N= No. of observations	Yield	1000-kernel weight	Protein	Plant height	Flowering
1000-kernel weight	.53**				
N	85				
Protein	-.72**	-.56**			
N	93	85			
Plant height	.56**	.25*	-.21*		
N	93	85	93		
Flowering	-.62**	-.62**	.76**	-.20	
N	92	85	92	92	
Winter survival	.89**	.13	-.46**	.62**	-.33**
N	120	85	93	93	92

** Significant at the 1% level.

* Significant at the 5% level.

Table 45. Agronomic, grain quality and disease data for the 30 cultivars in the Eighth International Winter Wheat Performance Nursery grown at Lincoln, Nebraska, USA in 1976.

Cultivars	Yield q/ha	1000-kernel weight g	Protein %	Plant height cm	Date of flowering days from Jan. 1	Winter survival %	Rust: Leaf sev. %	Rust: Leaf resp.	Rust: Stem sev. %	Rust: Stem resp.	Mildew sev. 0-9	Seed grade 1-9
Odesskaya 51	44.0	28.3	17.3	109	140	95	45	MS-S	38	S	2	3
Priboy	43.1	29.4	16.1	112	141	90	5	MS	50	S	3	4
Martonvasar 3	43.0	29.5	16.4	100	140	93	66	S	95	S	7	4
Bezostaya 1	41.1	28.4	16.4	103	141	75	30	MS	94	S	6	3
Martonvasar 2	40.9	29.4	17.1	100	141	85	17	MS	88	S	6	5
Sentinel	39.5	23.6	18.8	106	143	100	57	S	0	0-R	4	5
Sage	38.3	25.6	18.2	118	143	100	37	MS-S	0		6	3
GKF-8001	37.1	24.3	16.7	70	143	75	42	MS-S	76	S	4	4
NE 68719	35.4	18.4	17.5	94	143	100	81	S	66	S	8	5
Blueboy	33.8	19.6	17.1	108	141	89	11	MR-S	76	S	8	8
GKF-2	31.7	24.3	17.1	84	139	45	65	S	71	S	1	7
Oasis	31.3	26.1	17.9	110	139	98	3	0-MS	0		0	4
F26-70	30.5	25.1	17.1	94	140	49	67	S	88	S	2	5
Probstdorfer Karat	28.3	20.3	19.8	121	150	99	33	MS-S	50	S	2	5
WA 5829	22.5	16.5	17.9	83	151	90	68	S	38	S	8	7
Kormoran	20.1	18.1	22.0	97	154	86	27	MR	17	S	4	8
TRS 237	17.4	25.7	19.1	106	143	6	85	S	0		1	5
Kitakomi-Komugi	11.4	21.1	17.0	77	141	5	27	0-S	71	0-S	2	7
Lely	8.7	17.5	23.1	86	159	18	35	S	28	S	4	7
Maris Huntsman	6.3	22.4	19.7	90	158	19	42	R	28	MS-S	0	8
Dunav-1	5.6	25.1	20.6	65	145	6	42	MR-MS	16	MS-S	0	6
Maris Templar	4.5	20.6	20.4	83	158	7	27	MR-MS	10	MS-S	0	7
Talent	2.0	--	19.9	71	144	2	24	0-S	5	0-S	0	8
Biserka	1.2	--	20.8	60	142	1	--		--		-	-
Atlas 66	0.4	--	24.4	100	--	1	--		--		-	-
Flavio	0.0	--	--	--	--	0	--		--		-	-
Rashid	0.0	--	--	--	--	0	--		--		-	-
Lerma Rojo 64	0.0	--	--	--	--	0	--		--		-	-
Bordenave Puan Sag	0.0	--	--	--	--	0	--		--		-	-
Galiafen	0.0	--	--	--	--	0	--		--		-	-
Mean	20.6	23.6	18.5	94.9	144.9	47.7	40.7		43.7		3.4	5.5
L.S.D. of cultivar means (.05)	4.9	2.1	0.7	6.1	1.0	12.6	--		--		-	0.4
Coefficient of variation (%)	17.0	6.2	2.7	4.6	0.5	18.8	--		--		-	5.0

UNITED STATES

NEW YORK

ITHACA

COOPERATOR: N. F. Jensen.

DATE OF PLANTING (EFFECTIVE GERMINATION): September 5, 1975.

PRECIPITATION DURING CYCLE OF TEST: 1240 mm. (from August 1, 1975 to July 31, 1976).

AMOUNT OF IRRIGATION APPLIED: None.

FERTILIZER USED: Preplant: N = 22 kg/ha; P_2O_5 = 103 kg/ha; K_2O = 54 kg/ha.

GENERAL DESCRIPTION OF CLIMATIC CONDITIONS DURING TEST: The season was exceptionally wet.

DISEASE DEVELOPMENT: Barley yellow dwarf virus was epiphytotic and damaging.

INSECT,WEED OR PEST PROBLEMS: Birds.

DATE OF HARVEST: July 15-21, 1976.

AREA HARVESTED FOR YIELD: 2.97 square meters.

DATES WHEN DIFFERENT NOTES WERE TAKEN:
Winter survival - March 26, 1976.

Correlation Coefficients

N= No. of observations	Yield	Test weight	Protein	Ripening
Test weight	-.47*			
N	25			
Protein	-.50**	.58**		
N	104	25		
Ripening	.23	-.51**	-.47*	
N	26	25	26	
Winter survival	.76**	-.11	-.24*	-.26
N	120	25	104	26

** Significant at the 1% level.

* Significant at the 5% level.

Table 46. Agronomic and grain quality data for the 30 cultivars in the Eighth International Winter Wheat Performance Nursery grown at Ithaca, New York, USA in 1976.

Cultivars	Yield q/ha	Test weight[a] kg/hl	Protein %	Date of ripening: days from Jan. 1	Winter survival %	Seed grade 1-9
Maris Huntsman	19.0	65.8	10.0	197	88	6
Martonvasar 3	16.1	75.0	10.8	190	82	4
Probstdorfer Karat	15.2	74.1	10.4	194	88	5
Kormoran	14.7	68.4	10.6	194	82	5
Maris Templar	14.2	71.6	9.5	200	76	5
Lely	14.2	66.6	9.3	199	76	5
Bezostaya 1	13.1	73.5	10.7	193	83	5
Biserka	12.5	72.0	11.4	187	74	5
Dunav-1	12.4	73.7	11.6	188	78	5
Martonvasar 2	12.3	74.8	11.1	190	81	6
Talent	11.7	74.1	12.1	190	77	5
Odesskaya 51	11.4	76.2	12.6	191	84	5
Priboy	11.2	73.3	11.3	192	82	5
GKP-8001	11.1	75.2	11.5	192	87	4
GKP-2	10.9	73.7	11.8	188	82	5
F26-70	10.7	71.9	11.8	189	84	4
Sentinel	9.5	73.4	13.4	189	82	6
TRS 237	9.5	71.2	12.8	191	70	6
Blueboy	9.0	72.8	12.6	193	70	4
NE 68719	8.3	75.0	11.7	191	70	4
Kitakomi-Komugi	8.2	72.9	10.9	190	67	4
Atlas 66	8.1	74.8	13.0	193	16	4
Oasis	7.4	74.7	14.8	190	78	5
WA 5829	6.9	73.2	10.3	200	65	4
Sage	6.3	75.0	13.7	190	78	5
Bordenave Puan Sag	2.0	--	12.7	197	9	5
Flavio	0.0	--	--	--	0	-
Rashid	0.0	--	--	--	0	-
Lerma Rojo 64	0.0	--	--	--	0	-
Galiafen	0.0	--	--	--	0	-
Mean	9.5	72.9	11.6	192.2	63.4	4.9
L.S.D. of cultivar means (.05)	3.4	--	0.7	--	6.9	0.3
Coefficient of variation (%)	25.6	--	4.1	--	7.8	4.0

[a] One replication only.

UNITED STATES

NORTH CAROLINA

ROWAN COUNTY

COOPERATOR: C. F. Murphy.

DATE OF PLANTING (EFFECTIVE GERMINATION): October 7, 1975.

PRECIPITATION DURING CYCLE OF TEST: 639.3 mm.

AMOUNT OF IRRIGATION APPLIED: Not reported.

FERTILIZER USED: N = 101 kg/ha; P_2O_5 = 231 kg/ha; K = 122 kg/ha.

GENERAL DESCRIPTION OF CLIMATIC CONDITIONS DURING TEST: Autumn and winter conditions were good. Extreme drought occurred during the spring growth period.

DISEASE DEVELOPMENT: This was minimal.

INSECT, WEED OR PEST PROBLEMS: Not reported.

DATE OF HARVEST: June 3, 1976.

AREA HARVESTED FOR YIELD: 1.484 square meters.

DATES WHEN DIFFERENT NOTES WERE TAKEN:
Winter survival - March 29, 1976.
Frost damage - April 14, 1976.
Height - May 27, 1976.

Correlation Coefficients

N= No. of observations	Yield	Test weight	Protein	Plant height	Flowering	Winter survival
Test weight	.63**					
N	25					
Protein	-.56**	-.08				
N	120	25				
Plant height	.40**	.47*	.02			
N	120	25	120			
Flowering	-.49**	-.68**	.27**	-.39**		
N	120	25	120	120		
Winter survival	.55**	.52**	-.09	.37**	.006	
N	120	25	120	120	120	
Frost damage	-.55**	-.52**	.07	-.36**	-.006	-.96**
N	120	25	120	120	120	120

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

Table 47. Agronomic and grain quality data for the 30 cultivars in the Eighth International Winter Wheat Performance Nursery grown at North Carolina, USA in 1976.

Cultivars	Yield q/ha	Test weight[a] kg/hl	Protein %	Plant height cm	Date of flowering days from Jan. 1	Winter survival %	Frost damage 0-9	Seed grade 1-9
Talent	30.3	76.9	13.8	64	104	100	0	3
GKF-2	24.4	76.9	13.0	65	106	100	0	5
Martonvasar 3	24.0	77.0	15.6	70	110	100	0	3
Martonvasar 2	23.9	77.5	15.1	74	110	100	0	3
Bezostaya 1	23.7	78.3	15.0	71	109	100	0	2
Kitakomi-Komugi	22.2	76.4	13.9	74	104	100	0	3
Biserka	22.2	73.9	15.2	66	98	100	0	4
F26-70	22.0	77.1	15.9	32	106	100	0	3
Blueboy	21.4	75.5	15.5	74	108	100	0	3
TRS 237	21.3	76.5	15.2	88	107	100	0	2
Dunav-1	20.8	74.8	15.5	64	103	100	0	4
Oasis	18.4	76.4	18.1	70	106	100	0	3
Odesskaya 51	16.5	77.8	16.5	68	112	100	0	3
Priboy	16.0	77.1	16.5	73	112	100	0	3
Sentinel	15.6	76.5	16.5	61	115	100	0	2
GKF-8001	15.1	79.3	15.8	57	111	100	0	2
Lely	14.0	56.6	16.6	62	124	100	0	9
Probstdorfer Karat	13.9	66.2	17.1	62	122	100	0	7
Bordenave Puan Sag	11.9	78.7	16.7	74	110	100	0	2
Kormoran	11.5	63.2	17.5	55	121	100	0	6
Maris Huntsman	11.2	67.1	16.0	67	122	100	0	7
Maris Templar	10.7	60.6	15.2	56	124	100	0	6
Sage	10.5	76.8	17.7	70	114	100	0	3
NE 68719	10.4	74.2	17.6	54	117	100	0	4
Galiafen	6.8	55.5	16.2	61	116	43	9	8
Rashid	6.0	--	15.7	63	105	45	8	4
Atlas 66	5.7	--	20.4	84	109	100	0	3
WA 5829	5.4	--	15.9	52	120	100	0	5
Flavio	3.9	--	15.4	45	112	30	9	5
Lerma Rojo 64	0.9	--	18.1	54	113	8	9	7
Mean	15.3	73.1	16.1	66.0	111.5	90.8	1.1	4.1
L.S.D. of cultivar means (.05)	5.0	--	1.3	8.9	2.1	8.4	0.2	0.4
Coefficient of variation (%)	23.4	--	5.7	9.6	1.3	6.5	12.3	6.5

[a] One replication only.

UNITED STATES

OKLAHOMA

STILLWATER

COOPERATOR: E. L. Smith.

DATE OF PLANTING (EFFECTIVE GERMINATION): October 23, 1975.

PRECIPITATION DURING CYCLE OF TEST: 407.75 mm. (October 1, 1975 to June 30, 1976).

AMOUNT OF IRRIGATION APPLIED: None

FERTILIZER USED: Preplant (September 24, 1975) N = 38 kg/ha.
Topdress (February 20, 1976) N = 34 kg/ha.

GENERAL DESCRIPTION OF CLIMATIC CONDITIONS DURING TEST: A dry, rather mild winter was followed by moist conditions just prior to anthesis.

DISEASE DEVELOPMENT: Some leaf rust (Puccinia recondita) and Septoria (Septoria sp.) were observed, together with barley yellow dwarf virus. These infections were not considered serious.

INSECT, WEED OR PEST PROBLEMS: A spray was used to control aphids.

DATE OF HARVEST: June 17-27, 1976.

AREA HARVESTED FOR YIELD: 1.47 square meters.

DATES WHEN DIFFERENT NOTES WERE TAKEN:
Heading - April and May
Septoria sp. - May
Puccinia recondita - May and June
Ripening - June

Correlation Coefficients

N = No. of observations	Yield	Test weight	1000-kernel weight	Protein	Plant height	Flowering
Test weight	.67**					
N	104					
1000-kernel weight	.52**	.71**				
N	52	52				
Protein	-.50**	-.48**	-.46**			
N	104	104	52			
Plant height	.12	.14	-.11	.14		
N	104	104	52	104		
Flowering	-.46**	-.65**	-.69**	.38**	.36**	
N	104	104	52	104	104	
Ripening	-.33**	-.56**	-.69**	.26**	.41**	.94**
N	104	104	52	104	104	104
Winter survival	.85**					
N	120					

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

Table 48. Agronomic, grain quality and disease data for the 30 cultivars in the Eighth International Winter Wheat Performance Nursery grown at Stillwater, Oklahoma, USA in 1976.

Cultivars	Yield q/ha	Test weight kg/hl	1000-kernel weight[a] g	Protein %	Plant height cm	Date of Flowering days from Jan. 1	Date of Ripening Jan. 1	Winter survival %	Leaf rust[a] sev. %	Leaf rust[a] resp.	Seed grade 1-9
Sage	38.7	78.8	33.0	15.5	89	118	161	100	1	S	4
Odesskaya 51	35.0	79.1	36.3	15.3	76	108	154	100	7	S	4
Blueboy	33.4	73.5	35.2	15.0	80	111	160	100	1	S	5
Bezostaya 1	31.3	78.9	35.8	15.7	71	107	156	100	3	S	3
Sentinel	31.0	75.1	25.1	16.4	79	116	160	100	7	S	3
GKF-8001	30.6	74.7	34.4	15.1	54	111	157	100	5	S	4
NE 68719	30.3	75.1	26.3	14.9	77	117	161	100	40	S	4
GKF-2	30.1	73.5	34.5	15.4	64	106	152	100	10	S	3
Martonvasar 3	30.1	76.5	36.4	17.1	75	106	150	100	15	S	2
WA 5829	30.1	73.8	27.4	13.2	74	126	164	100	15	S	4
Probstdorfer Karat	28.8	77.3	32.7	15.9	93	129	165	100	0	R-MR	3
F26-70	27.4	75.6	35.3	16.0	80	105	151	100	20	S	4
Dunav-1	26.9	74.8	31.3	16.4	63	105	154	100	3	S	3
Martonvasar 2	26.5	77.2	36.1	15.6	68	108	152	100	3	S	2
Biserka	26.1	73.4	31.1	16.5	57	103	151	100	2	S	3
Priboy	25.9	77.3	37.4	15.1	79	109	155	100	1	S	4
TRS 237	25.5	73.0	30.4	15.9	88	111	158	100	6	S	2
Oasis	25.2	75.2	31.7	16.8	68	106	151	100	0	R	4
Talent	24.9	71.0	30.4	15.8	59	110	157	100	15	S	5
Bordenave Puan Sag	24.6	76.7	27.6	16.4	91	117	162	100	1	MR-S	4
Atlas 66	23.9	73.9	29.0	18.6	92	128	166	100	1	S	5
Kitakomi-Komugi	23.1	76.3	33.0	15.6	66	106	154	100	15	S	4
Kormoran	22.7	68.4	25.5	17.9	75	133	164	100	12	S	7
Lely	19.3	64.5	21.5	18.7	77	140	170	100	10	S	4
Maris Templar	19.2	66.0	25.5	17.1	74	141	172	100	2	S	6
Maris Huntsman	12.7	68.4	28.9	16.4	76	140	170	100	3	S	6
Flavio	0.0	--	--	--	--	--	--	0	-		-
Rashid	0.0	--	--	--	--	--	--	0	-		-
Lerma Rojo 64	0.0	--	--	--	--	--	--	0	-		-
Galiafen	0.0	--	--	--	--	--	--	0	-		-
Mean	23.4	74.1	31.2	16.1	74.5	115.9	158.6	86.7	7.6		2.9
L.S.D. of cultivar means (.05)	4.9	2.0	2.8	0.7	6.5	2.0	2.0	--	-		0.1
Coefficient of variation (%)	14.9	1.9	4.4	3.0	6.2	1.2	0.9	0.0	-		3.4

[a] Two replications only.

UNITED STATES

OREGON

CORVALLIS

COOPERATOR(S): W. E. Kronstad; W. L. McCuistion.

DATE OF PLANTING (EFFECTIVE GERMINATION): October 14, 1975.

PRECIPITATION DURING CYCLE OF TEST: 1050 mm.

AMOUNT OF IRRIGATION APPLIED: None.

FERTILIZER USED: Autumn: N = 56 kg/ha; Spring: N = 168 kg/ha (Ammonium Sulphate and Urea).

GENERAL DESCRIPTION OF CLIMATIC CONDITIONS DURING TEST: The rainfall pattern was advantageous to plant growth; however, above average rainfall during August caused considerable lodging and sprouting.

DISEASE DEVELOPMENT: A good incidence of stripe rust (Puccinia striiformis) was noted following artificial innoculation. Also a heavy natural infection of Septoria sp. occurred. Powdery mildew (Erysiphe graminis) was not so widespread.

INSECT, WEED OR PEST PROBLEMS: None.

DATE OF HARVEST: September 7, 1976.

AREA HARVESTED FOR YIELD: 7.5 square meters.

DATES WHEN DIFFERENT NOTES WERE TAKEN:
Stand establishment - February 6, 1976.
P. striiformis - June 11, and July 29, 1976.
Septoria sp. - June 11, and July 29, 1976.
E. graminis - June 11, and July 29, 1976.
Lodging - September 3, 1976.
Height - September 3, 1976.

Correlation Coefficients

No. of observations=120	Yield	Test weight	Plant height	Lodging
Test weight	.69**			
Stand establishment	.22*	.13		
Plant height	-.33**	-.10		
Lodging	-.54**	-.14	.52**	
Flowering	.09	-.04	.29**	.04

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

Table 49. Agronomic, grain quality and disease data for the 30 cultivars in the Eighth International Winter Wheat Performance Nursery grown at Corvallis, Oregon, USA in 1976.

Cultivars	Yield q/ha	Test weight kg/hl	Plant height cm	Lodging %	Date of Flowering from Jan. 1	Stripe rust sev. %	Stripe rust resp.	Mildew sev. %	Septoria sev. %	Stand establishment %
Talent	87.7	76.2	110	0	140	0		0	4	65
Lely	83.7	77.8	140	0	160	1	O-R	5	5	48
Maris Templar	75.9	79.5	130	0	150	0		0	4	63
Maris Huntsman	75.7	76.5	135	0	149	0		0	4	60
Dunav-1	73.5	79.1	110	0	130	40	MS	0	6	53
Biserka	72.4	78.1	115	0	130	40	S	0	6	60
Flavio	68.0	78.7	110	0	130	20	MR-MS	0	5	65
GKF-2	67.6	74.9	115	0	134	60	S	0	6	55
F26-70	63.9	76.9	130	0	130	60	MS	3	5	73
Kormoran	59.0	73.4	140	90	156	0		0	3	60
Bezostaya 1	57.5	75.1	130	0	140	60	S	6	5	63
Probstdorfer Karat	57.3	80.5	155	50	155	10	MR	3	4	55
Martonvasar 2	53.2	75.1	130	0	140	60	S	0	6	65
Galiafen	52.3	75.8	130	10	142	30	MR-MS	0	6	40
WA 5829	51.7	70.3	110	0	154	10	MR	6	7	55
Martonvasar 3	51.3	73.4	135	0	140	84	S	4	5	68
Blueboy	48.6	66.3	140	0	143	60	S	0	4	53
Atlas 66	47.4	80.2	155	80	142	10	MR	0	4	53
Priboy	46.7	77.0	130	99	141	30	MR	0	3	55
Lerma Rojo 64	46.6	73.6	120	70	127	0		4	8	55
Odesskaya 51	43.1	74.0	130	90	140	60	S	0	2	55
GKF-8001	42.4	73.3	90	0	143	40	S	8	7	65
Sentinel	32.6	72.2	150	99	144	60	S	0	4	53
TRS 237	32.3	69.5	155	0	138	80	S	0	5	50
Kitakomi-Komugi	31.8	66.4	120	30	138	60	S	5	8	63
Bordenave Puan Sag	28.8	73.8	135	80	144	30	MR	0	6	53
Rashid	28.3	73.8	145	99	130	99	S	0	8	50
NE 68719	27.9	63.7	110	0	144	80	S	6	4	58
Sage	24.8	66.0	155	99	144	80	S	0	4	53
Oasis	17.4	61.8	150	70	141	99	S	0	5	50
Mean	51.6	73.8	130.3	32.2	141.3	42.1		1.7	5.1	56.9
L.S.D. of cultivar means (.05)	9.3	--	--	--	--	--		-	-	9.8
Coefficient of variation (%)	12.8	0.0	0.0	0.0	0.0	--		-	-	12.2

UNITED STATES

WASHINGTON

PULLMAN

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

DATE OF PLANTING (EFFECTIVE GERMINATION): October 19. 1975.

PRECIPITATION DURING CYCLE OF TEST: 559 mm.

AMOUNT OF IRRIGATION APPLIED: None.

FERTILIZER USED: A split plot design was used where half the nursery received 67 kg/ha of N (Ammonium Nitrate) in the autumn, and the other half the same autumn rate plus an additional 67 kg/ha of N in spring.

GENERAL DESCRIPTION OF CLIMATIC CONDITIONS DURING TEST: Climatic conditions caused a poor emergence in the upper part of the nursery.

DISEASE DEVELOPMENT: Leaf rust (Puccinia recondita) and stripe rust (P. striiformis) were a problem.

INSECT, WEED OR PEST PROBLEMS: None.

DATE OF HARVEST: August 30, 1976.

AREA HARVESTED FOR YIELD: 2.9725 square meters.

DATES WHEN DIFFERENT NOTES WERE TAKEN: Not reported.

Correlation Coefficients

N= No. of observations	Yield	Test weight	Protein	Plant height
Test weight	.05			
N	117			
Protein	-.23*	.11		
N	118	117		
Plant height	.13	.17	.31**	
N	120	117	118	
Flowering	.32	-.14	-.26	-.12
N	30	30	30	30

** Significant at the 1% level.

* Significant at the 5% level.

Table 50. Agronomic, grain quality and disease data for the 30 cultivars in the Eighth International Winter Wheat Performance Nursery grown at Pullman, Washington, USA in 1976.

Cultivars	Yield q/ha	Test weight kg/hl	Protein %	Plant height cm	Date of flowering[a] days from Jan. 1	Leaf rust[a] sev. %	Seed grade 1-9
Lely	51.3	74.3	11.5	84	177	0	2
WA 5829	49.7	71.9	11.3	84	164	60	4
Maris Templar	49.4	74.5	12.2	86	177	0	3
Probstdorfer Karat	43.0	78.3	12.9	106	164	5	3
Kormoran	40.9	71.9	11.9	91	176	5	3
Martonvasar 2	40.4	77.9	14.2	92	163	5	3
Talent	40.2	74.8	13.1	74	164	10	2
Dunav-1	38.9	76.0	16.0	80	159	20	2
F26-70	38.5	75.5	14.1	89	159	5	2
Priboy	38.1	76.4	13.5	98	163	10	3
Bezostaya 1	38.0	78.4	14.0	98	164	0	2
Martonvasar 3	37.6	76.9	13.8	92	163	5	2
GKF-8001	37.6	76.4	12.7	90	163	5	2
Blueboy	36.8	71.3	12.2	109	159	-	4
GKF-2	34.4	74.5	12.7	81	159	0	3
Sage	33.4	76.6	14.9	89	159	0	3
Odesskaya 51	33.4	76.4	12.4	88	162	60	3
Biserka	32.5	74.2	12.9	75	157	0	2
Maris Huntsman	31.5	73.5	12.9	95	177	0	4
Atlas 66	29.9	76.1	16.9	115	162	0	3
Kitakomi-Komugi	28.9	74.5	12.7	86	158	0	2
TRS 237	28.5	76.4	15.0	98	158	5	2
NE 68719	28.4	69.7	13.2	78	159	50	6
Flavio	28.2	73.9	12.4	75	163	0	3
Sentinel	27.6	73.7	14.8	90	163	0	3
Bordenave Puan Sag	24.9	77.2	15.8	105	162	0	2
Oasis	23.9	72.4	13.8	102	162	0	4
Rashid	20.2	75.8	13.6	98	159	60	2
Galiafen	15.4	75.3	12.8	80	163	5	3
Lerma Rojo 64	8.0	75.1	13.9	77	160	10	-
Mean	33.6	75.0	13.5	90.0	163.3	11.0	2.8
L.S.D. of cultivar means (.05)	11.5	3.0	1.7	14.2	--	-	0.2
Coefficient of variation (%)	24.4	2.8	9.0	11.2	--	-	5.0
Local cultivars:							
Nugaines	51.5	76.4		83			
Luke	52.7	74.0		82			

[a] One replication only.

Table 50a. Agronomic and protein data for the 30 cultivars in the Eighth International Winter Wheat Performance Nursery grown at Pullman, Washington, USA in 1976[a/].

Cultivars	Yield q/ha	Test weight kg/hl	Protein %	Plant height cm	Date of Flowering[b/] from Jan. 1	Seed grade 1-9
Lely	57.3	73.4	12.2	84	177	3
Maris Templar	56.1	74.5	13.0	86	177	3
Kormoran	52.7	72.4	13.6	91	176	5
Talent	51.5	72.9	13.4	74	164	4
Probstdorfer Karat	50.0	79.0	13.9	106	164	3
Priboy	44.1	76.4	13.8	98	163	3
Bezostaya 1	43.0	77.3	14.6	98	164	4
F26-70	42.4	75.0	15.1	89	159	3
Martonvasar 3	42.4	76.4	14.2	92	163	4
Martonvasar 2	41.7	76.1	15.3	92	163	3
WA 5829	41.4	72.3	12.0	84	164	4
GKF-2	39.8	74.5	13.5	81	159	4
GKF-8001	39.2	75.1	13.1	90	163	5
Odesskaya 51	36.7	75.8	13.3	88	162	3
Blueboy	36.1	70.2	12.6	109	159	5
Maris Huntsman	35.4	71.6	13.9	95	177	4
Sage	35.0	75.1	14.6	89	159	4
Dunav-1	34.2	75.5	14.1	80	159	4
Atlas 66	34.1	76.6	16.9	115	162	5
Kitakomi-Komugi	32.7	74.3	13.2	86	158	4
Biserka	29.7	74.9	13.0	75	157	4
Sentinel	29.6	73.7	14.9	90	163	4
TRS 237	27.4	75.8	15.5	98	158	3
Bordenave Puan Sag	27.2	78.1	16.9	105	162	3
Oasis	25.0	71.2	14.8	102	162	5
NE 68719	24.1	65.7	14.4	78	159	7
Flavio	22.6	74.7	13.3	75	163	5
Galiafen	17.6	75.2	13.2	80	163	5
Rashid	16.0	76.0	14.1	98	159	4
Lerma Rojo 64	10.0	78.7	14.1	77	160	-
Mean	35.8	74.5	14.0	90.0	163.3	4.0
L.S.D. of cultivar means (.05)	12.0	2.1	1.0	14.2	--	0.3
Coefficient of variation (%)	23.9	2.0	5.3	11.2	--	5.6
Local cultivars:						
Nugaines	52.9	73.9		83		
Luke	43.8	74.2		82		

[a/] Received additional 67.3 kg/ha of fertilizer in spring (nitrogen).
[b/] One replication only.

USSR

KRASNODAR

COOPERATOR: Y. M. Puchkov.

DATE OF PLANTING (EFFECTIVE GERMINATION): October 16, 1975.

PRECIPITATION DURING CYCLE OF TEST: 506 mm.

AMOUNT OF IRRIGATION APPLIED: None.

FERTILIZER USED: N = 120 kg/ha; P_2O_5 = 46 kg/ha; K_2O = 54 kg/ha.

GENERAL DESCRIPTION OF CLIMATIC CONDITIONS DURING TEST: A late, dry, cool autumn was followed by a cold (-21°C) winter. Spring was dry while the summer was cool and wet, delaying maturity by 10-12 days compared to normal.

DISEASE DEVELOPMENT: The weather was unfavorable for diseases but low incidences of leaf rust (Puccinia recondita), stem rust (P. graminis tritici), stripe rust (P. striiformis) and powdery mildew (Erysiphe graminis) were reported.

INSECT, WEED OR PEST PROBLEMS: Some bird damage by sparrows (Passer sp.) stink bugs (Eurygaster integriceps), European wheat stem sawfly (Cephus pygmaeus) and cereal leaf beetle (Oulema melanopus).

DATE OF HARVEST: July 18, 1976.

AREA HARVESTED FOR YIELD: 6.6 square meters.

DATES WHEN DIFFERENT NOTES WERE TAKEN:

Winter survival - March 17, 1976.
Erysiphe graminis - May 11-June 16, 1976.
P. striiformis - June 16, 1976.
Lodging - June 30, 1976.
P. recondita - July 1, 1976.
P. graminis tritici - July 1, 1976.

Correlation Coefficients

N= No. of observations	Yield	Test weight	1000-kernel weight	Protein	Plant height	Lodging	Flowering	Ripening	Winter survival
Test weight	.29**								
N	110								
1000-kernel weight	.25*	.56**							
N	107	106							
Protein	-.47**	.22*	.06						
N	111	110	107						
Plant height	-.13	.28**	.24*	.55**					
N	110	109	106	110					
Lodging	-.28**	.12	.23*	.43**	.66**				
N	111	110	107	111	110				
Flowering	-.20*	-.35**	-.08	.07	.12	.07			
N	110	109	106	110	110	110			
Ripening	-.30**	-.50**	-.08	-.05	-.05	.08	.87**		
N	110	109	106	110	110	110	110		
Winter survival	.78**	.23*	.20	-.15	.19	-.05	-.24*	-.36**	
N	90	81	79	82	82	82	82	82	
Frost damage	-.89**	-.34**	-.21	.42	-.07	.06	.34**	.47**	-.89**
N	90	81	79	82	82	82	82	82	90

** Significant at the 1% level.

* Significant at the 5% level.

Table 51. Agronomic, grain quality and disease data for the 30 cultivars in the Eighth International Winter Wheat Performance Nursery grown at Krasnodar, USSR in 1976.

Cultivars	Yield q/ha	Test weight kg/hl	1000-kernel weight g	Protein %	Plant height cm	Lodging %	Date of Flowering days from Jan. 1	Date of Ripening days from Jan. 1	Winter survival %	Frost damage 0-9	Rust Leaf sev. %	Rust Leaf resp.	Rust Stem sev. %	Mildew sev. %
GKF-8001	61.7	79.6	41.0	12.2	72	0	145	186	100	2	1	VR-MS	1	16
F26-70	61.3	81.2	44.7	13.9	105	0	142	183	100	3	1	R-MS	1	6
GKF-2	61.2	78.6	42.9	13.2	88	20	141	183	100	2	0	VR-MS	1	5
Martonvasar 2	61.1	81.3	48.8	14.1	103	40	145	184	100	2	1	M-MS	1	13
Kormoran	60.6	77.3	39.9	13.4	99	20	151	191	100	2	1	VR-R	1	1
Lely	60.0	76.8	36.4	13.6	99	20	156	195	100	2	1	M-MS	2	18
Probstdorfer Karat	59.2	82.4	44.5	14.0	120	20	150	190	100	2	1	R-M	1	3
Odesskaya 51	58.9	82.8	45.1	13.8	111	50	146	186	100	2	1	M-S	1	3
Blueboy	57.7	77.8	38.4	12.8	102	20	146	186	100	3	1	R-M	1	24
Sage	57.3	81.3	41.4	14.8	121	50	147	184	100	2	0	VR	0	1
Maris Huntsman	57.1	77.9	47.6	13.3	103	40	152	193	100	3	1	R-M	1	0
Priboy	56.2	82.1	47.8	13.2	104	50	146	188	100	2	1	M-MS	45	3
Kitakomi-Komugi	53.5	79.7	41.8	12.8	93	40	141	186	100	3	1	VR-R	1	3
Bezostaya 1	52.9	82.5	47.5	13.8	104	20	145	185	100	2	1	R-M	1	21
Oasis	52.8	80.0	39.1	13.8	115	40	141	181	100	2	0	VR	0	0
NE 68719	52.8	77.2	30.3	13.0	89	0	146	182	100	2	1	R	1	35
Talent	51.3	79.8	37.9	13.7	85	10	148	188	19	5	1	R-MS	1	0
Biserka	50.9	79.4	38.5	14.6	85	10	141	185	48	5	0	VR-R	0	0
WA 5829	50.5	76.2	30.7	11.9	85	10	149	193	100	3	1	VR-R	1	16
Martonvasar 3	49.4	81.2	47.0	14.2	102	30	143	184	100	2	1	M-MS	1	11
Bordenave Puan Sag	49.1	82.3	39.7	15.4	124	50	150	186	69	4	0	VR	0	1
Sentinel	48.9	80.1	36.6	15.6	105	50	143	183	100	2	0	VR-R	0	1
Maris Templar	47.5	78.9	47.8	13.7	94	20	156	195	67	5	1	R	1	0
Dunav-1	41.9	81.0	41.4	14.0	89	0	145	184	100	4	0	VR-M	12	2
TRS 237	38.9	79.5	43.0	14.8	118	40	145	185	100	3	1	R	0	3
Atlas 66	29.6	78.3	38.8	17.9	119	40	150	190	100	6	1	VR-R	0	3
Galiafen	17.3	79.8	43.2	14.4	104	40	148	190	3	9	0	O-VR	0	0
Rashid	15.0	70.8	35.0	14.3	102	50	152	196	4	8	3	S	50	33
Lerma Rojo 64	3.0	81.0	40.1	16.0	--	50	--	--	0	9	-		-	--
Flavio	0.0	--	--	--	--	--	--	--	0	9	-		-	--
Mean	47.2	79.6	41.2	13.9	101.3	27.8	146.8	187.1	80.4	3.7	0.8		4.5	7.9
L.S.D. of cultivar means (.05)	8.2	1.6	1.7	0.7	4.5	--	--	--	7.6	0.7	-		-	-
Coefficient of variation (%)	12.4	1.4	2.9	3.7	3.1	0.0	0.0	0.0	5.8	11.8	-		-	-

MIRONOVSKI

USSR

COOPERATOR(S): Dr. V. N. Remeslo, Dr. A. F. Mel'nikov

DATE OF PLANTING (EFFECTIVE GERMINATION): Seeding was done at 120 seeds/m^2 at the optimum date for the area. Field germination was low and ranged from 30-50%. The nursery was planted on black fallow.

PRECIPITATION DURING CYCLE OF TEST: 450 mm.

AMOUNT OF IRRIGATION APPLIED: None.

FERTILIZER USED: Not reported.

GENERAL DESCRIPTION OF CLIMATIC CONDITIONS DURING TEST: Climatic conditions for growing wheat during the fall and winter were unfavorable. Rainfall in September was particularly low (6.1 mm). Temperatures in February were abnormally low with a monthly average of - 11.2C° compared to -5.4C° for normal. Many varieties suffered too much winterkill for agronomic measurements to be useful.

DISEASE DEVELOPMENT: Brown rust and powdery mildew occurred by natural infection. None of the cultivars were resistant to powdery mildew, but some showed resistance to brown rust.

INSECT, WEED OR PEST PROBLEMS: None reported.

DATE OF HARVEST: Not reported.

AREA HARVESTED FOR YIELD: 1 m^2.

DATES WHEN DIFFERENT NOTES WERE TAKEN: Not reported.

Table 52. Agronomic and disease data for the 30 cultivars in the Eighth International Winter Wheat Performance Nursery grown at Mironovski, USSR in 1976[1].

Cultivars	Yield q/ha	Yield, % of check	Plant height cm	Winter survival %	Lodging resistance[2]	Number of kernels/ head	Weight of kernels from main head g	1000-kernel weight g	Leaf rust[3] 1-4	Powdery mildew[3] 1-4
Il'ichevka (check)	85.2	100.0	113	87	7	42	2.4	57.4	4	3
Bezostaya 1	71.5	83.9	109	90	7	38	2.1	56.9	4	4
Odesskaya 51	86.8	101.9	96	71	5	53	3.1	57.5	4	3
Priboy	83.3	97.8	111	76	7	46	2.6	56.8	1	3
GKF-2	46.0	54.0	85	79	7	53	2.6	48.3	4	3
Martonvasar 2	51.9	60.9	85	78	9	44	2.4	54.6	4	4
Martonvasar 3	64.4	75.6	85	76	9	53	3.0	57.1	4	4
F26-70	65.5	76.9	95	73	9	54	2.8	52.9	4	3
Dunav-1	60.4	70.9	80	50	9	44	1.7	39.5	1	3
Kitakomi-Komugi	61.8	72.5	115	80	7	52	2.1	41.1	4	3
Sage	77.8	91.3	110	70	5	42	1.8	43.3	4	3
Atlas 66	81.7	96.0	110	69	5	46	2.1	46.9	3	4
Blueboy	52.9	62.1	80	89	7	53	2.4	45.1	4	4
Sentinel	71.1	83.4	125	50	5	38	1.6	42.6	1	3
TRS 237	90.0	105.6	108	92	7	39	1.9	48.0	2	3

[1] Growing conditions were very poor with a lot of winter kill. Only the varieties listed in the table gave useful data.

[2] Lodging scale: 1 = very strong lodging, 3 = strong lodging, 5 = moderate lodging, 7 = slight lodging, 9 = no lodging.

[3] Disease scale: 0 = complete absence of injury, 01 = trace of injury, 1 = very slightly infected plants, 2 = slightly infected plants, 3 = moderately infected plants, 4 = strongly infected plants.

USSR

ODESSA

COOPERATOR: A. A. Sozinov.

DATE OF PLANTING (EFFECTIVE GERMINATION): October 16, 1975. Effective germination - November 6-10, 1975.

PRECIPITATION DURING CYCLE OF TEST: 399 mm. (October 1, 1975-July 31, 1976).

AMOUNT OF IRRIGATION APPLIED: None.

FERTILIZER USED: None.

GENERAL DESCRIPTION OF CLIMATIC CONDITIONS DURING TEST: The autumn was dry and the winter cold. There was often no snow cover but rain formed an icy crust on the plants. A cold, wet spring hindered development by 10-15 days. Good grain formation was largely due to a cool summer with frequent rain.

DISEASE DEVELOPMENT: Generally little disease occurred. Powder mildew (Erysiphe graminis), leaf rust (Puccinia recondita) and stem rust (P. graminis tritici) were present.

INSECT, WEED OR PEST PROBLEMS: Stink bugs (Eurygaster integriceps) and sparrows (Passer sp.) were reported.

DATE OF HARVEST: July 20-26, 1976.

AREA HARVESTED FOR YIELD: 3.0 square meters.

DATES WHEN DIFFERENT NOTES WERE TAKEN:
Winter survival - April 9-10, 1976.
Diseases - May 30, June 10, and July 6, 1976.
Lodging - May 28, June 10, and July 12, 1976.
Height - July 6, 1976.
Shattering - July 28, 1976.

Correlation Coefficients

N= No. of observations	Yield	Test weight	1000-kernel weight	Protein	Plant height	Lodging	Flowering	Ripening	Shattering
Test weight	.24**								
N	116								
1000-kernel weight	.30**	.44**							
N	116	116							
Protein	-.68**	-.19*	-.02						
N	116	116	116						
Plant height	.16	.07	.07	.12					
N	116	116	116	116					
Lodging	-.53**	.02	.16	.55**	.01				
N	116	116	116	116	116				
Flowering	.07	-.68**	-.41**	-.05	.18*	-.13			
N	116	116	116	116	116	116			
Ripening	-.44**	-.23*	-.10	.26**	-.09	.33**	.10		
N	116	116	116	116	116	116	116		
Shattering	.09	.18*	.01	-.07	.01	-.14	-.36**	-.09	
N	116	116	116	116	116	116	116	116	
Winter survival	.83**	.19*	.02	-.55**	.23*	-.69**	.06	-.60**	.12
N	120	116	116	116	116	116	116	116	116

** Significant at the 1% level.

* Significant at the 5% leve

Table 53. Agronomic, grain quality and disease data for the 30 cultivars in the Eighth International Winter Wheat Performance Nursery grown at Odessa, USSR in 1976.

Cultivars	Yield q/ha	Test weight kg/hl	1000-kernel weight g	Protein %	Plant height cm	Lodging %	Date of Flowering days from Jan. 1	Date of Ripening days from Jan. 1
Martonvasar 2	43.1	82.0	45.8	14.3	83	0	153	197
Odesskaya 51	41.7	83.1	43.1	14.2	88	19	156	195
Bezostaya 1	38.2	83.3	44.0	14.1	85	0	152	197
Lely	37.1	78.6	33.1	14.4	82	0	163	198
Martonvasar 3	36.9	82.5	46.2	14.0	85	0	152	196
Maris Templar	36.5	78.6	44.0	14.6	84	0	161	191
GKF-8001	36.5	83.0	41.3	12.8	60	0	152	196
Priboy	36.3	82.7	43.1	13.0	88	0	156	196
F26-70	35.2	82.5	40.6	13.7	87	0	152	195
GKF-2	35.2	81.4	43.2	13.8	73	0	152	196
Oasis	35.0	82.1	37.6	14.4	90	0	151	197
Probstdorfer Karat	34.4	83.0	37.9	13.7	100	0	156	199
Maris Huntsman	33.7	75.3	40.8	14.6	93	0	162	199
Blueboy	33.5	79.3	38.3	13.1	88	0	156	196
Sentinel	33.2	82.4	35.6	15.4	88	0	154	195
Sage	32.7	83.5	39.1	14.9	97	0	152	194
Kormoran	32.4	76.1	33.7	14.2	83	0	161	198
Kitakomi-Komugi	31.8	82.6	42.3	14.8	77	0	151	195
Dunav-1	31.1	81.6	39.4	15.4	67	0	151	195
WA 5829	30.5	80.0	32.7	12.5	67	0	157	196
Talent	30.2	78.9	36.4	15.5	71	0	157	196
NE 68719	28.0	79.0	31.1	13.6	72	0	156	195
Biserka	27.6	81.4	38.1	14.9	64	0	150	195
TRS 237	27.1	81.9	41.8	16.1	98	0	151	195
Bordenave Puan Sag	24.2	82.9	37.0	15.1	96	0	157	196
Atlas 66	19.2	77.6	32.4	18.3	96	10	159	198
Rashid	18.7	80.7	40.3	16.6	92	31	153	202
Flavio	18.0	77.3	34.8	15.5	66	0	158	206
Lerma Rojo 64	9.3	80.9	43.5	18.1	65	30	151	202
Galiafen	0.0	--	--	--	--	-	--	--
Mean	30.2	80.8	39.2	14.7	82.2	3.1	154.7	196.8
L.S.D. of cultivar means (.05)	1.8	1.2	2.9	0.8	7.3	0.7	1.1	4.1
Coefficient of variation (%)	4.2	1.1	5.3	4.1	6.3	16.5	0.5	1.5

Table 53. Agronomic, grain quality and disease data for the 30 cultivars in the Eighth International Winter Wheat Performance Nursery grown at Odessa, USSR in 1976. Concluded.

Cultivars	Shattering %	Winter survival %	Rust				Mildew	
			Leaf		Stem			
			sev. %	resp.	sev. %	resp.	sev. %	resp.
Martonvasar 2	0	100	17	MR	30	O-S	37	MS-S
Odesskaya 51	0	100	13	R-MR	5	R-MR	32	MR-MS
Bezostaya 1	0	100	0	O-R	0		0	O-R
Lely	0	100	0	O-VR	0	O-R	0	O-R
Martonvasar 3	0	100	35	MR-MS	6	R-MR	31	MR-MS
Maris Templar	0	100	0	O-R	1	R	7	O-MR
GKF-8001	0	100	9	O-MS	5	O-MS	30	R-MS
Priboy	0	100	17	R-MS	7	O-MR	20	O-MS
F26-70	10	100	22	O-MS	12	O-MS	2	O-MS
GKF-2	0	100	3	R-MR	7	O-S	57	S-VS
Oasis	20	100	0		0	O-R	12	O-MS
Probstdorfer Karat	0	100	20	R-MR	17	MR-MS	30	O-MS
Maris Huntsman	0	100	20	R-MS	13	R-S	0	
Blueboy	2	100	0		8	O-MR	60	S-VS
Sentinel	0	100	0	R	0	O-R	15	O-VS
Sage	0	100	0	O-R	5	O-MR	0	
Kormoran	0	100	12	O-MR	0	O-R	0	
Kitakomi-Komugi	11	100	16	MR-MS	21	MR-MS	42	MS-S
Dunav-1	1	99	0		2	O-MR	22	MR-MS
WA 5829	0	100	25	R-MR	15	MR	51	R-VS
Talent	0	86	0	O-R	0		0	O-R
NE 68719	0	100	0	O-R	8	O-MR	68	MS-VS
Biserka	6	100	0	O-R	0		0	O-R
TRS 237	0	98	0	O-R	21	MR-MS	32	MR-MS
Bordenave Puan Sag	0	99	0		0		0	O-R
Atlas 66	0	85	0	O-R	0		25	O-MS
Rashid	0	10	45	MR-VS	52	MS-S	63	S-VS
Flavio	1	5	17	R-MR	45	R-S	60	S-VS
Lerma Rojo 64	0	5	10	R-MS	5	O-MS	57	MS-S
Galiafen	-	0	--		--		--	
Mean	1.7	86.2	9.7		9.8		26.0	
L.S.D. of cultivar means (.05)	0.6	3.4	--		--		--	
Coefficient of variation (%)	27.2	2.8	--		--		--	

WEST GERMANY

MONSHEIM

COOPERATOR: K. Brunckhorst.

DATE OF PLANTING (EFFECTIVE GERMINATION): October 21, 1975.

PRECIPITATION DURING CYCLE OF TEST: 223 mm. (October 1975-July 1976).

AMOUNT OF IRRIGIATION APPLIED: None.

FERTILIZER USED: N = 50 kg/ha (after spring rape - Brassica napus); N = 60 kg/ha (February); N = 60 kg/ha (April); P_2O_5 = 140 kg/ha; K_2O = 200 kg/ha.

GENERAL DESCRIPTION OF CLIMATIC CONDITIONS DURING TEST: The climate was too dry throughout the duration of the nursery. This affected crop development adversely.

DISEASE DEVELOPMENT: Minimal; fungicide 'Derosal' at 300 g/ha was used on April 21, 1976; also 'CCC' at 700 ml/ha on April 14, 1976.

INSECT, WEED OR PEST PROBLEMS: None; 'Certrol DP' herbicide was used at 4 l/ha.

DATE OF HARVEST: July 19, 1976.

AREA HARVESTED FOR YIELD: 4.8 square meters.

DATES WHEN DIFFERENT NOTES WERE TAKEN: Not reported.

Correlation Coefficients

No. of observations=120	Yield	1000-kernel weight	Protein	Plant height	Flowering
1000-kernel weight	.36**				
Protein	-.50**	-.07			
Plant height	.002	.11	.12		
Flowering	-.04	-.25**	.10	.05	
Ripening	.003	-.17	.09	.17	.49**

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

Table 54. Agronomic and grain quality data for the 30 cultivars in the Eighth International Winter Wheat Performance Nursery grown at Monsheim, West Germany in 1976.

Cultivars	Yield q/ha	1000-kernel weight g	Protein %	Plant height cm	Date of Flowering (days from Jan. 1)	Date of Ripening (days from Jan. 1)
GKF-2	42.8	36.7	14.2	67	141	181
Priboy	41.9	35.0	14.8	72	148	182
Odesskaya 51	41.9	34.5	15.4	73	146	186
F26-70	40.8	33.9	15.6	80	142	184
Maris Huntsman	40.5	37.7	16.3	83	153	186
Flavio	40.4	35.3	15.4	68	143	181
Kitakomi-Komugi	40.2	31.8	14.6	72	140	181
Talent	40.2	30.5	15.8	63	146	186
Martonvasar 2	39.7	38.8	15.7	73	148	184
Sage	38.7	33.1	15.0	85	144	182
Martonvasar 3	38.5	36.4	15.9	72	148	184
Bezostaya 1	38.5	35.5	15.3	71	148	185
Dunav-1	37.5	37.6	16.2	65	140	182
Blueboy	37.3	30.1	14.6	79	146	186
Biserka	37.0	38.5	16.5	61	140	184
Maris Templar	36.5	36.7	16.8	75	153	186
GKF-8001	36.5	32.0	14.8	49	148	182
Sentinel	35.8	27.8	17.3	69	145	185
Probstdorfer Karat	35.8	34.0	15.2	83	151	186
Bordenave Puan Sag	35.4	28.4	17.8	80	146	181
TRS 237	35.4	35.4	16.9	85	140	186
Oasis	35.2	31.2	16.0	74	146	181
Atlas 66	34.3	31.2	18.3	91	147	186
Lely	33.8	30.7	17.2	77	154	186
WA 5829	33.8	26.0	15.4	65	151	186
Kormoran	31.9	30.9	16.9	72	154	186
Galiafen	31.7	28.2	14.9	77	147	186
NE 68719	31.5	26.2	15.3	62	147	182
Rashid	31.0	35.6	15.7	83	140	184
Lerma Rojo 64	29.2	36.8	16.6	76	138	176
Mean	36.8	33.2	15.9	73.2	145.9	183.7
L.S.D. of cultivar means (.05)	3.1	1.3	0.8	3.9	1.5	2.5
Coefficient of variation (%)	6.0	2.8	3.8	3.8	0.7	0.9

WEST GERMANY

WEIHENSTEPHAN

COOPERATOR: G. Fischbeck.

DATE OF PLANTING (EFFECTIVE GERMINATION): October 14, 1975.

PRECIPITATION DURING CYCLE OF TEST: 475 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: Spring was very dry. A high temperature and low rainfall were present from jointing to the'dough' stage.

DISEASE DEVELOPMENT: A mild attack of powdery mildew (Erysiphe graminis) was the only disease apparent. 0.75 L/ha 'CCC' was used on April 14, 1976 and 4 L/ha 'Banvel M' on April 21, 1976.

INSECT, WEED OR PEST PROBLEMS: None.

DATE OF HARVEST: July 29-August 3, 1976.

AREA HARVESTED FOR YIELD: 1.85 square meters.

DATES WHEN DIFFERENT NOTES WERE TAKEN:
Erysiphe graminis - June 24, 1976.

Correlation Coefficients

N= No. of observations	Yield	Test weight	1000-kernel weight	Protein	Plant height	Lodging	Flowering	Ripening	Winter survival
Test weight	-.15								
N	120								
1000-kernel weight	.19	.001							
N	30	30							
Protein	-.65**	.43**	-.16						
N	120	120	30						
Plant height	-.17	.17	.09	.37**					
N	120	120	30	120					
Lodging	-.55**	.16	-.24	.62**	.48**				
N	120	120	30	120	120				
Heads/square meter	-.29**	.29**	-.45*		.27**	.62**			
N	120	120	30		120	120			
Flowering	.61**	-.44**	.14	-.53**	.10	-.38**			
N	120	120	30	120	120	120			
Ripening	.28	.11	.38*	-.10	.20	-.25	.57**		
N	30	30	30	30	30	30	30		
Winter survival	-.18	-.21	-.35	-.02	-.12	.002	-.24	-.40*	
N	30	30	30	30	30	30	30	30	
Frost damage	-.20*	-.23*	-.06	.12	-.02	.09	-.18*	-.48**	.52**
N	120	120	30	120	120	120	120	30	30

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

Table 55. Agronomic, grain quality and disease data for the 30 cultivars in the Eighth International Winter Wheat Performance Nursery grown at Weihenstephan, West Germany in 1976.

Cultivars	Yield q/ha	Test weight kg/hl	1000-kernel weight[a] g	Protein %	Plant height cm	Lodging %	Date of Flowering[a] days from Jan. 1	Date of Ripening[a] days from Jan. 1	Winter survival[a] %	Frost damage 0-9	Mildew sev. 1-9	Heads/m^2
Lely	86.0	75.9	43.3	11.2	101	0	164	216	40	2	2	553
Kormoran	83.8	72.1	41.9	11.6	105	0	163	216	40	2	1	559
Blueboy	83.5	77.6	44.3	11.0	111	20	152	216	40	2	5	751
Maris Templar	83.0	70.5	52.0	11.3	97	0	163	216	40	2	1	573
Maris Huntsman	80.5	69.6	50.1	11.1	106	0	161	216	30	3	1	519
Priboy	80.4	80.7	50.6	11.8	103	10	151	216	20	1	1	728
Martonvasar 3	79.8	80.4	50.4	13.0	97	0	151	216	5	1	3	620
Probstdorfer Karat	79.7	78.9	48.4	12.3	116	8	156	216	20	1	2	509
F26-70	79.2	78.2	45.6	12.1	96	0	150	211	20	2	2	594
Talent	78.4	77.4	39.0	12.6	82	5	151	216	70	3	1	681
Odesskaya 51	77.3	79.6	48.8	12.9	103	10	152	216	10	1	2	655
GKF-2	77.2	76.6	52.2	12.6	91	13	148	211	20	2	2	586
Flavio	76.9	76.2	43.1	12.4	81	0	148	211	90	3	2	577
WA 5829	76.6	72.8	36.2	10.7	87	10	157	211	30	1	3	767
Bezostaya 1	76.0	81.5	48.8	12.2	99	0	152	216	5	2	2	577
GKF-8001	73.6	79.8	46.0	12.1	73	0	152	216	20	1	3	618
Galiafen	73.5	78.1	40.9	12.6	97	3	151	211	90	5	2	601
Martonvasar 2	72.0	79.8	49.8	12.7	98	5	152	216	10	1	3	527
Biserka	70.7	76.5	43.0	13.2	79	0	146	211	60	2	1	554
Kitakomi-Komugi	69.5	70.1	42.8	12.0	91	18	148	211	40	3	3	581
Atlas 66	67.7	81.0	41.0	13.7	124	15	150	216	60	2	2	650
Bordenave Puan Sag	67.1	80.6	41.3	14.0	120	33	149	211	10	2	1	914
Dunav-1	66.8	77.8	43.3	13.1	78	0	147	211	70	2	1	518
Sentinel	66.3	79.1	39.8	15.2	109	50	149	211	20	2	1	918
TRS 237	65.8	78.0	44.4	14.3	120	10	148	213	60	3	2	688
NE 68719	63.5	76.1	35.3	12.3	86	0	152	213	20	2	7	708
Lerma Rojo 64	62.3	77.9	43.2	12.9	91	35	145	211	70	3	6	725
Oasis	60.5	77.3	43.5	14.7	113	23	150	216	30	2	1	730
Rashid	58.8	75.3	46.0	13.8	118	35	146	211	80	4	4	562
Sage	55.5	78.1	44.1	16.0	112	38	150	216	20	2	1	768
Mean	73.1	77.1	44.6	12.7	99.4	11.3	151.7	213.8	38.0	2.1	2.3	643.6
L.S.D. of cultivar means (.05)	4.8	1.0	--	0.6	3.8	6.3	1.0	--	--	0.7	-	75.1
Coefficient of variation (%)	4.6	0.9	--	3.6	2.7	40.0	0.5	--	--	24.9	-	8.3

[a] One replication only.

YUGOSLAVIA

NOVI SAD

COOPERATOR: S. Borojevic.

DATE OF PLANTING (EFFECTIVE GERMINATION): October 30, 1975.

PRECIPITATION DURING CYCLE OF TEST: 316 mm.

AMOUNT OF IRRIGATION APPLIED: None.

FERTILIZER USED: N = 42 kg/ha; P_2O_5 = 96 kg/ha; K_2O = 51 kg/ha.

GENERAL DESCRIPTION OF CLIMATIC CONDITIONS DURING TEST: Normal conditions were experienced.

DISEASE DEVELOPMENT: Light attack of leaf rust (Puccinia recondita).

INSECT, WEED OR PEST PROBLEMS: None.

DATE OF HARVEST: July 21, 1976.

AREA HARVESTED FOR YIELD: 4 square meters.

DATES WHEN DIFFERENT NOTES WERE TAKEN: Not reported.

Correlation Coefficients

No. of observations=120	Yield	Test weight	1000-kernel weight	Protein	Plant height	Lodging	Flowering
Test weight	.28**						
1000-kernel weight	.41**	.20*					
Protein	-.42**	.12	.03				
Plant height	-.33**	-.02	.14	.53**			
Lodging	-.17	-.03	.11	.52**	.49**		
Flowering	-.02	-.43**	.20*	-.07	.19*	-.08	
Ripening	.20*	-.41**	.28**	-.13	.13	.08	.69**

** Significant at the 1% level.

* Significant at the 5% level.

Table 56. Agronomic, grain quality and disease data for the 30 cultivars in the Eighth International Winter Wheat Performance Nursery grown at Novi Sad, Yugoslavia in 1976.

Cultivars	Yield q/ha	Test weight kg/hl	1000-kernel weight g	Protein %	Plant height cm	Lodging %	Date of Flowering days from	Date of Ripening Jan. 1	Leaf rust sev. %	Mildew sev. %	Mildew resp.	Seed grade 1-9
Talent	69.6	81.6	38.0	15.9	7[illegible]7	80	149	197	3	10	VS	4
Probstdorfer Karat	63.6	84.9	43.8	14.9	98	10	153	197	17	15	VS	2
Priboy	63.4	84.1	44.6	15.1	88	99	148	193	5	15	VS	5
GKF-2	59.7	80.0	35.6	15.0	77	30	146	190	10	20	VS	4
Flavio	59.2	82.3	35.3	14.3	85	10	147	190	15	25	VS	3
Dunav-1	58.6	82.6	37.9	15.9	81	40	143	189	1	5	VS	2
Maris Huntsman	56.7	77.0	46.4	16.0	89	70	155	197	12	1	VS	5
Blueboy	56.2	76.4	36.4	13.7	88	60	149	196	2	80	VS	4
Biserka	55.6	82.6	37.4	15.7	79	10	143	188	2	15	VS	5
GKF-8001	55.1	82.1	36.5	14.2	61	0	149	192	0	50	VS	3
WA 5829	54.9	81.7	36.3	13.2	75	0	153	194	15	60	VS	5
Kormoran	54.4	77.8	34.9	15.5	88	90	155	200	9	40	VS	4
Odesskaya 51	54.3	83.8	41.2	16.4	90	99	148	192	8	10	VS	3
Kitakomi-Komugi	54.2	80.2	35.1	13.9	76	94	145	194	3	40	VS	4
Martonvasar 2	52.3	82.5	44.3	17.0	87	99	148	191	5	5	VS	3
Galiafen	50.2	81.6	37.8	15.0	84	5	150	194	1	15	VS	3
Oasis	50.0	82.5	38.7	17.7	89	99	148	192	0	0		4
Martonvasar 3	49.6	82.8	42.3	17.0	84	10	148	192	40	60	VS	3
Bordenave Puan Sag	47.5	83.9	33.2	17.4	92	99	149	192	0	15	VS	1
F26-70	46.5	81.1	34.4	16.2	90	23	145	192	4	30	VS	3
Bezostaya 1	46.4	83.6	41.3	16.2	87	70	148	193	1	50	VS	2
Maris Templar	45.7	75.9	43.5	15.8	87	50	157	200	0	0		4
Sage	45.7	82.1	35.3	17.2	94	99	148	193	1	11	VS	3
Atlas 66	45.4	81.1	37.1	18.8	102	90	150	195	0	10	VS	4
NE 68719	44.8	80.4	29.4	15.3	78	0	149	194	1	90	VS	4
TRS 237	44.0	81.0	36.9	16.0	97	99	148	194	6	5	VS	4
Lely	43.7	78.2	34.3	15.3	92	30	162	193	1	60	VS	4
Sentinel	41.1	79.7	32.1	18.6	91	99	150	191	1	15	VS	2
Lerma Rojo 64	40.4	80.0	29.0	15.3	84	60	143	188	2	60	VS	5
Rashid	37.4	81.0	37.6	16.5	97	99	145	188	20	30	VS	2
Mean	51.5	81.1	37.5	15.8	86.2	57.4	149.0	193.0	6.2	28.1		3.4
L.S.D. of cultivar means (.05)	7.8	1.3	2.9	0.6	3.5	4.6	--	--	--	--		0.4
Coefficient of variation (%)	10.8	1.1	5.5	2.6	2.9	5.7	0.0	0.0	--	--		8.8
Local cultivar: Sava	59.1	81.3	34.5		75	60	148	188	3	1	VS	

YUGOSLAVIA

ZAGREB

COOPERATOR: J. Potocanac.

DATE OF PLANTING (EFFECTIVE GERMINATION): October 10, 1975.

PRECIPITATION DURING CYCLE OF TEST: 520 mm.

AMOUNT OF IRRIGATION APPLIED: Not reported.

FERTILIZER USED: N = 185 kg/ha; P_2O_5 = 206 kg/ha; K_2O = 108 kg/ha (9-18-18 compound and KAN-a nitrogenous fertilizer containing 27% Ammonium Nitrate, 24% Calcium Carbonate and 4% Magnesium Oxide).

GENERAL DESCRIPTION OF CLIMATIC CONDITIONS DURING TEST: Conditions were favorable during the autumn, followed by a heavy snow cover in the winter. Spring was cold and the summer dry.

DISEASE DEVELOPMENT: Strong attacks of powdery mildew (Erysiphe graminis) and stem rust (Puccinia graminis tritici) were observed.

INSECT, WEED OR PEST PROBLEMS: None.

DATE OF HARVEST: July 18, 1976.

AREA HARVESTED FOR YIELD: 4 square meters.

DATES WHEN DIFFERENT NOTES WERE TAKEN:

Sprouting - October 22, 1975.
Yellowing - May 4, 1976.
Erysiphe graminis - May 28, 1976.
Septoria sp. - June 2, 1976.
Fusarium sp. - June 24, 1976.
Lodging - July 3, 1976.
Puccinia recondita - July 3, 1976.
P. graminis tritici - July 3, 1976.

Correlation Coefficients

N- No. of observations	Yield	Test weight	1000-kernel weight	Protein	Plant height	Lodging	Flowering	Ripening
Test weight	.25							
N	30							
1000-kernel weight	.44*	.55**						
N	30	30						
Protein	-.26**	.30	-.23					
N	120	30	30					
Plant height	-.20*	.18	.01	.13				
N	120	30	30	120				
Lodging	-.69**	-.04	-.21	.34**	.41**			
N	120	30	30	120	120			
Flowering	-.16	-.12	-.15	-.02	.18	-.10		
N	30	30	30	30	30	30		
Ripening	-.05	-.04	.05	.08	.21	-.19	.65**	
N	30	30	30	30	30	30	30	
Winter survival	.16	-.11	.12	-.17	.04	-.13	.003	-.15
N	120	30	30	120	120	120	30	30

** Significant at the 1% level.

* Significant at the 5% level.

Table 57. Agronomic, grain quality and disease data for the 30 cultivars in the Eighth International Winter Wheat Performance Nursery grown at Zagreb, Yugoslavia in 1976.

Cultivars	Yield q/ha	Test[a] weight kg/hl	1000-kernel[a] weight g	Protein %	Plant height cm	Lodging %	Date of Flowering[a] days from Jan. 1	Date of Ripening[a] days from Jan. 1	Winter survival %
Biserka	65.3	75.8	33.0	15.5	92	2	148	187	99
Talent	63.6	76.1	28.9	14.2	86	3	162	193	93
Dunav-1	61.4	78.6	33.3	15.2	88	1	149	192	94
Maris Huntsman	59.9	74.3	35.0	12.8	110	3	159	195	97
Flavio	59.4	78.0	34.2	13.4	94	33	149	190	93
Maris Templar	56.8	75.3	35.1	12.9	102	32	160	195	94
Martonvasar 3	55.3	78.0	34.0	13.5	98	38	151	191	96
Lely	55.0	75.7	29.2	13.1	107	1	164	195	92
Kormoran	48.7	77.4	29.4	14.6	105	11	161	195	93
Bezostaya 1	48.6	79.8	34.0	13.6	101	17	162	192	97
F26-70	48.5	77.3	28.8	14.8	102	26	149	193	92
Galiafen	48.1	76.9	26.0	14.0	100	5	163	192	86
Martonvasar 2	47.8	79.2	33.0	13.7	104	30	150	190	96
Kitakomi-Komugi	46.1	76.8	27.4	12.9	97	51	148	189	96
GKF-2	45.0	73.6	35.4	14.1	91	44	149	190	97
Probstdorfer Karat	43.1	77.7	30.9	13.3	115	46	166	194	98
Priboy	43.0	78.2	34.6	13.5	103	53	164	193	83
GKF-8001	41.0	78.2	31.6	14.1	72	3	164	193	87
Oasis	40.1	78.2	28.9	15.2	106	94	151	192	96
Odesskaya 51	37.7	78.2	32.8	14.4	99	85	151	194	85
TRS 237	31.8	76.6	30.6	15.3	116	89	151	192	95
Blueboy	31.8	65.1	24.8	12.0	110	44	165	193	97
NE 68719	30.4	71.1	25.0	14.5	86	14	151	192	95
Atlas 66	29.2	77.7	29.6	15.2	116	80	165	194	89
Sentinel	29.1	77.5	26.8	15.6	103	74	162	191	93
Rashid	25.5	78.1	31.0	15.9	108	97	158	192	86
WA 5829	25.5	65.3	23.5	12.3	84	25	166	195	96
Sage	22.4	76.8	26.0	16.0	108	97	151	192	90
Lerma Rojo 64	21.5	70.5	24.7	14.6	89	75	145	186	92
Bordenave Puan Sag	18.5	77.5	27.8	15.4	106	98	165	191	99
Mean	42.7	76.0	30.2	14.2	99.8	42.2	156.6	192.1	93.1
L.S.D. of cultivar means (.05)	8.2	--	--	1.3	5.5	32.3	--	--	6.6
Coefficient of variation (%)	13.7	--	--	6.5	4.0	54.3	--	--	5.1

[a] One replication only.

Table 57. Agronomic, grain quality and disease data for the 30 cultivars in the Eighth International Winter Wheat Performance Nursery grown at Zagreb, Yugoslavia in 1976. Concluded.

Cultivars	Rust[a/]				Mildew[a/]		Septoria[a/]	Fusarium[a/]	Seed grade
	Leaf		Stem						
	sev. %	resp.	sev. %	resp.	sev. %	resp.	sev. 0-9	sev. 0-9	1-9
Biserka	5	MR	10	MR	35	MS	3	4	2
Talent	2	MR	15	MR	0	R	2	3	4
Dunav-1	10	MR	5	MS	30	MR	3	7	3
Maris Huntsman	30	MS	65	S	0	R	2	2	5
Flavio	20	MS	25	MS	30	MR	3	5	3
Maris Templar	2	MR	30	MS	0	R	2	1	5
Martonvasar 3	15	MR	25	MS	55	MS	5	3	4
Lely	4	MS	45	MS	50	MS	5	3	5
Kormoran	5	MS	15	MS	45	MS	4	4	5
Bezostaya 1	20	S	35	S	55	MS	3	5	3
F26-70	25	MR	30	MS	30	MR	5	6	3
Galiafen	15	R	5	R	30	MR	3	3	3
Martonvasar 2	40	MS	70	S	25	MR	4	6	2
Kitakomi-Komugi	55	S	45	S	65	S	3	6	4
GKF-2	5	MS	15	MS	35	MS	6	8	3
Probstdorfer Karat	65	S	85	S	5	R	3	3	2
Priboy	2	MR	10	MR	35	MR	4	3	3
GKF-8001	10	R	5	MR	25	MR	4	4	4
Oasis	5	R	0		5	R	1	4	4
Odesskaya 51	10	MR	40	MS	40	MS	4	3	3
TRS 237	2	MR	10	MR	25	MR	2	5	2
Blueboy	40	MS	75	S	45	MS	2	6	5
NE 68719	60	S	30	S	75	S	6	7	4
Atlas 66	5	MR	20	MR	20	MR	2	4	3
Sentinel	0		5	R	60	S	4	5	2
Rashid	15	MR	50	MS	65	S	5	7	3
WA 5829	35	S	40	S	70	S	5	4	5
Sage	5	R	0		45	MS	4	6	2
Lerma Rojo 64	0		0		75	S	2	7	4
Bordenave Puan Sag	10	MS	20	MR	60	S	3	4	2
Mean	17.2		27.5		37.8		3.5	4.6	3.3
L.S.D. of cultivar means (.05)	--		--		--		-	-	0.3
Coefficient of variation (%)	--		--		--		-	-	6.7

[a/] One replication only.

Table 58. Summary of average yield in quintals per hectare for cultivars grown in the Eighth International Winter Wheat Performance Nursery, 1976.

Cultivars	Kabul, Afghanistan	Herat, Afghanistan	Algiers, Algeria	Bordenave, Argentina	Vienna, Austria	Tolbukhin, Bulgaria	Temuco, Chile	Male Ripnany, Czechoslovakia	Sedlec, Czechoslovakia	Bohnshausen, East Germany	Cambridge, England [a]
Talent	59.7	57.6	17.6	27.9	67.5	25.5	49.8	96.4	44.8	59.4	57.0
Priboy	58.7	36.0	12.9	31.2	65.2	65.0	53.8	97.2	51.9	57.7	42.4
Probstdorfer Karat	62.3	48.7	17.1	29.6	63.1	60.2	57.5	91.3	51.7	58.1	39.6
Martonvasar 2	67.6	50.2	12.6	30.0	61.9	62.7	48.8	98.0	49.4	58.2	34.5
Blueboy	59.4	31.8	13.8	37.2	51.0	64.6	55.6	92.6	50.2	55.0	31.8
F26-70	50.1	43.7	20.4	32.3	62.6	48.8	52.3	96.9	42.8	62.3	41.8
Bezostaya 1	61.3	45.6	15.5	31.2	62.3	57.1	52.3	93.5	49.0	55.8	35.6
Odesskaya 51	54.9	47.4	12.6	36.3	68.3	63.0	40.3	88.0	50.5	58.3	45.8
Martonvasar 3	60.7	50.1	16.0	28.9	55.2	51.6	43.8	92.2	50.5	57.8	40.2
GKF-2	65.0	44.1	15.0	33.8	59.6	51.8	47.5	99.3	44.1	61.2	37.2
Maris Huntsman	47.0	23.5	9.5	22.4	66.9	56.7	64.1	90.2	50.4	55.2	51.8
Biserka	56.9	47.9	19.2	30.2	57.9	23.2	44.8	95.0	36.8	52.9	35.8
GKF-8001	66.9	50.9	15.6	25.7	49.5	52.2	45.8	87.5	45.9	52.7	42.3
Kormoran	51.2	29.9	14.9	28.6	60.5	43.1	56.3	84.1	47.3	54.7	32.8
Dunav-1	56.3	49.2	16.2	29.7	52.7	35.1	51.1	87.8	39.5	51.3	42.5
Kitakomi-Komugi	56.3	39.4	13.3	20.5	45.8	45.6	40.3	97.0	40.2	53.4	33.9
Lely	37.0	22.9	5.7	16.3	55.8	53.1	53.8	82.0	47.4	54.0	37.9
Maris Templar	42.8	22.7	7.0	18.5	53.1	25.3	56.6	85.3	37.3	53.8	40.2
Sage	58.6	35.1	14.2	38.8	59.2	59.0	42.8	83.3	46.3	55.3	36.8
Sentinel	60.5	38.8	13.8	28.1	46.6	59.3	36.1	91.5	50.5	56.1	42.5
WA 5829	42.0	17.2	7.8	24.1	41.4	34.7	42.3	87.6	46.2	50.8	41.3
TRS 237	49.7	42.2	13.1	25.2	61.2	34.4	29.6	82.5	48.3	47.0	34.5
NE 68719	46.2	33.0	13.5	34.5	43.8	55.1	32.8	83.3	54.8	58.0	31.4
Oasis	56.5	35.1	10.3	15.2	47.7	36.8	9.6	81.8	37.8	49.4	35.0
Flavio	59.5	53.6	27.9	35.6	65.7	11.3	42.6	79.1	20.6	51.1	40.0
Bordenave Puan Sag	56.5	28.9	10.9	33.4	58.6	47.6	43.3	63.1	42.6	46.5	32.1
Atlas 66	50.8	28.1	12.4	25.9	46.9	8.6	27.3	69.1	40.1	41.2	28.5
Lerma Rojo 64	59.0	46.0	18.2	28.8	49.9	5.2	38.0	60.3	14.1	41.5	23.6
Galiafen	51.1	40.4	16.4	27.6	32.7	0.0	32.8	38.4	3.5	40.0	37.3
Rashid	57.7	29.5	7.9	24.4	45.2	18.1	25.6	58.2	31.9	45.9	31.1
Means	55.4	39.0	14.0	28.4	55.2	41.8	43.9	84.4	42.2	53.1	37.6

[a] Two replications only.

Table 58. Summary of average yield in quintals per hectare for cultivars grown in the Eighth International Winter Wheat Performance Nursery, 1976. Continued.

Cultivars	Jokioinen, Finland	Orgerus, France	Martonvasar, Hungary	Szeged, Hungary	Hamadan, Iran [b/]	Karaj, Iran	Sulaimaniya, Iraq	Milano, Italy	Rieti, Italy	Morioka, Japan	Amman, Jordan
Talent	0.0	64.5	67.9	71.7	24.1	70.3	32.0	64.5	27.0	44.7	15.5
Priboy	2.6	62.2	70.9	67.5	31.6	70.6	40.1	56.3	27.1	16.9	17.4
Probstdorfer Karat	5.0	49.4	76.9	67.3	53.0	63.8	38.7	51.0	31.1	31.9	15.0
Martonvasar 2	2.3	56.0	62.9	62.6	36.8	65.9	32.3	60.8	37.0	24.5	13.1
Blueboy	0.1	54.7	55.4	58.7	49.7	72.1	39.7	52.6	35.5	47.0	23.0
F26-70	0.1	65.5	61.0	66.7	28.3	63.7	40.8	65.6	30.9	51.1	10.1
Bezostaya 1	2.0	54.6	59.2	60.9	40.6	72.1	38.3	53.5	30.2	28.8	10.5
Odesskaya 51	4.5	53.6	68.1	58.7	44.3	67.7	46.4	53.9	32.6	26.9	17.9
Martonvasar 3	1.8	58.4	56.7	57.6	42.6	72.6	46.7	63.2	31.8	24.3	18.7
GKF-2	0.6	55.6	52.6	61.0	36.6	63.4	35.1	50.9	33.8	42.0	18.2
Maris Huntsman	0.0	58.7	71.5	49.9	49.7	61.7	18.3	55.2	19.2	41.2	5.4
Biserka	0.0	52.9	64.6	68.1	24.2	72.4	38.1	68.0	23.4	48.1	13.5
GKF-8001	1.1	51.1	40.6	41.9	44.9	71.3	38.4	49.4	22.9	27.2	15.8
Kormoran	2.2	52.6	58.6	57.1	43.5	58.0	13.4	52.9	27.0	34.7	7.7
Dunav-1	0.1	50.4	62.8	56.2	30.7	66.7	39.1	61.7	24.2	38.0	17.4
Kitakomi-Komugi	0.0	53.9	56.4	59.4	39.8	73.7	32.7	72.7	27.0	41.0	14.4
Lely	2.3	52.0	52.9	42.4	38.3	55.5	12.7	42.5	27.3	41.5	11.2
Maris Templar	0.0	57.7	64.3	43.1	42.9	56.3	15.9	57.1	26.4	44.6	7.2
Sage	2.2	52.3	66.2	58.0	42.4	70.1	41.0	51.1	28.7	20.6	22.9
Sentinel	2.6	48.3	66.6	61.4	45.3	66.8	36.9	50.6	27.3	25.5	10.6
WA 5829	0.0	45.0	46.1	48.7	55.6	60.2	19.4	44.2	18.1	40.1	10.5
TRS 237	0.0	50.6	63.3	57.0	34.5	66.8	31.8	53.6	39.2	20.0	20.3
NE 68719	1.3	43.6	47.0	46.5	53.3	65.5	28.1	57.9	19.4	21.7	13.7
Oasis	2.3	50.3	66.2	67.7	40.5	66.2	35.3	53.7	29.8	42.6	15.4
Flavio	0.0	60.2	52.6	70.2	23.7	74.0	50.7	71.8	44.8	22.1	25.2
Bordenave Puan Sag	0.0	49.9	62.6	60.3	41.4	59.1	38.7	36.6	26.9	25.5	17.4
Atlas 66	0.0	48.7	54.9	62.1	36.4	55.3	29.1	49.8	29.7	34.1	17.8
Lerma Rojo 64	0.0	45.8	34.4	55.5	23.2	75.6	50.6	56.8	30.3	8.9	14.5
Galiafen	0.0	56.4	36.1	57.6	27.9	65.6	37.9	56.6	27.6	13.4	12.5
Rashid	0.0	46.0	39.5	42.3	16.6	55.5	30.0	47.0	16.8	14.1	20.9
Means	1.1	53.4	57.9	57.9	38.1	65.9	34.3	55.4	28.4	31.4	15.1

[b/] Not included in overall means and analysis due to severe differential bird damage.

Table 58. Summary of average yield in quintals per hectare for cultivars grown in the Eighth International Winter Wheat Performance Nursery, 1976. Continued.

Cultivars	Suwon, Korea	Beirut, Lebanon	Kathmandu, Nepal	Wageningen, Netherlands	Vollebekk, Norway	Warsaw, Poland	Fundulea, Romania	Bethlehem, South Africa		Svalof, Sweden	Zurich, Switzerland
								dryland	irrigated		
Talent	59.8	43.7	45.8	63.5	0.0	50.2	50.4	40.9	36.4	51.0	67.8
Priboy	56.9	33.8	49.0	55.5	32.9	59.2	57.2	31.5	35.7	48.2	57.4
Probstdorfer Karat	39.9	32.2	46.7	58.5	26.3	62.5	50.8	37.1	35.6	48.9	58.4
Martonvasar 2	62.3	41.9	48.6	47.5	25.8	51.4	52.5	28.7	36.3	41.1	58.4
Blueboy	56.2	46.2	42.4	52.0	26.7	49.8	50.2	35.4	42.3	36.7	62.5
F26-70	57.3	41.9	45.4	44.8	22.3	57.8	53.2	24.1	35.3	36.2	61.0
Bezostaya 1	61.5	36.9	44.9	49.0	35.5	54.4	53.0	34.0	40.8	37.6	57.8
Odesskaya 51	50.9	32.0	48.8	54.7	30.2	56.5	58.7	30.6	38.5	40.8	54.0
Martonvasar 3	48.9	32.1	47.9	51.8	19.4	57.6	50.2	33.0	35.0	42.0	61.3
GKF-2	48.2	39.8	39.4	50.0	16.3	46.6	51.3	31.2	39.0	35.1	62.3
Maris Huntsman	31.0	19.2	41.5	54.9	14.7	65.0	47.6	31.0	31.3	82.3	62.2
Biserka	48.6	36.2	41.7	46.7	0.0	65.6	54.6	27.2	33.5	25.7	60.8
GKF-8001	51.5	38.9	35.1	49.7	29.9	37.4	48.5	34.9	40.6	34.4	51.2
Kormoran	34.5	27.1	39.0	54.4	17.9	67.1	49.0	31.3	30.1	69.5	57.8
Dunav-1	44.7	33.5	38.2	49.7	18.1	50.3	52.3	24.0	29.8	29.5	55.6
Kitakomi-Komugi	59.3	36.2	43.8	47.7	6.8	36.3	57.9	27.9	33.3	19.8	45.5
Lely	36.0	15.2	41.6	52.0	24.6	52.5	54.3	31.5	25.4	63.4	61.9
Maris Templar	39.1	23.0	35.1	60.3	0.2	64.0	50.2	31.0	29.9	71.5	65.7
Sage	45.1	35.2	40.2	41.7	12.3	52.2	52.8	29.6	34.4	24.4	36.4
Sentinel	50.8	29.4	43.5	44.1	19.6	48.6	50.1	30.5	32.7	25.5	46.1
WA 5829	46.1	36.1	41.6	56.0	28.5	35.3	38.8	34.2	33.9	22.9	49.4
TRS 237	49.7	37.9	39.9	48.1	10.8	44.4	44.9	30.9	32.5	36.7	51.1
NE 68719	46.5	35.2	40.2	41.4	14.8	31.4	48.7	30.7	30.2	34.6	40.1
Oasis	41.0	33.2	35.5	52.1	29.3	45.2	46.0	24.0	30.7	28.4	44.6
Flavio	20.4	41.3	48.7	51.9	0.1	25.7	52.8	29.3	35.3	0	59.7
Bordenave Puan Sag	46.6	37.0	48.6	41.0	0.2	45.9	47.0	36.1	39.1	21.5	42.4
Atlas 66	47.7	31.4	37.4	42.1	0	47.2	39.4	24.4	28.9	21.8	52.8
Lerma Rojo 64	3.7	44.4	62.0	40.4	0	0.0	53.1	24.9	31.0	0	41.6
Galiafen	5.1	39.5	56.3	53.8	0	10.6	37.0	35.8	41.8	0	54.9
Rashid	12.8	33.1	48.0	31.3	0	11.2	30.1	24.3	29.6	2.9	30.4
Means	43.4	34.8	43.9	49.5	15.4	46.1	49.4	30.7	34.3	34.4	53.7

Table 58. Summary of average yield in quintals per hectare for cultivars grown in the Eighth International Winter Wheat Performance Nursery, 1976. Continued.

Cultivars	Ankara, Turkey	Erzurum, Turkey	Eskisehir, Turkey	Davis, California USA	Fort Collins, Colorado USA	Billings, Montana USA	Lincoln, Nebraska USA	Ithaca, New York USA	Rowan Co., No. Carolina USA	Stillwater, Oklahoma USA	Corvallis, Oregon USA
Talent	35.6	37.8	34.8	60.3	54.6	62.8	2.0	11.7	30.3	24.9	87.7
Priboy	33.7	36.3	41.2	53.0	52.0	69.8	43.1	11.2	16.0	25.9	46.7
Probstdorfer Karat	33.4	43.7	45.0	38.6	59.3	69.8	28.3	15.2	13.9	28.8	57.3
Martonvasar 2	33.7	37.9	38.8	52.4	55.2	70.3	40.9	12.3	23.9	26.5	53.2
Blueboy	35.7	51.7	47.5	68.5	50.4	61.7	33.8	9.0	21.4	33.4	48.6
F26-70	32.3	37.8	42.7	67.0	45.1	65.4	30.5	10.7	22.0	27.4	63.9
Bezostaya 1	35.6	40.4	42.4	50.7	51.8	61.7	41.1	13.1	23.7	31.3	57.5
Odesskaya 51	30.0	34.0	42.8	49.3	53.3	69.6	44.0	11.4	16.5	35.0	43.1
Martonvasar 3	33.0	39.4	40.1	58.5	48.8	63.9	43.0	16.1	24.0	30.1	51.3
GKF-2	31.6	39.0	38.2	66.3	50.9	63.2	31.7	10.9	24.4	30.1	67.6
Maris Huntsman	37.8	35.7	40.7	32.0	45.7	50.4	6.3	19.0	11.2	12.7	75.7
Biserka	29.4	24.1	36.1	64.5	42.2	56.5	1.2	12.5	22.2	26.1	72.4
GKF-8001	36.0	49.1	42.4	51.3	41.0	52.4	37.1	11.1	15.1	30.6	42.4
Kormoran	31.6	43.4	40.4	33.3	52.5	64.3	20.1	14.7	11.5	22.7	59.0
Dunav-1	28.3	19.5	38.0	65.6	42.2	56.0	5.6	12.4	20.8	26.9	73.5
Kitakomi-Komugi	33.2	35.1	36.4	65.6	54.2	61.8	11.4	8.2	22.2	23.1	31.8
Lely	36.0	50.5	45.3	48.8	48.8	37.6	8.7	14.2	14.0	19.3	83.7
Maris Templar	35.1	53.6	43.8	36.1	46.3	51.1	4.5	14.2	10.7	19.2	75.9
Sage	26.7	31.4	39.3	49.7	47.7	71.4	38.3	6.3	10.5	38.7	24.8
Sentinel	30.1	28.8	36.6	43.0	53.2	70.3	39.5	9.5	15.6	31.0	32.6
WA 5829	30.2	49.0	34.6	69.5	49.9	53.8	22.5	6.9	5.4	30.1	51.7
TRS 237	28.4	26.5	33.1	44.4	38.0	63.5	17.4	9.5	21.3	25.5	32.3
NE 68719	28.0	42.6	38.6	61.0	52.7	49.9	35.4	8.3	10.4	30.3	27.9
Oasis	28.8	20.0	32.4	41.8	35.9	67.8	31.3	7.4	18.4	25.2	17.4
Flavio	33.2	11.2	36.3	70.6	21.0	12.6	0.0	0.0	3.9	0.0	68.0
Bordenave Puan Sag	29.2	26.2	32.3	36.4	46.6	71.5	0.0	2.0	11.9	24.6	28.8
Atlas 66	23.1	17.8	32.3	33.2	31.2	50.6	0.4	8.1	5.7	23.9	47.4
Lerma Rojo 64	27.1	19.6	33.7	60.2	4.6	52.6	0.0	0.0	0.9	0.0	46.6
Galiafen	25.7	9.4	29.2	50.6	13.7	5.3	0.0	0.0	6.8	0.0	52.3
Rashid	24.2	18.5	30.1	42.4	30.9	31.3	0.0	0.0	6.0	0.0	28.3
Means	31.2	33.7	38.2	52.1	44.0	56.3	20.6	9.5	15.3	23.4	51.6

Table 58. Summary of average yield in quintals per hectare for cultivars grown in the Eighth International Winter Wheat Performance Nursery, 1976. Concluded.

Cultivars	Pullman, Washington USA	Krasnodar, USSR	Odessa, USSR	Monsheim, West Germany	Weihenstephan, West Germany	Novi Sad, Yugoslavia	Zagreb, Yugoslavia	Cultivar yield mean 50 sites	
								q/ha	% of Bezostaya 1
Talent	40.2	51.3	30.2	40.2	78.4	69.6	63.6	46.8	103.3
Priboy	38.1	56.2	36.3	41.9	80.4	63.4	43.0	46.2	102.0
Probstdorfer Karat	43.0	59.2	34.4	35.8	79.7	63.6	43.1	46.0	101.5
Martonvasar 2	40.4	61.1	43.1	39.7	72.0	52.3	47.8	45.8	101.1
Blueboy	36.8	57.7	33.5	37.3	83.5	56.2	31.8	45.7	100.9
F26-70	38.5	61.3	35.2	40.8	79.2	46.5	48.5	45.7	100.9
Bezostaya 1	38.0	52.9	38.2	38.5	76.0	46.4	48.6	45.3	100.0
Odesskaya 51	33.4	58.9	41.7	41.9	77.3	54.3	37.7	45.3	100.0
Martonvasar 3	37.6	49.4	36.9	38.5	79.8	49.6	55.3	45.1	99.6
GKF-2	34.4	61.2	35.2	42.8	77.2	59.7	45.0	44.9	99.1
Maris Huntsman	31.5	57.1	33.7	40.5	80.5	56.7	59.9	42.4	93.6
Biserka	32.5	50.9	27.6	37.0	70.7	55.6	65.3	42.4	93.6
GKF-8001	37.6	61.7	36.5	36.5	73.6	55.1	41.0	41.9	92.5
Kormoran	40.9	60.6	32.4	31.9	83.8	54.4	48.7	41.9	92.5
Dunav-1	38.9	41.9	31.1	37.5	66.8	58.6	61.4	41.5	91.6
Kitakomi-Komugi	28.9	53.5	31.8	40.2	69.5	54.2	46.1	40.8	90.1
Lely	51.3	60.0	37.1	33.8	86.0	43.7	55.0	40.8	90.1
Maris Templar	49.4	47.5	36.5	36.5	83.0	45.7	56.8	40.6	89.6
Sage	33.4	57.3	32.7	38.7	55.5	45.7	22.4	40.4	89.2
Sentinel	27.6	48.9	33.2	35.8	66.3	41.1	29.1	40.2	88.7
WA 5829	49.7	50.5	30.5	33.8	76.6	54.9	25.5	38.3	84.5
TRS 237	28.5	38.9	27.1	35.4	65.8	44.0	31.8	38.2	84.3
NE 68719	28.4	52.8	28.0	31.5	63.5	44.8	30.4	37.8	83.4
Oasis	23.9	52.8	35.0	35.2	60.5	50.0	40.1	37.6	83.0
Flavio	28.2	0.0	18.0	40.4	76.9	59.2	59.4	37.2	82.1
Bordenave Puan Sag	24.9	49.1	24.2	35.4	67.1	47.5	18.5	36.5	80.6
Atlas 66	29.9	29.6	19.2	34.3	67.7	45.4	29.2	33.3	73.5
Lerma Rojo 64	8.0	3.0	9.3	29.2	62.3	40.4	21.5	29.6	65.3
Galiafen	15.4	17.3	0.0	31.7	73.5	50.2	48.1	28.9	63.8
Rashid	20.2	15.0	18.7	31.0	58.8	37.4	25.5	27.1	59.8
Means	33.6	47.2	30.2	36.8	73.1	51.5	42.7	40.5	89.3

Table 59. Summary of yield rankings for cultivars grown in the Eighth International Winter Wheat Performance Nursery, 1976.

Cultivars	Kabul, Afghanistan	Herat, Afghanistan	Algiers, Algeria	Bordenave, Argentina	Vienna, Austria	Tolbukhin, Bulgaria	Temuco, Chile	Male Ripnany, Czecho-slovakia	Sedlec, Czecho-slovakia	Bohn-shausen, East Germany	Cam-bridge, England	Joki-oinen, Finland	Orgerus, France
Talent	8	1	5	18	2	23	11	6	17	3	1	25	2
Priboy	12	18	20	9	5	1	7	3	2	9	5	3	3
Probstdorfer Karat	4	7	6	13	6	5	2	12	3	6	12	1	24
Martonvasar 2	1	4	22	11	9	4	12	2	9	5	20	5	9
Blueboy	10	22	16	2	20	2	5	9	8	14	26	17	11
F26-70	24	13	2	7	7	15	9	5	19	1	7	16	1
Bezostaya 1	5	11	11	8	8	8	8	8	10	11	18	10	12
Odesskaya 51	20	9	21	3	1	3	22	14	6	4	3	2	14
Martonvasar 3	6	5	9	14	17	14	16	10	5	8	9	11	6
GKF-2	3	12	12	5	12	13	13	1	18	2	15	14	10
Maris Huntsman	26	27	26	26	3	9	1	13	7	13	2	19	5
Biserka	15	8	3	10	15	25	15	7	26	19	17	21	15
GKF-8001	2	3	10	22	22	12	14	17	16	20	6	13	19
Kormoran	21	23	13	16	11	18	4	19	13	15	24	8	16
Dunav-1	18	6	8	12	19	20	10	15	23	21	4	15	21
Kitakomi-Komugi	19	16	18	27	26	17	21	4	21	18	23	24	13
Lely	30	28	30	29	16	11	6	23	12	16	13	7	18
Maris Templar	28	29	29	28	18	24	3	18	25	17	10	18	7
Sage	13	20	14	1	13	7	18	21	14	12	16	9	17
Sentinel	7	17	15	17	25	6	24	11	4	10	4	4	26
WA 5829	29	30	28	25	29	21	20	16	15	23	8	29	29
TRS 237	25	14	19	23	10	22	27	22	11	25	21	22	20
NE 68719	27	21	17	19	28	10	26	20	1	7	27	12	30
Oasis	16	19	25	30	23	19	30	24	24	24	19	6	22
Flavio	9	2	1	4	4	27	19	25	28	22	11	20	4
Bordenave Puan Sag	17	25	24	6	14	16	17	27	20	26	25	27	23
Atlas 66	23	26	23	21	24	28	28	26	22	29	29	30	25
Lerma Rojo 64	11	10	4	15	21	29	23	28	29	28	30	26	28
Galiafen	22	15	7	20	30	30	25	30	30	30	14	28	8
Rashid	14	24	27	24	27	26	29	29	27	27	28	23	27

Table 59. Summary of yield rankings for cultivars grown in the Eighth International Winter Wheat Performance Nursery, 1976. Continued.

Cultivars	Martonvasar, Hungary	Szeged, Hungary	Hamadan, Iran	Karaj, Iran	Sulaimaniya, Iraq	Milano, Italy	Rieti, Italy	Morioka, Japan	Amman, Jordan	Suwon, Korea	Beirut, Lebanon	Kathmandu, Nepal	Wegeningen, Netherlands
Talent	5	1	27	10	21	5	21	4	14	3	3	11	1
Priboy	3	5	22	9	7	13	18	27	12	6	18	3	5
Probstdorfer Karat	1	6	3	20	11	22	8	15	16	22	22	10	3
Martonvasar 2	12	8	18	17	20	8	3	21	21	1	5	7	21
Blueboy	20	15	5	6	8	20	4	3	2	7	1	16	11
F26-70	15	7	24	21	6	4	9	1	27	5	4	12	23
Bezostaya 1	16	12	14	7	13	18	11	16	25	2	12	13	18
Odesskaya 51	4	16	8	12	4	15	6	18	8	9	24	4	7
Martonvasar 3	18	19	11	4	3	6	7	22	6	12	23	9	14
GKF-2	24	11	19	22	18	23	5	7	7	14	7	24	15
Maris Huntsman	2	24	4	23	27	14	28	9	30	26	29	20	6
Biserka	9	3	26	5	14	3	25	2	20	13	13	17	22
GKF-8001	27	30	7	8	12	26	26	17	13	8	9	30	17
Kormoran	17	20	9	26	29	19	19	13	28	25	27	25	8
Dunav-1	13	22	23	15	9	7	24	12	10	20	19	26	16
Kitakomi-Komugi	19	14	16	3	19	1	20	10	18	4	14	14	20
Lely	22	28	17	29	30	29	16	8	23	24	30	18	12
Maris Templar	10	27	10	27	28	10	23	5	29	23	28	29	2
Sage	8	17	12	11	5	21	14	25	3	19	16	22	26
Sentinel	6	10	6	14	16	24	17	19	24	10	26	15	24
WA 5829	26	25	1	24	26	28	29	11	26	18	15	19	4
TRS 237	11	21	21	13	22	17	2	26	5	11	10	23	19
NE 68719	25	26	2	19	25	9	27	24	19	17	17	21	27
Oasis	7	4	15	16	17	16	12	6	15	21	20	28	10
Flavio	23	2	28	2	1	2	1	23	1	27	6	5	13
Bordenave Puan Sag	14	13	13	25	10	30	22	20	11	16	11	6	28
Atlas 66	21	9	20	30	24	25	13	14	9	15	25	27	25
Lerma Rojo 64	30	23	29	1	2	11	10	30	17	30	2	1	29
Galiafen	29	18	25	18	15	12	15	29	22	29	8	2	9
Rashid	28	29	30	28	23	27	30	28	4	28	21	8	30

Table 59. Summary of yield rankings for cultivars grown in the Eighth International Winter Wheat Performance Nursery, 1976. Continued.

Cultivars	Vollebekk, Norway	Warsaw, Poland	Fundulea, Romania	Bethlehem, South Africa dryland	Bethlehem, South Africa irri.	Svalof, Sweden	Zurich, Switzerland	Ankara, Turkey	Erzurum, Turkey	Eskisehir, Turkey	Davis, California USA	Fort Collins, Colorado USA	Billings, Montana USA
Talent	27	15	15	1	8	5	1	5	13	22	10	3	14
Priboy	2	6	3	10	10	7	15	8	15	9	13	9	5
Probstdorfer Karat	8	5	14	2	11	6	11	10	6	3	25	1	6
Martonvasar 2	9	13	11	22	9	9	12	9	12	14	14	2	4
Blueboy	7	16	17	5	1	12	3	4	2	1	3	12	16
F26-70	11	7	6	28	12	14	8	14	14	6	4	20	9
Bezostaya 1	1	10	8	8	3	11	14	6	9	7	16	10	17
Odesskaya 51	3	9	1	18	7	10	18	19	18	5	19	5	7
Martonvasar 3	13	8	18	9	14	8	7	13	10	12	12	14	11
GKF-2	16	19	13	13	6	15	4	15	11	16	5	11	13
Maris Huntsman	18	3	23	15	21	1	5	1	16	10	30	19	25
Biserka	25	2	4	24	17	20	9	20	23	21	8	22	18
GKF-8001	4	23	22	6	4	17	20	3	4	8	15	23	22
Kormoran	15	1	20	12	25	3	13	16	7	11	28	8	10
Dunav-1	14	14	12	29	27	18	16	24	26	17	7	21	19
Kitakomi-Komugi	21	24	2	23	18	26	24	12	17	19	6	4	15
Lely	10	11	5	11	30	4	6	2	3	2	20	15	27
Maris Templar	22	4	16	14	26	2	2	7	1	4	27	18	23
Sage	19	12	9	20	15	22	29	27	19	13	18	16	2
Sentinel	12	17	19	19	19	21	23	18	20	18	22	6	3
WA 5829	6	25	28	7	16	23	22	17	5	23	2	13	20
TRS 237	20	22	26	16	20	13	21	23	21	25	21	24	12
NE 68719	17	26	21	17	24	16	28	25	8	15	9	7	26
Oasis	5	21	25	30	23	19	25	22	24	26	24	25	8
Flavio	24	27	10	21	13	28	10	11	29	20	1	28	29
Bordenave Puan Sag	23	20	24	3	5	25	26	21	22	27	26	17	1
Atlas 66	30	18	27	26	29	24	19	30	28	28	29	26	24
Lerma Rojo 64	28	30	7	25	22	29	27	26	25	24	11	30	21
Galiafen	29	29	29	4	2	30	17	28	30	30	17	29	30
Rashid	26	28	30	27	28	27	30	29	27	29	23	27	28

Table 59. Summary of yield rankings for cultivars grown in the Eighth International Winter Wheat Performance Nursery, 1976. Concluded.

Cultivars	Lincoln, Nebraska USA	Ithaca, New York USA	Rowan Co. No. Carolina USA	Still-water, Oklahoma USA	Corvallis, Oregon USA	Pullman, Washington USA	Krasnodar, USSR	Odessa, USSR	Monsheim, West Germany	Weihen-stephan, West Germany	Novi Sad, Yugoslavia	Zagreb, Yugoslavia
Talent	23	11	1	19	1	7	17	21	8	10	1	2
Priboy	2	13	14	16	19	10	12	8	2	6	3	17
Probstdorfer Karat	14	3	18	11	12	4	7	12	19	8	2	16
Martonvasar 2	5	10	4	14	13	6	4	1	9	18	15	13
Blueboy	10	19	9	3	17	14	9	14	14	3	8	22
F26-70	13	16	8	12	9	9	2	9	4	9	20	11
Bezostaya 1	4	7	5	4	11	11	14	3	12	15	21	10
Odesskaya 51	1	12	13	2	21	17	8	2	3	11	13	20
Martonvasar 3	3	2	3	9	16	12	20	5	11	7	18	7
GKF-2	11	15	2	8	8	15	3	10	1	12	4	15
Maris Huntsman	20	1	21	26	4	19	11	13	5	5	7	4
Biserka	24	8	7	15	6	18	18	23	15	19	9	1
GKF-8001	8	14	16	6	22	13	1	7	17	16	10	18
Kormoran	16	4	20	23	10	5	5	17	26	2	12	9
Dunav-1	21	9	11	13	5	8	24	19	13	23	6	3
Kitakomi-Komugi	18	21	6	22	25	21	13	18	7	20	14	14
Lely	19	6	17	24	2	1	6	4	24	1	27	8
Maris Templar	22	5	22	25	3	3	23	6	16	4	22	6
Sage	7	25	23	1	29	16	10	16	10	30	23	28
Sentinel	6	17	15	5	23	25	22	15	18	24	28	25
WA 5829	15	24	28	10	15	2	19	20	25	14	11	27
TRS 237	17	18	10	17	24	22	25	24	21	25	26	21
NE 68719	9	20	24	7	28	23	16	22	28	26	25	23
Oasis	12	23	12	18	30	27	15	11	22	28	17	19
Flavio	26	27	29	27	7	24	30	28	6	13	5	5
Bordenave Puan Sag	29	26	19	20	26	26	21	25	20	22	19	30
Atlas 66	25	22	27	21	18	20	26	26	23	21	24	24
Lerma Rojo 64	28	29	30	29	20	30	29	29	30	27	29	29
Galiafen	30	30	25	30	14	29	27	30	27	17	16	12
Rashid	27	28	26	28	27	28	28	27	29	29	30	26

Table 60. Summary of agronomic, quality and yield data for cultivars grown in the Eighth International Winter Wheat Performance Nursery, 1976.

Cultivars	Yield		Test weight		1000-kernel weight		Protein		Plant height		Lodging	
	q/ha	% of Bezostaya 1	kg/hl	rank	g	rank	%	rank	cm	rank	%	rank
Number of Sites	50		19		19		33		39		26	
Talent	46.8	103.3	76.8	21	34.5	23	14.0	17	80.2	6	7.7	9
Priboy	46.2	102.0	79.9	4	42.8	2	13.3	26	96.6	20	27.8	22
Probstdorfer Karat	46.0	101.5	80.9	1	39.4	9	14.1	14	108.0	28	12.5	14
Martonvasar 2	45.8	101.1	78.9	7	43.4	1	14.4	12	92.5	12	16.5	19
Blueboy	45.7	100.9	73.6	26	34.2	26	12.7	29	100.2	24	15.8	18
F26-70	45.7	100.9	78.4	12	38.0	13	13.6	23	94.2	16	6.7	7
Bezostaya 1	45.3	100.0	79.7	6	42.4	3	13.9	18	94.3	17	15.0	16
Odesskaya 51	45.3	100.0	80.3	3	40.9	6	14.0	15	96.1	19	28.1	23
Martonvasar 3	45.1	99.6	79.7	5	41.9	4	14.5	11	92.7	13	9.5	13
GKF-2	44.9	99.1	76.0	23	39.3	10	13.4	25	83.9	8	8.8	12
Maris Huntsman	42.4	93.6	71.6	30	39.8	7	13.6	22	98.4	23	8.1	11
Biserka	42.4	93.6	77.8	17	36.5	17	14.6	10	79.3	4	6.0	5
ČKF-8001	41.9	92.5	78.5	10	37.1	16	13.3	27	67.6	1	1.1	1
Kormoran	41.9	92.5	72.9	27	34.7	22	13.9	19	94.5	18	12.5	15
Dunav-1	41.5	91.6	78.0	16	37.7	14	14.6	9	78.6	3	5.7	4
Kitakomi-Komugi	40.8	90.1	76.3	22	34.3	25	13.0	28	87.7	10	21.6	20
Lely	40.8	90.1	72.9	29	32.3	28	14.0	16	93.1	15	3.6	2
Maris Templar	40.6	89.6	72.9	28	41.3	5	13.8	21	92.9	14	7.2	8
Sage	40.4	89.2	78.7	8	37.3	15	15.2	5	102.9	25	42.2	28
Sentinel	40.2	88.7	78.6	9	34.5	24	15.8	2	97.2	21	37.4	27
WA 5829	38.3	84.5	73.9	25	28.9	29	12.4	30	78.6	2	15.3	17
TRS 237	38.2	84.3	77.3	19	38.2	12	15.0	7	108.9	29	24.9	21
NE 68719	37.8	83.4	75.3	24	28.8	30	13.9	20	80.8	7	5.2	3
Oasis	37.6	83.0	78.2	14	35.7	19	15.0	7	98.0	22	35.5	26
Flavio	37.2	82.1	77.8	18	35.8	18	13.6	24	79.9	5	8.0	10
Bordenave Puan Sag	36.5	80.6	80.4	2	35.0	21	15.8	3	106.2	27	55.8	29
Atlas 66	33.3	73.5	78.1	15	35.1	20	16.6	1	113.4	30	28.7	24
Lerma Rojo 64	29.6	65.3	78.4	11	39.6	8	15.3	4	87.7	9	31.5	25
Galiafen	28.9	63.8	76.9	20	33.9	27	14.4	13	88.5	11	6.6	6
Rashid	27.1	59.8	78.3	13	38.9	11	15.0	6	102.9	26	57.8	30
Mean	40.5	89.3	77.2		37.1		14.2		92.5		18.8	
L.S.D. of cultivar means (.05)	3.6		1.7		2.1		0.4		2.8		9.9	
Coefficient of variation (%)	13.0		2.5		5.2		5.0		6.2		70.7	

Table 60. Summary of agronomic, quality and yield data for cultivars grown in the Eighth International Winter Wheat Performance Nursery, 1976. Concluded.

Cultivars	Date of Flowering: days from Jan. 1	Flowering: rank	Date of Ripening: days from Jan. 1	Ripening: rank	Shattering: %	Shattering: rank	Winter survival: %	Winter survival: rank	Frost damage: 0-9	Frost damage: rank
Number of sites	38		28		10		25		10	
Talent	158.4	12	201.6	18	10.4	20	70.5	24	3.3	24
Priboy	159.8	21	202.6	19	6.1	7	88.7	9	2.2	12
Probstdorfer Karat	164.9	26	207.4	26	6.2	10	91.6	1	1.8	3
Martonvasar 2	158.4	11	200.3	12	7.0	12	89.2	7	2.0	6
Blueboy	159.4	20	202.8	20	5.9	6	83.5	14	2.1	9
F26-70	156.7	9	199.4	8	9.0	19	83.5	13	2.2	12
Bezostaya 1	158.5	15	201.0	15	3.7	1	89.3	5	2.1	11
Odesskaya 51	158.8	16	201.1	17	6.4	11	89.3	6	2.0	7
Martonvasar 3	158.5	14	200.2	11	8.0	15	87.8	10	2.2	15
GKF-2	155.3	7	198.2	4	4.3	2	82.1	15	2.4	16
Maris Huntsman	168.4	28	209.1	28	5.6	5	81.0	18	2.4	16
Biserka	154.2	3	197.3	3	13.0	26	70.5	25	2.7	20
GKF-8001	160.2	23	203.2	23	5.0	3	85.3	11	2.1	8
Kormoran	168.3	27	209.0	27	11.5	23	81.9	16	2.1	9
Dunav-1	155.2	6	199.0	7	12.2	25	75.0	22	2.6	18
Kitakomi-Komugi	154.6	4	200.1	10	18.5	30	77.2	19	2.7	21
Lely	171.0	30	210.9	30	5.1	4	81.2	17	2.2	14
Maris Templar	168.9	29	210.6	29	13.6	27	75.2	21	2.8	23
Sage	158.9	17	200.3	13	12.2	24	89.7	4	1.9	4
Sentinel	158.5	13	201.1	16	6.1	8	90.7	3	1.8	2
WA 5829	164.1	25	207.4	25	11.4	22	85.1	12	1.7	1
TRS 237	155.5	8	200.8	14	8.5	18	75.5	20	3.3	25
NE 68719	161.0	24	202.8	21	6.2	9	89.0	8	1.9	5
Oasis	157.4	10	198.8	6	17.0	29	91.0	2	2.6	19
Flavio	154.9	5	196.7	2	8.1	16	36.2	28	5.6	27
Bordenave Puan Sag	159.0	18	199.8	9	7.1	13	73.2	23	2.7	21
Atlas 66	160.0	22	203.2	22	11.2	21	60.5	26	3.8	26
Lerma Rojo 64	151.0	1	194.5	1	8.3	17	32.3	29	6.7	29
Galiafen	159.1	19	203.9	24	13.9	28	26.2	30	7.0	30
Rashid	153.9	2	193.3	5	7.9	14	36.8	27	5.9	28
Mean	159.4		202.0		9.0		75.7		2.9	
L.S.D. of cultivar means (.05)	1.8		2.7		9.8		10.1		1.1	
Coefficient of variation (%)	0.9		1.4		63.1		8.6		20.0	

Table 61. Yield means and descriptive statistics for the 30 cultivars grown at 50 sites in the Eighth International Winter Wheat Performance Nursery, 1976.

Cultivars	Mean q/ha	Standard deviation	Low[a/] value	High value	Coefficient of variation	Corrected sums of squares
Talent	46.8	22.1	0.0	99.5	47.1	95861.6
Priboy	46.2	19.5	1.7	99.1	42.2	74961.9
Probstdorfer Karat	46.0	18.6	2.5	93.5	40.4	68164.3
Martonvasar 2	45.8	18.5	0.0	99.0	40.3	67255.0
Blueboy	45.7	17.9	0.0	103.0	39.1	62890.4
F26-70	45.7	19.2	0.0	98.3	42.1	72778.6
Bezostaya 1	45.3	17.2	0.1	97.8	38.0	58570.9
Odesskaya 51	45.3	17.6	3.5	92.1	38.8	60813.8
Martonvasar 3	45.1	17.6	0.0	97.4	39.0	61023.5
GKF-2	44.9	18.5	0.0	101.8	41.2	67402.7
Maris Huntsman	42.4	22.6	0.0	91.5	53.2	100534.3
Biserka	42.4	21.3	0.0	98.8	50.2	89534.1
GKF-8001	41.9	16.5	0.0	90.6	39.3	53561.1
Kormoran	41.9	19.4	0.0	86.9	46.3	74246.2
Dunav-1	41.4	19.0	0.0	88.9	45.8	71172.4
Kitakomi-Komugi	40.8	19.8	0.0	100.2	48.4	76995.8
Lely	40.8	20.3	0.3	94.5	49.7	80786.7
Maris Templar	40.6	21.7	0.0	87.5	53.5	92910.4
Sage	40.4	17.6	1.0	86.5	43.6	61022.6
Sentinel	40.2	18.0	1.1	95.9	44.8	64049.4
WA 5829	38.3	18.2	0.0	91.7	47.7	65512.0
TRS 237	38.2	16.9	0.0	89.8	44.4	56591.1
NE 68719	37.8	16.5	1.0	84.7	43.7	53884.0
Oasis	37.6	17.8	1.1	84.4	47.4	62598.8
Flavio	37.2	24.6	0.0	85.2	66.2	119460.3
Bordenave Puan Sag	36.5	18.1	0.0	76.3	49.7	64707.0
Atlas 66	33.3	17.3	0.0	70.4	51.8	58629.3
Lerma Rojo 64	29.6	22.5	0.0	81.5	76.1	99821.2
Galiafen	28.9	21.7	0.0	76.4	75.1	92632.0
Rashid	27.1	16.7	0.0	74.5	61.4	54659.5

[a/] Due to severe winter killing at Jokioinen, Finland.

Table 62. Correlation coefficients for yield, protein, and other agronomic traits combined over 52 nursery sites of the Eighth International Winter Wheat Performance Nursery, 1976.

Trait	Yield	Test weight	1000-kernel weight	Protein	Plant height	Lodging	Flowering	Ripening	Shattering	Winter survival
Test weight	.21**									
N	3699									
1000-kernel weight	.36**	.33**								
N	3277	2490								
Protein	-.16**	.24**	-.17**							
N	5263	3410	3129							
Plant height	.38**	-.09**	.18**	-.12**						
N	5457	3673	3274	4981						
Lodging	-.10**	.14**	.03	.16**	.28**					
N	3548	2593	2490	3328	3607					
Flowering	-.03	-.19**	-.05**	.03*	.01	-.11**				
N	5214	3471	3151	4738	5271	3453				
Ripening	-.07**	-.22**	-.04*	.00	.04**	-.08**	.96**			
N	3907	2748	2770	3676	4000	2578	4000			
Shattering	-.08**	-.03	-.22**	.08**	.10**	.05	-.10**	-.11**		
N	1577	1178	1089	1447	1576	1097	1576	1454		
Winter survival	.53**	-.04	-.01	-.15**	.30**	-.08**	-.29**	-.34**	-.03	
N	3057	1844	1929	2840	2639	1809	2605	2048	1068	
Frost damage	-.21**	.33**	-.23**	.20**	-.08**	.04	.19**	-.02	-.03	-.59**
N	1470	886	769	1461	1402	982	1402	1072	502	810

*, Significant at the 5% level.

**, Significant at the 1% level.

N = Number of observations.

Table 63. Summary of yield, quality, and agronomic data for the 30 cultivars grown in the Eighth International Winter Wheat Performance Nursery at sites in Northern Europe, 1976.

Cultivars	Yield		Test weight	1000-kernel weight	Protein	Plant height	Lodging	Date of Flowering	Date of Ripening	Shattering	Winter survival	Frost damage
	q/ha	% of Bezostaya 1	kg/hl	g	%	cm	%	days from Jan. 1		%	%	0-9
Number of sites	13		5	8	10	10	7	10	7	3	9	3
Maris Huntsman	55.5	108.4	71.8	40.3	14.4	100	2	162	200	6	71	2
Priboy	54.8	107.0	80.7	42.5	13.6	98	14	156	197	6	81	2
Probstdorfer Karat	53.0	103.5	80.6	39.4	14.5	110	10	160	198	7	85	2
Kormoran	52.6	102.7	73.2	35.5	14.3	98	3	162	198	7	71	2
Talent	52.6	102.7	76.8	34.7	14.4	79	2	155	195	7	61	3
Odesskaya 51	52.2	102.0	80.0	41.0	14.3	97	16	156	196	8	82	2
F26-70	51.7	101.0	77.8	38.4	14.2	92	1	152	194	12	71	1
Maris Templar	51.4	100.4	72.5	42.6	14.7	92	1	163	201	6	63	2
Lely	51.3	100.2	75.5	34.1	15.1	96	4	164	199	6	74	2
Martonvasar 3	51.3	100.2	80.9	41.4	14.7	92	1	155	192	8	77	2
Bezostaya 1	51.2	100.0	81.7	42.1	14.1	93	2	154	193	5	79	2
Martonvasar 2	50.9	99.4	79.5	42.1	14.5	90	6	155	200	9	81	1
Blueboy	50.2	98.1	75.4	33.9	13.4	101	20	157	198	5	69	2
GKF-2	50.0	97.7	75.8	39.6	13.6	83	4	151	191	10	68	2
Biserka	46.3	90.4	77.1	37.9	15.1	75	1	150	192	16	54	2
GKF-8001	46.2	90.2	79.5	37.3	13.5	67	2	156	196	11	74	2
Dunav-1	45.3	88.5	77.7	38.7	15.0	75	2	151	191	15	60	2
TRS 237	44.7	87.3	76.8	38.6	15.4	110	15	152	195	5	60	4
Sentinel	44.7	87.3	79.3	34.8	16.4	98	35	155	194	8	84	2
WA 5829	44.1	86.1	73.8	29.8	13.6	81	13	159	200	28	76	1
Oasis	43.4	84.8	78.2	37.5	15.3	101	23	155	192	7	86	2
Sage	43.0	84.0	77.8	37.5	15.6	102	26	154	194	11	83	1
Kitakomi-Komugi	42.8	83.6	74.5	34.5	13.6	86	12	150	193	25	65	2
NE 68719	41.7	81.5	76.3	29.7	14.3	82	8	155	195	12	81	2
GKF-2	40.9	79.9	77.6	36.6	13.9	76	1	152	191	8	40	3
Bordenave Puan Sag	39.6	77.3	80.1	35.5	16.6	107	50	156	194	5	62	2
Atlas 66	39.4	77.0	78.9	36.2	17.1	114	20	157	198	5	43	4
Galiafen	30.4	59.4	78.4	35.0	14.3	87	2	157	200	8	20	6
Rashid	30.2	59.0	76.9	40.9	15.2	105	49	151	195	9	34	5
Lerma Rojo 64	29.6	57.8	78.0	39.4	15.1	86	20	150	188	18	27	5
Mean	46.0	89.8	77.4	37.6	14.7	92.5	12.2	155.4	195.2	9.7	66.1	2.4
L.S.D. of cultivar means (.05)	6.6		3.0	2.8	0.7	3.7	14.1	1.8	4.7	15.4	16.8	2.2
Coefficient of variation (%)	9.6		1.4	4.0	2.9	4.2	84.5	0.7	0.5	40.7	13.1	19.9

Table 64. Summary of yield, quality, and agronomic data for the 30 cultivars grown in the Eighth International Winter Wheat Performance Nursery at sites in Southern Europe and Algeria, 1976.

Cultivars	Yield		Test weight	1000-kernel weight	Protein	Plant height	Lodging	Date of		Winter survival	Frost damage
	q/ha	% of Bezostaya 1	kg/hl	g	%	cm	%	Flowering	Ripening	%	0-9
								days from Jan. 1			
Number of sites	11		5	5	7	8	8	8	7	5	2
Priboy	50.5	107.7	82.5	45.1	13.5	100	52	147	191	94	1
Martonvasar 2	50.5	107.7	80.4	44.5	14.3	97	42	156	190	93	3
Probstdorfer Karat	50.4	107.5	82.8	42.0	13.9	109	24	151	193	94	1
Odesskaya 51	49.1	104.7	82.5	42.1	14.1	99	53	146	190	95	1
Talent	49.0	104.5	78.6	36.3	14.3	85	23	148	192	61	6
F26-70	48.9	104.3	79.5	37.6	14.0	96	14	145	190	92	3
Biserka	47.3	100.9	80.0	36.4	14.7	87	18	145	188	72	5
Martonvasar 3	47.1	100.4	80.6	42.6	14.2	95	26	147	190	95	3
Kitakomi-Komugi	47.1	100.4	79.7	36.0	12.7	89	47	145	191	89	4
GKF-2	47.0	100.2	76.8	38.7	13.4	88	23	146	189	89	3
Maris Huntsman	47.0	100.2	74.2	42.0	13.7	101	24	155	196	87	4
Bezostaya 1	46.9	100.0	82.1	42.9	14.0	97	43	146	191	97	2
Blueboy	46.4	98.9	73.5	34.0	12.0	102	32	149	193	93	3
Dunav-1	45.6	97.2	80.0	37.9	14.5	84	16	147	189	82	4
Kormoran	45.3	96.6	74.3	34.9	14.1	97	27	155	197	82	3
Oasis	44.4	94.7	81.5	39.0	15.5	102	65	146	189	94	4
Sage	44.4	94.7	82.0	38.5	15.7	104	66	146	189	94	1
Sentinel	43.7	93.2	80.8	35.5	16.1	101	60	144	190	96	1
Lely	43.1	91.9	75.4	32.6	13.8	100	8	157	196	86	3
Flavio	42.5	90.6	80.0	35.7	13.1	92	23	146	189	42	7
GKF-8001	42.3	90.2	78.0	35.5	13.7	70	2	148	191	91	3
Maris Templar	41.8	89.1	75.4	43.4	14.1	96	22	155	198	74	5
TRS 237	40.7	86.8	80.3	39.9	15.0	111	59	145	192	84	5
NE 68719	40.4	86.1	76.6	29.3	14.1	84	10	149	191	95	1
Bordenave Puan Sag	39.2	83.6	82.6	35.3	15.9	106	77	149	191	84	5
WA 5829	36.3	77.4	75.0	29.4	12.6	81	20	152	194	87	2
Atlas 66	34.6	73.8	79.9	37.0	16.7	112	52	149	194	74	6
Galiafen	31.5	67.2	79.4	36.3	14.3	91	14	147	192	33	9
Lerma Rojo 64	29.8	63.5	80.3	39.1	14.4	93	57	142	187	38	8
Rashid	27.1	57.8	81.5	40.0	15.0	106	75	144	189	39	8
Mean	43.3	92.3	79.2	38.0	14.2	95.8	35.8	147.8	191.4	81.0	3.8
L.S.D. of cultivar means (.05)	8.1		2.0	3.7	0.8	6.0	22.3	2.7	2.2	25.2	2.0
Coefficient of variation (%)	14.0		1.5	5.7	5.6	7.8	51.3	0.5	0.5	3.8	9.2

Table 65. Summary of yield, quality, and agronomic data for the 30 cultivars grown in the Eighth International Winter Wheat Performance Nursery at sites in North America, 1976.

Cultivars	Yield		Test weight	Protein	Plant height	Lodging	Date of Flowering	Winter survival
	q/ha	% of Bezostaya 1	kg/hl	%	cm	%	from Jan. 1	%
Number of sites	9		2	4	6	4	5	6
GKF-2	42.2	102.9	75.7	15.2	86	3	148	88
Martonvasar 2	41.7	101.7	77.3	16.4	97	12	153	94
Talent	41.6	101.5	75.0	14.8	82	0	151	80
Martonvasar 3	41.5	101.2	76.2	16.4	96	5	154	96
F26-70	41.1	100.2	78.3	15.9	101	12	148	89
Bezostaya 1	41.0	100.0	77.5	15.5	98	7	155	93
Blueboy	40.4	98.5	69.7	14.5	105	1	154	93
Priboy	39.3	96.3	78.3	15.9	100	44	156	95
Odesskaya 51	39.5	96.3	77.3	15.8	98	43	153	96
Probstdorfer Karat	39.4	96.1	79.9	15.6	109	14	165	98
Dunav-1	38.0	92.7	78.6	17.1	83	3	148	81
WA 5829	37.7	92.0	73.6	13.5	83	27	164	93
Biserka	36.6	89.3	77.7	16.3	84	1	146	77
Lely	36.3	88.5	75.1	15.3	94	0	172	82
Sentinel	35.8	87.3	75.1	16.8	100	53	157	97
Sage	35.6	86.8	73.0	17.2	108	67	157	96
Kormoran	35.4	86.3	72.3	15.4	98	23	168	95
GKF-8001	35.4	86.3	75.4	15.4	73	0	157	94
Kitakomi-Komugi	34.1	83.2	71.9	14.5	94	16	149	79
Maris Templar	34.1	83.2	76.6	14.7	96	0	169	80
NE 68719	33.8	82.4	70.3	16.1	83	1	158	95
Maris Huntsman	31.6	77.1	74.5	15.3	102	0	167	84
TRS 237	31.1	75.9	73.1	16.1	113	6	148	79
Oasis	29.9	72.9	70.1	17.7	105	48	150	96
Bordenave Puan Sag	27.4	66.8	76.5	17.7	108	68	152	68
Atlas 66	25.6	62.4	76.9	19.0	117	30	155	58
Flavio	22.7	55.4	78.3	15.6	79	2	148	7
Lerma Rojo 64	19.2	46.8	76.2	--	91	45	144	14
Rashid	17.7	43.2	77.3	16.2	106	80	145	13
Galiafen	16.0	39.0	75.1	16.0	90	8	154	8
Mean	34.1	83.1	75.4	15.9	95.9	20.6	154.9	77.2
L.S.D. of cultivar means (.05)	10.3		8.5	1.5	9.3	30.9	5.5	21.0
Coefficient of variation (%)	15.7		1.3	6.1	6.6	58.7	1.2	7.7

Table 66. Summary of yield, quality, and agronomic data for the 30 cultivars grown in the Eighth International Winter Wheat Performance Nursery at sites in the Southern Hemisphere, 1976.

Cultivars	Yield		Test weight	1000-kernel weight	Protein	Plant height	Lodging	Date of Flowering	Date of Ripening	Shattering
	q/ha	% of Bezostaya 1	kg/hl	g	%	cm	%	days from Jan. 1	days from Jan. 1	%
Number of sites	4		3	2	4	4	2	3	3	2
Blueboy	42.6	107.6	71.9	35.3	9.9	104	4	290	341	0
Probstdorfer Karat	40.0	101.0	78.8	38.9	10.7	116	3	307	354	0
Bezostaya 1	39.6	100.0	72.2	42.9	11.5	98	4	294	340	0
Talent	38.7	97.7	72.7	31.0	11.2	82	0	291	341	0
Priboy	38.0	96.0	77.0	42.0	10.6	98	8	296	343	0
Bordenave Puan Sag	38.0	96.0	79.5	33.9	12.4	114	49	293	340	0
GKF-2	37.9	95.7	73.4	39.9	11.4	86	3	287	336	0
Maris Huntsman	37.2	93.9	66.1	39.0	9.6	106	0	316	357	0
GKF-8001	36.8	92.9	76.2	37.1	11.0	70	0	296	345	0
Kormoran	36.6	92.4	68.5	33.8	9.7	102	0	315	355	0
Sage	36.4	91.9	76.6	37.9	11.8	109	21	296	343	12
Odesskaya 51	36.4	91.9	78.1	40.4	11.2	97	8	295	339	0
F26-70	36.0	90.9	75.4	38.6	11.0	96	3	290	338	15
Martonvasar 2	35.9	90.7	77.1	43.2	11.9	95	4	291	337	0
Flavio	35.7	90.2	74.2	35.1	11.2	81	0	285	331	10
Martonvasar 3	35.2	88.9	77.8	41.6	12.0	96	5	292	339	0
Galiafen	34.5	87.1	73.2	29.1	11.2	100	6	290	343	0
Maris Templar	34.0	85.9	67.8	36.7	9.7	98	0	318	360	0
Biserka	33.9	85.6	74.2	35.7	12.3	76	0	285	334	13
Dunav-1	33.6	84.9	74.2	34.6	12.5	77	0	287	339	9
WA 5829	33.6	84.9	71.9	28.1	8.9	81	23	302	349	0
NE 68719	32.1	81.1	72.3	26.6	11.5	86	0	301	348	0
Sentinel	31.8	80.3	75.0	32.5	12.7	102	8	295	342	0
Lely	31.7	80.0	64.8	31.1	9.0	98	0	321	360	0
Lerma Rojo 64	30.7	77.5	74.9	40.2	13.8	90	16	275	323	0
Kitakomi-Komugi	30.5	77.0	73.0	30.2	10.6	90	13	286	336	33
TRS 237	29.6	74.8	75.7	33.5	12.9	109	9	287	338	0
Atlas 66	26.6	67.2	75.8	32.1	13.1	120	11	294	344	0
Rashid	25.9	65.4	74.8	35.0	13.1	104	36	279	328	0
Oasis	19.8	50.0	75.6	21.5	11.9	92	9	290	338	6
Mean	34.3	86.6	74.0	35.2	11.3	95.8	8.0	294.6	342.0	3.2
L.S.D. of cultivar means (.05)	8.8		4.4	10.1	0.8	7.1	18.6	4.5	6.3	10.0
Coefficient of variation (%)	11.9		5.2	7.8	5.6	4.4	115.7	0.8	0.8	52.0

Table 67. Summary of yield, quality, and agronomic data for the 30 cultivars grown in the Eighth International Winter Wheat Performance Nursery at sites in the Near and Middle Eastern regions, 1976.

Cultivars	Yield		Test weight	1000-kernel weight	Protein	Plant height	Lodging	Date of Flowering	Date of Ripening	Shattering	Winter survival	Frost damage
	q/ha	% of Bezostaya 1	kg/hl	g	%	cm	%	days from Jan. 1		%	%	0-9
Number of sites	10		3	3	8	8	4	9	7	4	3	3
Blueboy	45.0	105.1	73.7	34.1	12.4	90	1	149	185	10	90	3
GKF-8001	44.5	104.0	81.3	38.1	12.7	60	0	151	187	4	90	2
Martonvasar 3	44.1	103.0	80.8	42.4	14.7	86	0	149	184	14	90	3
Flavio	43.4	101.4	77.8	35.3	13.4	75	1	144	179	9	71	5
Talent	43.3	101.2	78.4	33.7	14.0	72	0	150	185	21	87	4
Lerma Rojo 64	43.2	100.9	81.2	40.9	15.1	83	3	140	175	6	79	6
Martonvasar 2	43.0	100.5	78.4	45.2	14.4	84	0	149	183	11	94	3
Probstdorfer Karat	43.0	100.5	81.9	38.3	14.2	99	0	154	190	11	91	3
Bezostaya 1	42.8	100.0	81.4	41.9	13.9	87	0	150	185	5	94	3
Odesskaya 51	42.2	98.6	81.3	39.1	14.0	88	1	150	185	10	85	3
Priboy	41.7	97.4	79.0	40.7	12.8	89	4	150	186	10	87	3
GKF-2	41.4	96.7	76.6	39.9	13.2	77	0	147	183	3	92	4
F26-70	40.8	95.3	79.5	37.1	12.7	85	0	147	182	5	91	3
Kitakomi-Komugi	40.1	93.7	77.8	31.8	12.7	79	2	146	183	8	88	4
Sage	40.0	93.5	80.5	35.2	15.0	96	18	150	182	11	87	3
Biserka	39.6	92.5	78.3	35.5	14.1	73	0	146	181	12	92	3
Dunav-1	38.6	90.2	78.2	36.3	14.3	72	0	146	182	14	87	3
Sentinel	38.2	89.3	79.6	33.7	15.7	87	1	150	185	9	85	3
TRS 237	37.7	88.1	78.6	37.1	15.0	99	7	147	183	17	89	3
Bordenave Puan Sag	37.4	87.4	80.1	34.1	15.7	99	23	149	183	12	92	3
NE 68719	37.1	86.7	76.6	26.8	13.0	73	0	152	186	7	88	3
Galiafen	36.8	86.0	76.0	32.3	14.5	83	0	148	185	29	61	6
Oasis	35.8	83.6	80.3	35.6	14.6	85	7	148	183	31	89	3
Rashid	34.7	81.1	79.2	36.7	14.6	97	42	142	180	10	85	4
Kormoran	34.2	79.9	74.8	33.6	13.9	80	0	157	191	21	88	3
WA 5829	34.1	79.7	73.4	26.3	11.7	69	0	154	190	8	90	3
Maris Templar	33.5	78.3	72.6	37.9	13.7	83	0	157	190	28	93	3
Maris Huntsman	33.1	77.3	71.2	36.6	13.2	86	0	157	189	10	89	3
Lely	32.8	76.6	72.4	28.9	14.1	78	0	159	195	9	89	3
Atlas 66	32.3	75.5	76.5	31.3	16.5	106	6	150	184	23	87	4
Mean	39.1	91.5	77.9	35.9	14.0	84.0	3.9	149.6	184.6	12.6	87.3	3.3
L.S.D. of cultivar means (.05)	6.2		6.0	6.5	1.0	7.1	13.3	4.0	4.4	19.9	16.4	1.1
Coefficient of variation (%)	14.2		2.2	4.5	6.1	6.4	243.4	1.2	1.7	59.7	5.6	25.5

Table 68. Summary of yield, quality, and agronomic data for the 30 cultivars grown in the Eighth International Winter Wheat Performance Nursery at sites in the Far Eastern region, 1976.

Cultivars	Yield		Protein	Plant height	Date of		Winter survival
	q/ha	% of Bezostaya 1	%	cm	Flowering (days from Jan. 1)	Ripening (days from Jan. 1)	%
Number of sites	2		2	2	2	2	2
F26-70	54.2	119.9	14.7	107	148	183	97
Talent	52.2	115.5	14.8	89	150	183	90
Blueboy	51.6	114.1	13.9	107	152	189	88
Kitakomi-Komugi	50.1	110.8	14.0	97	147	187	90
Biserka	48.3	106.9	14.8	85	148	183	97
Bezostaya 1	45.2	100.0	14.9	98	152	184	100
GKF-2	45.1	99.8	14.4	91	149	184	100
Martonvasar 2	43.4	96.0	15.7	97	151	187	100
WA 5829	43.1	95.4	11.9	77	155	194	93
Maris Templar	41.8	92.5	14.4	100	159	194	97
Oasis	41.8	92.5	14.6	109	150	183	97
Dunav-1	41.3	91.4	15.5	88	148	185	97
Atlas 66	40.9	90.5	17.3	121	152	188	80
GKF-8001	39.3	87.0	14.1	68	152	190	93
Odesskaya 51	38.9	86.1	14.6	101	151	186	97
Lely	38.8	85.8	15.8	97	160	196	91
Sentinel	38.1	84.3	16.4	98	149	184	100
Priboy	36.9	81.6	14.3	96	153	188	97
Martonvasar 3	36.6	81.0	15.2	95	152	187	93
Maris Huntsman	36.1	79.9	15.9	100	158	194	97
Bordenave Puan Sag	36.0	79.7	15.7	107	150	186	87
Probstdorfer Karat	35.9	79.4	14.9	108	155	192	100
TRS 237	34.8	77.0	15.8	115	148	188	97
Kormoran	34.6	76.6	15.9	94	157	193	87
NE 68719	34.1	75.4	14.7	76	151	187	100
Sage	32.9	72.8	16.0	97	150	185	97
Flavio	21.3	47.1	16.1	73	150	189	43
Rashid	13.4	29.7	17.3	92	147	192	48
Galiafen	9.3	20.6	17.9	76	153	193	44
Lerma Rojo 64	6.3	13.9	19.3	78	149	189	24
Mean	37.4	82.8	15.4	94.5	151.5	188.0	87.3
L.S.D. of cultivar means (.05)	20.9		1.5	13.3	3.6	5.1	16.2
Coefficient of variation (%)	15.2		4.4	7.1	0.6	1.7	4.9

Table 69. Summary of regional yield means (q/ha) and rankings for the 30 cultivars grown in the Eighth International Winter Wheat Performance Nursery, 1976.

Cultivars	Northern Europe		Southern Europe		Near East		Far East		North America		Southern Hemisphere		Cultivar mean over 50 sites
	q/ha	rank	q/ha	rank	q/ha	rank	q/ha	rank	q/ha	rank	q/ha	rank	
Number of sites	13		11		10		2		9		4		50[a/]
Talent	52.6	5	49.0	5	43.3	6	52.2	2	41.6	3	38.7	4	46.8
Priboy	54.8	2	50.5	1	41.7	11	36.9	18	39.5	8	38.0	5	46.2
Probstdorfer Karat	53.0	3	50.4	3	43.0	8	35.9	22	39.4	10	40.0	2	46.0
Martonvasar 2	50.9	12	50.5	2	43.0	7	43.4	8	41.7	2	35.9	14	45.8
Blueboy	50.2	13	46.4	13	45.0	1	51.6	3	40.4	7	42.6	1	45.7
F26-70	51.7	7	48.9	6	40.8	13	54.2	1	41.1	5	36.0	13	45.7
Bezostaya 1	51.2	11	46.9	12	42.8	9	45.2	6	41.0	6	39.6	3	45.3
Odesskaya 51	52.2	6	49.1	4	42.2	10	38.9	15	39.5	9	36.4	12	45.3
Martonvasar 3	51.3	10	47.1	8	44.1	3	36.6	19	41.5	4	35.2	16	45.1
GKF-2	50.0	14	47.0	10	41.4	12	45.1	7	42.2	1	37.9	7	44.9
Maris Huntsman	55.5	1	47.0	11	33.1	28	36.1	20	31.6	22	37.2	8	42.4
Biserka	46.3	15	47.3	7	39.6	16	48.3	5	36.6	13	33.9	19	42.4
GKF-8001	46.2	16	42.3	21	44.5	2	39.3	14	35.4	18	36.8	9	41.9
Kormoran	52.6	4	45.3	15	34.2	25	34.6	24	35.4	17	36.6	10	41.9
Dunav-1	45.3	17	45.6	14	38.6	17	41.3	12	38.0	11	33.6	20	41.5
Kitakomi-Komugi	42.8	23	47.1	9	40.1	14	50.1	4	34.1	19	30.5	26	40.8
Lely	51.3	9	43.1	19	32.8	29	38.8	16	36.3	14	31.7	24	40.8
Maris Templar	51.4	8	41.8	22	33.5	27	41.8	10	34.1	20	34.0	18	40.6
Sage	43.0	22	44.4	17	40.0	15	32.9	26	35.6	16	36.4	11	40.4
Sentinel	44.7	19	43.7	18	38.2	18	38.1	17	35.8	15	31.8	23	40.2
WA 5829	44.1	20	36.3	26	34.1	26	43.1	9	37.7	12	33.6	21	38.3
TRS 237	44.7	18	40.7	23	37.7	19	34.8	23	31.1	23	29.6	27	38.2
NE 68719	41.7	24	40.4	24	37.1	21	34.1	25	33.8	21	32.1	22	37.8
Oasis	43.4	21	44.4	16	35.8	23	41.8	11	29.9	24	19.8	30	37.6
Flavio	40.9	25	42.5	20	43.4	5	21.3	27	22.7	27	35.7	15	37.2
Bordenave Puan Sag	39.6	26	39.2	25	37.4	20	36.0	21	27.4	25	38.0	6	36.5
Atlas 66	39.4	27	34.6	27	32.3	30	40.9	13	25.6	26	26.6	28	33.3
Lerma Rojo 64	29.6	30	29.8	29	43.2	4	6.3	30	19.2	28	30.7	25	29.6
Galiafen	30.4	28	31.5	28	36.8	22	9.3	29	16.0	30	34.5	17	28.9
Rashid	30.2	29	27.1	30	34.7	24	13.4	28	17.7	29	25.9	29	27.1
Mean	46.0		43.3		39.1		37.4		34.1		34.3		40.5
L.S.D. of cultivar means (.05)	6.6		8.1		6.2		20.9		10.3		8.8		3.6
Coefficient of variation (%)	9.6		14.0		14.2		15.2		15.7		11.9		13.0

[a/] Two replications from Cambridge, England are included in the overall means and analysis, but were omitted from the means and analysis of Northern Europe.

Table 70. Reaction of International Winter Wheat Performance Nursery cultivars to Yellow rust (Puccinia striiformis) in 1976.

Cultivar	Herat, Afghanistan	Bordenave, Argentina		Temuco, Chile		Sulaimaniya, Iraq[a/]		Rieti, Italy	Beirut, Lebanon		Fundulea, Romania	
	sev. %	sev. %	resp.	sev. %	resp.	sev. 0-9	resp.	sev. %	sev. %	resp.	sev. %	resp.
Number of replications	4	4		1		4		4	1		4	
Maris Templar	7	0		0		0		0	0		0	
Maris Huntsman	7	0		5	MR	0	0-MR	0	0		0	
Martonvasar 2	0	20	S	1	R	0		0	0		0	
Dunav-1	0	12	MS-S	1	R	0		0	0		7	S
Flavio	0	12	MS-S	40	MS	0		0	0		0	
GKF-2	0	6	R-MS	1	R	1	0-S	0	0		0	
Biserka	0	12	MS-S	70	S	0		0	0		15	S
TRS 237	0	52	S	50	S	0		37	10	MS	8	S
Lely	2	0		10	MS	0		0	5	MR	0	
Sentinel	0	30	MS	20	MS	0		0	0		15	S
Rashid	6	12	MS-S	80	S	1	0-VS	0	0		0	
Kormoran	0	0		0		0		0	0		0	
Kitakomi-Komugi	10	80	S	70	S	2	0-VS	0	30	MS	0	
Talent	0	30	S	30	MS	0		0	0		0	
Bezostaya 1	0	30	S	20	MS	0		0	0		0	
Lerma Rojo 64	0	37	S	0		0		0	1	MR	0	
Bordenave Puan Sag	0	27	MS	10	MS	0		0	0		7	MS
Galiafen	0	4	R-MR	10	MS	0		0	0		8	MS
GKF-8001	0	35	S	10	MS	0		0	0		0	
Martonvasar 3	0	27	MS-S	5	MS	0		0	0		0	
Oasis	0	75	S	50	MS	1	0-MS	0	0		25	S
Probstdorfer Karat	0	4	R	0		0		0	0		0	
Sage	0	2	0-R	30	MS	0		0	0		10	S
Odesskaya 51	0	12	MS-S	20	MS	1	0-MS	0	0		15	S
Priboy	6	6	MR	1	R	0		0	0		0	
F26-70	13	10	MR-MS	10	MS	0		0	0		12	S
WA 5829	10	60	S	40	MS	1	0-MS	0	5	MR	12	S
NE 68719	5	35	MS-S	50	MS	0		0	5	MS	25	S
Atlas 66	0	5	MR	40	MS	0		0	10	MR	45	VS
Blueboy	12	7	MR-MS	10	MR	0		0	0		12	MS

[a/] Not included in overall severity mean.

Table 70. Reaction of International Winter Wheat Performance Nursery cultivars to Yellow rust (Puccinia striiformis) in 1976. Concluded.

Cultivar	Zurich, Switzerland		Ankara, Turkey		Erzurum, Turkey		Eskisehir, Turkey		Billings, Montana, USA		Corvallis, Oregon, USA		Severity	
	sev. %	resp.	sev. %	resp.	sev. %	resp.	sev. %	resp.	sev. %	resp.	sev. %	resp.	Cultivar mean: over 12 locations, %	High score %
Number of replications	4		4		4		4		1		4			
Maris Templar	0		0		0	0-R	0		1		0		1	7
Maris Huntsman	0		0		0	0-R	0		1		0		1	7
Martonvasar 2	5	0-MR	10	MS	1	R	0		20	0-MR	60	S	9	60
Dunav-1	0		0		0	0-R	2	0-S	5	0-R	40	MS	5	40
Flavio	0		0		0	0-R	3	0-S	5	0-R	20	MR-MS	6	40
GKF-2	0		0		10	MR-S	0		10	0-MR	60	S	7	60
Biserka	5	0-MR	10		1	R	2	0-MS	5	0-R	40	S	12	70
TRS 237	5	0-MR	20		2	0-R	25	S	15	0-MR	80	S	23	80
Lely	0		0		6	R	2	0-S	30	0-M	1	0-R	4	30
Sentinel	0		10	MS	7	R-MS	3	0-S	20	0-MR	60	S	13	60
Rashid	0		10	S	10	S	1	0-S	40	0-MS	99	S	20	99
Kormoran	0		0		0	0-R	0		20	0-MR	0		2	20
Kitakomi-Komugi	0		10	S	11	R-S	0		15	0-MR	60	S	22	80
Talent	0		0		2	0-R	0		5	0-R	0		5	30
Bezostaya 1	0		0		1	R	0		10	0-MR	60	S	9	60
Lerma Rojo 64	0		0		6	R-S	0		15	0-R	0		5	37
Bordenave Puan Sag	0		0		2	0-R	0		50	0-MS	30	MR	10	50
Galiafen	0		0		15	0-MS	0		20	0-MR	30	MR-MS	7	30
GKF-8001	5	0-MR	0		0		0		1		40	S	7	40
Martonvasar 3	16	MR-M	0		7	R-S	0		40	0-MS	84	S	14	84
Oasis	30	MR-S	0		17	MR-MS	5	0-MS	60	0-S	99	S	28	99
Probstdorfer Karat	0		10		8	R-MS	5	0-S	5	0-VR	10	MR	3	10
Sage	0		0		7	R-S	0		35	0-M	80	S	13	80
Odesskaya 51	11	MR	5	S	15	S	0		30	0-M	60	S	13	60
Priboy	0		0		6	R	0		10	0-MR	30	MR	5	30
F26-70	3	0-MR	0		3	0-S	0		5	0-R	60	MS	9	60
WA 5829	0		5	S	27	S	13	MS-S	10	0-MR	10	MR	15	60
NE 68719	11	MR	10	S	21	R-S	13	MS-S	80	0-VS	80	S	26	80
Atlas 66	0		10	MS	40	MR-S	11	MR-S	25	0-M	10	MR	15	45
Blueboy	0		0		4	R-S	0		60	0-S	60	S	13	60

Table 71. Reaction of International Winter Wheat Performance Nursery cultivars to Stem rust (Puccinia graminis tritici) in 1976.

Cultivar	Herat, Afghanistan sev. %	Bordenave, Argentina sev. %	Bordenave, Argentina resp.	Tolbukhin, Bulgaria sev. %	Tolbukhin, Bulgaria resp.	Martonvasar, Hungary sev. %	Martonvasar, Hungary resp.	Karaj, Iran sev. %	Karaj, Iran resp.	Sulaimaniya, Iraq[a] sev. 0-9	Sulaimaniya, Iraq[a] resp.	Rieti, Italy sev. %
Number of replications	4	4		4		4		1		4		4
Maris Templar	36	57	S	52	S	94	S-VS	15	MS	2	R-S	65
Maris Huntsman	58	65	S	75	S	91	S-VS	25	MS	2	MR-S	87
Martonvasar 2	0	12	S	75	MS	15	0-S	10	MS	0	0-R	50
Dunav-1	0	15	MS-S	75	S	2	0-MS	10	MS	0	0-R	62
Flavio	5	1	MR	75	S	92	S-VS	15	MS	0	0-R	25
GKF-2	67	22	S	75	S	52	MR-S	20	MS	2	MR-S	57
Biserka	0	15	MS	75	MR	10	VR-R	10	MS	1	0-MS	55
TRS 237	0	2	MR	45	M	31	R-MS	5	MS	0		32
Lely	90	75	S	76	VS	96	S-VS	50	S	1	R-MR	96
Sentinel	0	25	MS-S	25	MR	33	R	0		0		0
Rashid	99	22	S	99	M	74	VR-VS	30	S	2	0-VS	96
Kormoran	42	67	S	75	S	94	M-VS	5	S	1	MR	67
Kitakomi-Komugi	89	15	MS	75	VS	65	MS-VS	30	S	5	MR-VS	80
Talent	0	10	MS	80	VS	32	0-VS	5	MS	0		15
Bezostaya 1	0	25	S	75	VS	20	VR-VS	10	MS	0		77
Lerma Rojo 64	0	0		1	MR	1	0-VR	0		0		35
Bordenave Puan Sag	1	35	S	60	M	27	VR-M	10	MS	0	0-S	45
Galiafen	0	15	MR-MS	0		35	0-R	1	MR	0	0-VR	0
GKF-8001	0	27	MS-S	60	VS	10	0-MS	50	S	0	0-MR	40
Martonvasar 3	0	20	MS-S	75	VS	25	VR-MS	50	S	0	0-MR	32
Oasis	0	0	0-R	0		2	0-VR	0		0	0-VR	0
Probstdorfer Karat	0	27	S	60	S	27	VR-VS	10	MS	0	0-VR	40
Sage	0	0		25	R	3	0-VR	0		0	0-VR	0
Odesskaya 51	11	47	S	80	VS	30	R-VS	50	S	3	MS-S	57
Priboy	46	37	S	75	VS	79	M-VS	30	MS	1	R-MS	67
F26-70	75	42	S	71	S-VS	82	MS-VS	70	S	4	MR-S	55
WA 5829	48	80	S	60	S	92	S-VS	70	S	4	MS-S	77
NE68719	36	37	S	89	S	72	R-S	1	MS	4	MS-VS	30
Atlas 66	0	20	MS	75	VS	30	VR-MS	10	S	0	0-R	60
Blueboy	58	77	S	75	S	82	M-VS	70	S	3	MR-S	99

[a] Not included in overall severity means.

Table 71. Reaction of International Winter Wheat Performance Nursery cultivars to Stem rust (Puccinia graminis tritici) in 1976. Continued.

Cultivar	Suwon, Korea		Beirut, Lebanon		Bethlehem, South Africa				Erzurum, Turkey		Eskisehir, Turkey	
					dryland		irrigated					
	sev. %	resp.	sev. %	resp.	sev. %	resp.	sev. %	resp.	sev. %	resp.	sev. %	resp.
Number of replications	4		1		4		4		4		4	
Maris Templar	20	MS	5	S	60	S	62	S	55	S	27	S
Maris Huntsman	1	R	10	S	50	S	75	S	55	MS-S	17	MS-S
Martonvasar 2	2	R	10	S	0	0-S	1	0-S	35	S	3	0-S
Dunav-1	77	MS-S	5	S	27	S	21	S	20	MS	8	0-S
Flavio	15	MR-MS	5	S	22	S	21	S	75	S	3	0-S
GKF-2	32	MR-MS	10	S	37	S	15	S	45	S	3	0-S
Biserka	7	R-MR	0	S	62	S	37	S	20	S	5	0-S
TRS 237	0		10	S	5	0-S	2	MS-S	70	S	6	0-S
Lely	11	R-MR	10	S	60	S	69	S	60	S	42	S
Sentinel	0		5	MS	0	0-S	6	R-S	35	S	0	
Rashid	45	MS-S	10	MS	16	S	18	S	65	S	30	S
Kormoran	0	R	5	S	25	S	42	S	40	S	9	S
Kitakomi-Komugi	40	MS	10	S	37	S	15	MS-S	55	S	17	S
Talent	7	R-MR	5	S	6	0-S	0	0-S	20	MS-S	5	0-S
Bezostaya 1	22	MR	10	S	0	0-S	0	0-S	25	MS-S	7	S
Lerma Rojo 64	40	MS	0		2	0-S	0		55	S	0	
Bordenave Puan Sag	0	R	5	MS	0	0-MR	1	0-S	20	MS-S	0	
Galiafen	0	R	0		0		0		20	MR-MS	2	0-S
GKF-8001	1	R	10	S	3	S	0		40	S	13	S
Martonvasar 3	3	R-MR	10	S	0		0		45	S	6	S
Oasis	3	R-MR	0		0		0		0		0	
Probstdorfer Karat	6	R-MR	10	S	0		0		25	MS-S	21	S
Sage	7	R-MR	0		0		0	0-R	0		0	
Odesskaya 51	1	R	10	S	0	0-S	0	0-S	40	MS-S	10	0-S
Priboy	0	R	5	S	6	S	8	S	40	MS-S	8	0-S
F26-70	2	R-MR	10	S	57	S	11	S	45	MS-S	1	0-S
WA 5829	25	MR-MS	10	S	57	S	52	S	35	S	13	S
NE 68719	3	R-MR	5	MS	40	S	72	S	45	S	3	0-S
Atlas 66	1	R-MR	5	MS	1	0-S	9	S	17	S	5	0-S
Blueboy	6	R-MR	10	S	52	S	60	S	45	S	12	S

Table 71. Reaction of International Winter Wheat Performance Nursery cultivars to Stem rust (Puccinia graminis tritici) in 1976. Concluded.

Cultivar	Fort Collins, Colorado, USA		Billings, Montana, USA		Lincoln, Nebraska, USA		Krasnodar, USSR	Odessa, USSR		Zagreb, Yugoslavia		Severity	
	sev. %	resp.	sev. %	resp.	sev. %	resp.	sev. %	sev. %	resp.	sev. %	resp.	Mean over 18 locations %	High score %
Number of replications	1		4		4		4	4		1			
Maris Templar	50	S	37	MR-MS	10	MS-S	1	1	R	30	MS	38	94
Maris Huntsman	60	S	50	M-S	28	MS-S	1	13	R-S	65	S	46	91
Martonvasar 2	40	S	57	MS-VS	88	S	1	30	O-S	70	S	28	88
Dunav-1	1	R	22	MR-M	16	MS-S	12	2	O-MR	5	MS	21	77
Flavio	40	S	17	MR	0		0	45	R-S	25	MS	27	92
GKF-2	10	S	30	MR-MS	71	S	1	7	O-S	15	MS	32	75
Biserka	1	R	3	O-MR	0		0	0		10	MR	17	75
TRS 237	1	R	7	O-MR	0		0	21	MR-MS	10	MR	14	70
Lely	90	S	47	M-S	28	S	2	0	O-R	45	MS	53	96
Sentinel	5	R	12	MR	0	O-R	0	0	O-R	5	R	8	35
Rashid	70	S	62	MS-VS	0		50	52	MS-S	50	MS	49	99
Kormoran	80	S	30	MR-MS	17	S	1	0	O-R	15	MS	34	94
Kitakomi-Komugi	50	S	50	M-S	71	O-S	1	21	MR-MS	45	S	43	89
Talent	40	S	12	O-MR	5	O-S	1	0		15	MR	14	80
Bezostaya 1	80	S	67	S-VS	94	S	1	0		35	S	30	94
Lerma Rojo 64	1	R	1		0		0	5	O-MS	0		8	55
Bordenave Puan Sag	10	R	1		0		0	0		20	MR	13	60
Galiafen	20	S	10	O-MR	0		0	--		5	R	6	35
GKF-8001	90	S	37	MR-S	76	S	1	5	O-MS	5	MR	26	90
Martonvasar 3	90	S	70	S-VS	95	S	1	6	R-MR	25	MS	31	95
Oasis	1	R	1		0		0	0	O-R	0		0	3
Probstdorfer Karat	80	S	57	MS-S	50	S	1	17	MR-MS	85	S	29	85
Sage	1	R	1		0		0	5	O-MR	0		2	25
Odesskaya 51	40	S	52	M-S	38	S	1	5	R-MR	40	MS	28	80
Pribcy	20	S	52	MS-S	50	S	45	7	O-MR	10	MR	33	79
F26-70	50	S	55	MS-S	88	S	1	12	O-MS	30	MS	42	88
WA 5829	90	S	47	M-VS	38	S	1	15	MR	40	S	47	92
NE 68719	80	S	27	MR-M	66	S	1	8	O-MR	30	S	36	89
Atlas 66	20	S	10	MR	0		0	0		20	MR	16	75
Blueboy	70	S	70	S-VS	76	S	1	8	O-MR	75	S	53	99

Table 72. Reaction of International Winter Wheat Performance Nursery cultivars to Leaf rust (Puccinia recondita) in 1976.

Cultivar	Herat, Afghanistan sev. %	Tolbukhin, Bulgaria sev. %	resp.	Szeged, Hungary sev. %	resp.	Sulaimaniya, Iraq[a] sev. 0-9	resp.	Rieti, Italy sev. %	Morioka, Japan sev. %	resp.	Suwon, Korea sev. %	resp.	Beirut, Lebanon sev. %	resp.	Warsaw, Poland sev. %	resp.	Fundulea, Romania sev. %	resp.
Number of replications	4	4		1		4		4	4		4		1		4		4	
Maris Templar	25	99	VS	0		0	0-VR	25	10	MR-M	20	MS	30	S	3	0-MR	15	S
Maris Huntsman	40	5	MR	1		1	VR-R	5	3	R-MR	11	MR	20	S	8	MR-MS	40	MS-S
Martonvasar 2	0	40	M	0		1	VR-R	0	4	R-MR	12	R-MR	5	MS	12	MR-S	52	VS
Dunav-1	0	20	MR	0		0	0-VR	15	4	R	7	MR	5	MS	7	0-MR	27	MS-S
Flavio	5	99	VS	1	MS	4	MR-S	80	38	S-VS	77	MS-S	50	S	22	MS-S	65	VS
GKF-2	46	99	VS	5	S	3	MR-S	37	12	MS-S	57	MS-S	30	S	11	0-S	87	VS
Biserka	0	1	R	5	MR	0	0-R	30	5	R	42	MR-MS	10	MS	1	0-VR	16	R
TRS 237	6	25	MR-M	1	MS	5	MS-VS	70	5	M-S	60	MR-MS	60	S	21	MS-S	55	VS
Lely	58	0		0		3	MR-MS	35	2	R-MR	50	MR-MS	60	S	0		45	S
Sentinel	0	5	R	1	MS	0		0	5	R-M	52	MS-S	10	MS	5	MR	15	R
Rashid	32	99	VS	20	MS	5	MS-VS	96	65	VS-VS	65	S	50	S	57	MR-VS	99	VS
Kormoran	25	5	R	1	MS	0	0-R	25	2	R	0	R	10	S	12	MR-MS	32	S
Kitakomi-Komugi	36	52	MS-VS	1	S	4	MR-VS	80	32	S	37	MR	20	S	11	0-S	85	VS
Talent	0	40	MS	0		2	R-MS	87	7	M-MS	11	R-MR	30	S	11	MR-MS	22	S
Bezostaya 1	0	40	VS	1	S	1	VR-MR	17	4	R-M	27	MR-MS	10	S	11	0-MS	57	S
Lerma Rojo 64	0	0		0		1	VR-R	0	16	MR-S	47	MR-MS	0		2	0-MR	42	S
Bordenave Puan Sag	0	65	VS	1	MS	0	0-VR	30	3	R	2	R	1	MS	0		0	
Galiafen	0	0		0		0	0-VR	0	16	R-MR	7	R-MR	10	MR	6	R-MR	45	MS
GKF-8001	0	40	MR	1	MS	1	VR-R	0	3	R	10	MR	5	MS	10	MR-MS	92	VS
Martonvasar 3	0	99	VS	10	S	2	MR	42	10	M-MS	7	MR	10	MR	35	0-S	87	VS
Oasis	0	0		10	MS	0	0-VR	0	5	R	2	R-MR	10	MR	0		0	
Probstdorfer Karat	0	25	M	5	MS	1	VR	0	12	MR-MS	25	MR-MS	30	MS	25	MS-S	65	S-VS
Sage	0	0		0		0	0-VR	0	6	R	8	R-MS	5	MS	0		0	
Odesskaya 51	20	99	VS	10	S	1	R-MR	15	5	M-S	7	MR-MS	1	MR	26	MR-S	87	VS
Priboy	28	25	MR	0		1	0-MR	25	5	R	0	R	5	R	16	MR-S	60	S
F26-70	42	94	M-VS	0		2	MR-MS	25	8	M-MS	0	R	10	S	25	MS-VS	77	VS
WA 5829	18	99	VS	1	MS	4	MR-S	40	12	MS-S	30	MR-MS	20	MS	3	0-MR	99	VS
NE 68719	36	99	VS	1	MR	2	R-MS	30	6	R-MR	25	MR-MS	10	S	2	0-MR	50	MS-S
Atlas 66	0	1	R	0		0		55	4	R	6	R-MR	0		8	MR-MS	7	R
Blueboy	46	10	M	1	S	1	R-MR	99	8	MS-S	13	R-MR	10	S	20	MR-S	35	S

[a] Not included in overall severity mean.

Table 72. Reaction of International Winter Wheat Performance Nursery cultivars to Leaf rust (Puccinia recondita) in 1976. Continued.

Cultivar	Bethlehem, South Africa, dryland sev. %	Bethlehem, South Africa, dryland resp.	Bethlehem, South Africa, irrigated sev. %	Bethlehem, South Africa, irrigated resp.	Eskisehir, Turkey sev. %	Eskisehir, Turkey resp.	Lincoln, Nebraska USA sev. %	Lincoln, Nebraska USA resp.	Stillwater, Oklahoma USA sev. %	Stillwater, Oklahoma USA resp.	Pullman, Washington USA sev. %
Number of replications	4		4		4		4		2		1
Maris Templar	2	0-R	1	MR-S	0	0-MR	27	MR-MS	2	S	0
Maris Huntsman	1	0-S	1	0-S	0	0-MS	42	MR	3	S	0
Martonvasar 2	0		0		0	0-MS	17	MS	3	S	5
Dunav-1	2	0-MS	0		0		42	MR-MS	3	S	20
Flavio	4	MR-S	11	0-S	4	0-S	0		0		0
GKF-2	0	0-MS	2	0-S	2	MS	65	S	10	S	0
Biserka	2	0-S	0	0-S	0		0		2	S	0
TRS 237	0	0-MS	1	0-S	2	0-S	85	S	6	S	5
Lely	0		5	MS-S	12	0-S	35	S	10	S	0
Sentinel	0		3	0-S	0	0-MS	57	S	7	S	0
Rashid	26	S-S	0		16	0-S	0		0		60
Kormoran	0		1	0-MS	0	0-S	27	MR	12	S	5
Kitakomi-Komugi	15	R-S	1	0-S	0	0-MS	27	0-S	15	S	0
Talent	2	MS-S	1	0-S	0	0-MS	24	0-S	15	S	10
Bezostaya 1	0		0		0		30	MS	3	S	0
Lerma Rojo 64	2	0-S	0		0	0-MS	0		0		10
Bordenave Puan Sag	0		1	0-S	0	0-MS	0		1	MR-S	0
Galiafen	0		0		0	0-MS	0		0		5
GKF-8001	0		0	0-MR	0	0-MS	42	MS-S	5	S	5
Martonvasar 3	0		0	0-S	0	0-MS	66	S	15	S	5
Oasis	0		0		0		3	0-MS	0	R	0
Probstdorfer Karat	0		0		0	0-MS	33	MS-S	0	R-MR	5
Sage	0		1	0-S	0	0-MS	37	MS-S	1	S	0
Odesskaya 51	0		0	0-MR	1	0-MS	45	MS-S	7	S	60
Priboy	7	0-R	0	0-S	0	0-MS	5	MS	1	S	10
F26-70	2	0-MS	2	0-S	0	0-MS	67	S	20	S	5
WA 5829	2	0-S	1	R-MR	0	0-MS	68	S	15	S	60
NE 68719	4	R-MR	4	0-S	0	0-MS	81	S	40	S	50
Atlas 66	0	0-S	2	MR-S	0		0		1	S	0
Blueboy	9	S	35	MS-S	0	0-MS	11	MR-S	1	S	0

Table 72. Reaction of International Winter Wheat Performance Nursery cultivars to Leaf rust (Puccinia recondita) in 1976. Concluded.

Cultivar	Krasnodar,[a/] USSR sev. 0-9	Krasnodar,[a/] USSR resp.	Odessa, USSR sev. %	Odessa, USSR resp.	Novi Sad, Yugoslavia sev. %	Zagreb, Yugoslavia sev. %	Zagreb, Yugoslavia resp.	Severity Mean over 18 locations %	Severity High score %
Number of replications	4		4		4	1			
Maris Templar	1	R	0	0-R	0	2	MR	15	99
Maris Huntsman	1	R-M	20	R-MS	12	30	MS	13	42
Martonvasar 2	1	M-MS	17	MR	5	40	MS	12	52
Dunav-1	0	VR-M	0		1	10	MR	9	42
Flavio	0		17	R-MR	15	20	MS	28	99
GKF-2	0	VR-MS	3	R-MR	10	5	MS	27	99
Biserka	0	VR-R	0	0-R	2	5	MR	7	42
TRS 237	1	R	0	0-R	6	2	MR	23	85
Lely	1	M-MS	0	0-VR	1	4	MS	18	60
Sentinel	0	VR-R	0	R	1	0		9	57
Rashid	3	S	45	MR-VS	20	15	MR	43	99
Kormoran	1	VR-R	12	0-MR	9	5	MS	10	32
Kitakomi-Komugi	1	VR-R	16	MR-MS	3	55	S	27	85
Talent	1	R-MS	0	0-R	3	2	MR	15	40
Bezostaya 1	1	R-M	0	0-R	1	20	S	12	57
Lerma Rojo 64	0		10	R-MS	2	0		7	47
Bordenave Puan Sag	0	VR	0		0	10	MS	6	65
Galiafen	0	0-VR	-		1	15	R	6	45
GKF-8001	1	VR-MS	9	0-MS	0	10	R	13	92
Martonvasar 3	1	M-MS	35	MR-MS	40	15	MR	26	99
Oasis	0	VR	0		0	5	R	2	10
Probstdorfer Karat	1	R-M	20	R-MR	17	65	S	18	65
Sage	0	VR	0	0-R	1	5	R	4	37
Odesskaya 51	1	M-S	13	R-MR	8	10	MR	23	99
Priboy	1	M-MS	17	R-MS	5	2	MR	12	28
F26-70	1	R-MS	22	0-MS	4	25	MR	24	94
WA 5829	1	VR-R	25	R-MR	15	35	S	30	99
NE 68719	1	R	0		1	60	S	28	99
Atlas 66	1	VR-R	0		0	5	MR	5	55
Blueboy	1	R-M	0		2	40	MS	19	99

[a/] Not included in overall severity mean.

Table 73. Reaction of International Winter Wheat Performance Nursery cultivars to Powdery mildew (Erysiphe graminis) in 1976.

Cultivar	Vienna, Austria sev. 0-9	Tolbukhin, Bulgaria sev. %	Tolbukhin, Bulgaria resp.	Male Ripnany Czechoslovakia resp.	Sedlec, Czechoslovakia sev. %	Sedlec, Czechoslovakia resp.	Bohnshausen, East Germany sev. 0-9	Cambridge, England sev. 1-9	Martonvasar, Hungary sev. %	Martonvasar, Hungary resp.	Szeged, Hungary sev. 0-9	Szeged, Hungary resp.
Number of replications	4	4		4	4		4	4	4		1	
Maris Templar	1	0		--	0	VR	8	1	2	0-VR	0	
Maris Huntsman	1	0		--	1	VR	8	1	0		0	
Martonvasar 2	5	10	VS	M	30	S	6	8	95	M-S	5	S
Dunav-1	4	1	VS	VR	2	VR	8	5	41	VR-MR	1	R
Flavio	5	1	VS	M	22	S	7	7	82	R-M	3	R
GKF-2	5	1	MS	R	30	S	7	7	90	MR-S	8	MS
Biserka	3	2	M-VS	VR	5	R-MR	8	5	45	VR-R	8	R
TRS 237	3	5	VS	VR	16	MR-MS	7	6	52	MR-M	5	MS
Lely	6	45	VS	VR	40	VS	6	9	90	MR-S	4	S
Sentinel	4	1	MR	VR	2	R	7	4	62	VR-MR	4	MS
Rashid	8	25	VS	M	57	VS	4	6	75	VS	6	MS
Kormoran	5	0		--	16	MS-S	8	4	87	VR-MR	2	R
Kitakomi-Komugi	5	30	VS	M	18	MS-S	3	9	92	VS	4	MS
Talent	3	5	M	VR	4	R	8	3	57	VR-MR	1	R
Bezostaya 1	5	20	VS	VR-R	25	S	5	8	90	S-VS	5	S
Lerma Rojo 64	8	10	MS	MS	45	VS	5	9	99	VS	4	MS
Bordenave Puan Sag	4	5	VS	--	1	VR-R	7	6	53	VR-M	4	MS
Galiafen	5	0		--	27	S	7	4	95	M-S	5	R
GKF-8001	5	10	VS	M-MS	32	S	7	6	92	M-VS	4	S
Martonvasar 3	6	10	VS	M	30	S	6	4	95	M-VS	6	MS
Oasis	2	0		0-M	1	R	7	2	7	VR	1	R
Probstdorfer Karat	2	5	MR	--	1	VR	6	4	25	MR-M	1	R
Sage	2	1	MS	--	3	R	7	5	32	VR-MR	3	R
Odesskaya 51	3	10	VS	0-VR	4	R	7	5	57	MR-M	4	R
Priboy	3	1	MS	VR-M	20	S	8	8	67	M-S	3	MS
F26-70	5	15	VS	R-M	5	R	7	8	95	M-S	4	MS
WA 5829	7	10	MS	R	30	S	5	8	99	S-VS	7	MS
NE 68719	8	30	VS	R-S	57	VS	2	9	99	VS	8	S
Atlas 66	3	1	MS	M-S	13	S	7	8	47	MR-MS	3	R
Blueboy	8	60	VS	M	47	VS	3	8	99	S-VS	7	S

Table 73. Reaction of International Winter Wheat Performance Nursery cultivars to Powder mildew (Erysiphe graminis) in 1976. Continued.

Cultivar	Morioka, Japan sev. 0-9	Wageningen, Netherlands sev. %	Warsaw, Poland sev. %	Fundulea, Romania sev. 0-9	Svalof, Sweden sev. %	Billings, Montana USA sev. %	resp.	Corvallis, Oregon USA sev. 0-9	Krasnodar, USSR sev. %
Number of replications	4	4	4	4	4	1		4	4
Maris Templar	0	0	8	1	0	1		0	0
Maris Huntsman	0	0	1	1	0	1		0	0
Martonvasar 2	2	18	50	4	7	20	MS	0	13
Dunav-1	0	7	42	3	4	5	R	0	2
Flavio	2	13	35	3	0	5	R	0	0
GKF-2	1	10	75	3	3	10	M	0	5
Biserka	1	13	37	2	5	5	R	0	0
TRS 237	0	6	22	1	4	15	M	0	3
Lely	2	20	62	5	11	30	MS	5	18
Sentinel	0	20	42	2	5	20	MS	0	1
Rashid	2	45	55	6	8	40	S	0	33
Kormoran	0	15	28	4	2	20	MS	0	1
Kitakomi-Komugi	3	23	52	6	9	15	M	5	3
Talent	0	0	30	0	0	5	R	0	0
Bezostaya 1	2	21	45	5	5	10	M	6	21
Lerma Rojo 64	2	40	37	3	0	15	M	4	0
Bordenave Puan Sag	0	26	17	2	0	50	VS	0	1
Galiafen	0	10	33	3	0	20	MS	0	0
GKF-8001	1	13	87	5	5	20	MS	8	16
Martonvasar 3	2	18	67	5	6	30	MS	4	11
Oasis	0	3	6	0	0	20	MS	0	0
Probstdorfer Karat	0	5	11	3	0	10	M	3	3
Sage	0	12	22	0	1	15	M	0	1
Odesskaya 51	1	5	30	3	1	15	M	0	3
Priboy	0	8	22	5	1	10	M	0	3
F26-70	2	16	67	5	10	20	MS	3	6
WA 5829	2	13	92	8	4	30	MS	6	16
NE 68719	4	55	96	7	26	50	VS	6	35
Atlas 66	1	11	21	2	2	10	M	0	3
Blueboy	4	26	70	6	22	40	S	0	24

Table 73. Reaction of International Winter Wheat Performance Nursery cultivars to Powder mildew (Erysiphe graminis) in 1976. Concluded.

Cultivar	Odessa, USSR sev. %	Odessa, USSR resp.	Weihenstephan, West Germany sev. 0-9	Zagreb, Yugoslavia sev. %	Zagreb, Yugoslavia resp.	Severity Cultivar mean over 10 sites %	Severity Cultivar mean over 8 sites 0-9	High score %
Number of replications	4		4	1				
Maris Templar	7	O-MR	1	0	R	2	2	8
Maris Huntsman	0		1	0	R	0	2	1
Martonvasar 2	37	MS-S	3	25	MR	31	4	95
Dunav-1	22	MR-MS	1	30	MR	16	3	42
Flavio	60	S-VS	2	30	MR	25	4	82
GKF-2	57	S-VS	2	35	MS	32	4	90
Biserka	0	O-R	1	35	MS	15	4	45
TRS 237	32	MR-MS	2	25	MR	18	3	52
Lely	0	O-R	2	50	MS	37	5	90
Sentinel	15	O-VS	1	60	S	23	3	62
Rashid	63	S-VS	4	65	S	47	5	75
Kormoran	0		1	45	MS	21	3	87
Kitakomi-Komugi	42	MS-S	3	65	S	35	5	92
Talent	0	O-R	1	0	R	10	2	57
Bezostaya 1	0	O-R	2	55	MS	29	5	90
Lerma Rojo 64	57	MS-S	6	75	S	38	5	99
Bordenave Puan Sag	0	O-R	1	60	S	21	3	60
Galiafen	--		2	30	MR	22	3	95
GKF-8001	30	R-MS	3	25	MR	33	5	92
Martonvasar 3	31	MR-MS	3	55	MS	35	5	95
Oasis	12	O-MS	1	5	R	5	2	20
Probstdorfer Karat	30	O-MS	2	5	R	10	3	30
Sage	0		1	45	MS	13	2	45
Odesskaya 51	32	MR-MS	2	40	MS	20	3	57
Priboy	20	O-MS	1	35	MR	19	4	67
F26-70	2	O-MS	2	30	MR	27	5	95
WA 5829	51	R-VS	3	70	S	42	6	99
NE 68719	68	MS-VS	7	75	S	59	6	99
Atlas 66	25	O-MS	2	20	MR	15	3	47
Blueboy	60	S-VS	5	45	MS	49	5	99

Table 74. Reaction of International Winter Wheat Performance Nursery cultivars to Septoria (*Septoria tritici*, *Septoria nodorum*) in 1976.

Cultivar	Temuco, Chile[a] %	Bohnshausen, East Germany 0-9	Szeged, Hungary 0-9	Suwon, Korea 0-9	Warsaw, Poland 0-9	Bethlehem, South Africa dryland 0-9	Bethlehem, South Africa irr. 0-9	Corvallis, Oregon USA 0-9	Novi Sad, Yugoslavia 0-9	Zagreb, Yugoslavia 0-9	Severity: Cultivar mean over 9 sites, 0-9	Severity: High score 0-9
Number of replications	1	4	1	4	4	4	4	4	4	1		
Maris Templar	10	9	1	5	3	0	0	4	0	2	3	9
Maris Huntsman	10	9	3	4	2	0	0	4	0	2	3	9
Martonvasar 2	30	9	5	5	7	0	0	6	1	4	4	9
Dunav-1	30	9	4	5	8	0	0	6	0	3	4	9
Flavio	20	8	5	4	4	0	0	5	1	3	3	8
GKF-2	20	9	2	6	8	0	0	6	1	6	4	9
Biserka	30	8	2	4	7	0	0	6	0	3	3	8
TRS 237	30	8	4	3	3	0	0	5	0	2	3	8
Lely	10	9	2	7	5	0	0	5	0	5	4	9
Sentinel	20	9	2	6	3	2	1	4	1	4	4	9
Rashid	20	8	2	5	4	2	0	8	1	5	4	8
Kormoran	5	9	2	6	4	0	0	3	0	4	3	9
Kitakomi-Komugi	30	8	4	3	6	0	0	8	0	3	4	8
Talent	30	9	3	4	6	0	0	4	0	2	3	9
Bezostaya 1	20	9	5	4	7	0	0	5	1	3	4	9
Lerma Rojo 64	60	8	4	6	1	2	3	8	1	2	4	8
Bordenave Puan Sag	20	9	4	6	3	0	0	6	0	3	3	9
Galiafen	30	8	2	5	4	3	4	6	0	3	4	8
GKF-8001	30	8	5	5	9	0	0	7	1	4	4	9
Martonvasar 3	30	8	5	6	8	0	0	5	1	5	4	8
Oasis	20	9	3	6	3	0	0	5	0	1	3	9
Probstdorfer Karat	5	9	4	5	2	0	0	4	1	3	3	9
Sage	30	9	3	4	3	3	1	4	0	4	3	9
Odesskaya 51	30	9	3	7	6	0	0	2	1	4	4	9
Priboy	10	9	4	3	4	0	0	3	0	4	3	9
F26-70	10	7	5	3	8	0	0	5	1	5	4	8
WA 5829	30	9	4	7	9	0	0	7	0	5	5	9
NE 68719	30	9	5	7	8	0	0	4	1	6	4	9
Atlas 66	20	8	2	2	2	0	0	4	0	2	2	8
Blueboy	30	9	5	4	5	0	0	4	1	2	3	9

[a] Not included in overall severity means.

Table 75. Quality data for cultivars grown in the Eighth International Winter Wheat Performance Nursery at Cambridge, England in 1976.[1/]

Cultivar	Milling			Mini-loaf baking test			
					Loaf volume		
	Flour %	Fine offal %	Bran %	Protein %	Before adjust. cc	After adjust. cc	Score[2/] 1-5
Flavio	60.1	9.1	30.8	13.0	72.3	109.5	3
Sentinel	66.05	5.7	27.8	13.7	79.7	120.7	4
Odesskaya 51	66.3	5.2	28.5	11.1	78.8	119.3	3
Maris Templar	64.6	8.0	27.4	11.0	73.8	111.8	3
Sage[5/]	66.6	5.0	28.4	12.9	64.6	97.8	4
Rashid	55.4	8.6	36.0	12.2	81.7	123.7	5
WA 5829	59.2	8.8	32.0	9.8	74.2	112.4	2
GKF-2	66.7	4.6	28.7	12.1	84.3	127.3	5
Probstdorfer Karat	68.1	5.4	26.5	12.7	68.7	104.0	3[3/]
Galiafen	60.7	10.0	29.3	--	77.0	116.6	3[4/]
Bordenave Puan Sag	64.7	6.6	28.4	13.1	80.5	121.9	5
TRS 237	68.6	4.7	28.7	13.4	89.1	135.0	5
Lerma Rojo 64	57.7	7.8	34.5	10.6	87.6	132.7	5
NE 68719	70.3	4.5	25.2	12.0	82.3	124.6	4
Oasis	57.1	9.5	33.4	12.9	82.4	124.8	5
Martonvasar 3	69.3	5.0	25.7	9.8	80.5	121.9	4
F26-70	67.6	5.0	27.4	13.2	81.6	123.6	4
GKF-8001	70.5	4.7	24.8	10.7	66.7	101.0	2
Priboy	67.4	5.2	27.4	11.2	73.0	110.6	3

1/ Data provided by Dr. F. G. H. Lupton.

2/ 1 = very poor, 5 = very good.

3/ Dry.

4/ Tensile (hard).

5/ Very even texture, white flour. Even though the volume is low this maybe due to the fact it isn't mechanically developed enough.

Table 76. Quality data for cultivars grown in the Eighth International Winter Wheat Performance Nursery in 1976 at Svalof, Sweden.[4/]

Cultivars	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	Bread baking: Weight[1/] g	Bread baking: Volume[1/] ml	Bread baking: Form[2/] 1-7	Bread baking: Porosity[3/] 1-8
Maris Templar	13.2	11.6	29.9	279	5.31	58	380	160	144	704	5	5
Maris Huntsman	12.7	11.6	33.2	224	6.73	69	445	165	145	635	4	6
Martonvasar 2	14.8	14.1	34.5	348	6.56	68	433	165	147	743	5	5
Dunav-1	15.5	14.0	34.0	416	6.21	59	365	164	146	676	4	5
Flavio	--	--	--	--	--	--	--	--	--	--	-	-
GKF-2	15.5	14.1	37.8	413	6.40	65	425	163	145	864	5	4
Biserka	15.9	13.3	35.3	414	5.60	48	--	162	138	713	4	5
TRS 237	16.2	15.1	40.3	292	6.44	65	455	165	144	1018	6	4
Lely	12.8	10.9	29.1	323	5.84	56	371	158	144	616	4	4
Sentinel	20.0	18.8	44.0	399	6.42	64	417	166	141	847	6	5
Rashid	--	--	--	--	--	--	--	--	--	--	-	-
Kormoran	13.6	11.4	24.1	316	6.88	67	450	162	146	550	3	7
Kitakomi-Komugi	12.3	12.0	31.0	339	5.88	54	--	161	140	692	4	7
Talent	13.8	11.6	30.1	378	5.92	57	370	160	139	640	4	6
Bezostaya 1	14.3	13.1	31.9	340	6.76	68	444	163	143	727	5	5
Lerma Rojo 64	--	--	--	--	--	--	--	--	--	--	-	-
Bordenave Puan Sag	19.5	19.5	46.0	379	6.47	67	--	167	148	1119	6	5
Galiafen	--	--	--	--	--	--	--	--	--	--	-	-
GKF-8001	13.2	12.3	27.8	416	7.39	70	453	165	147	743	4	6
Martonvasar 3	15.3	14.8	36.4	447	6.67	69	443	165	147	908	6	6
Oasis	19.0	18.0	46.9	295	5.66	54	--	165	144	941	6	5
Probstdorfer Karat	14.0	13.1	30.7	316	6.81	66	435	164	144	705	5	5
Sage	19.9	18.6	48.1	268	6.49	66	--	165	144	734	5	4
Odesskaya 51	14.9	14.2	32.1	374	6.24	65	410	164	149	902	6	5
Priboy	13.0	12.0	28.0	319	6.45	68	428	163	147	929	6	5
F26-70	14.5	13.5	32.1	181	6.70	67	434	167	150	711	4	5
WA 5829	12.7	11.1	26.2	368	6.07	53	--	161	138	837	6	6
NE 68719	15.2	13.9	34.0	329	6.32	66	425	160	139	768	5	5
Atlas 66	17.6	15.9	47.3	383	6.11	55	--	162	141	697	3	4
Blueboy	12.2	10.3	25.3	398	5.49	51	370	161	137	781	5	5

1/ Calculated on 100 g flour.
2/ Form: scale 1-7, 7 is the best value.
3/ Porosity according to Dallman: scale 1-8, 8 the smallest pores.
4/ Data provided by Dr. Bo Kristiansson.

Table 77. Quality data [illegible] cultivars grown [illegible] ghtn [illegible] [illegible] nance Nursery at Krasnodar, USSR in 1970.[a/]

Cultivars[b/]	Sedementation value[c/] ml	Protein in dry matter of grain[d/] %	Lysine in dry matter of grain[d/] %	Lysine % of protein[de/]
Maris Templar	44	13.5	.38	2.86
Maris Huntsman	40	13.4	.39	2.92
Martonvasar 2	54	14.1	.40	2.80
Dunav-1	48	14.1	.40	2.81
GKF-2	50	13.2	.38	2.91
Biserka	52	14.5	.39	2.83
TRS 237	54	14.9	.41	2.74
Lely	44	14.1	.40	2.84
Sentinel	64	15.7	.43	2.75
Rashid	44	14.5	.42	2.92
Kormoran	59	13.4	.39	2.88
Kitakomi-Komugi	52	12.8	.38	2.97
Talent	46	13.5	.39	2.93
Bezostaya 1	54	13.6	.38	2.80
Lerma Rojo 64	60	15.4	.44	2.82
Bordenave Puan Sag	56	15.0	.41	2.75
Galiafen	64	14.6	.41	2.81
GKF-8001	44	12.1	.36	2.99
Martonvasar 3	58	14.2	.39	2.75
Oasis	58	14.3	.40	2.79
Probstdorfer Karat	62	13.4	.38	2.64
Sage	66	14.7	.41	2.78
Odesskaya 51	70	13.7	.38	2.78
Priboy	56	12.9	.37	2.90
F26-70	44	13.5	.39	2.89
WA 5829	40	11.6	.36	3.13
NE 68719	50	12.9	.37	2.86
Atlas 66	62	17.5	.47	2.70
Blueboy	42	12.4	.37	2.99

[a/] Quality data provided by Dr. Y. M. Puchkov, Lukyanenko Research Institute of Agriculture, Krasnodar, USSR.

[b/] No data were provided for the variety Flavio.

[c/] Data provided by Dr. N. D. Tarasenko.

[d/] Data provided by Dr. V. G. Ryadchikov.

[e/] Based on a composite of two samples.

Note: Only one sedimentation value was provided for each cultivar. The values reported for the other three traits are averages of four replications for each cultivar.

Table 78. Agronomic and disease data for cultivars grown in the Eighth International Winter Wheat Performance Nursery at Charlottetown, Prince Edward Island, Canada in 1976.[1/]

Cultivars [2/]	Yield q/ha	Maturity	Plant height cm	Lodging resistance 1-9	Test weight kg/hl	1000-kernel weight g	Powdery mildew 0-4	Septoria 0-4	Winter survival %
Odesskaya 51	539	Aug. 11	99	1.0	77.2	39.86	1.5	--	69
Priboy	463	" 11	103	1.5	76.9	43.76	1.5	2.5	68
Jo 03067	419	" 12	116	4.5	69.7	29.52	2.5	1.0	61
Oasis	378	" 11	100	1.5	77.0	41.12	TR	--	54
Bezostaya 1	348	" 12	96	2.5	75.6	41.18	3.0	1.0	56
NE 68719	256	" 10	76	2.5	69.9	30.04	3.5	--	43
Lennox	238	" 9	117	2.5	71.2	41.96	1.0	--	25
Martonvasar 3	237	" 12	94	1.0	73.6	42.02	3.5	1.5	28
GKF-8001	181	" 11	69	1.0	69.5	31.38	3.5	--	49
Sentinel	159	" 11	93	2.0	73.6	30.34	3.0	--	28
Martonvasar 2	157	" 11	83	1.0	68.5	33.48	3.5	--	35

[1/] Data provided by Dr. Hans Nass.

[2/] Cultivars Jo 03067 and Lennox were included as local check cultivars.

Many cultivars were not harvested due to severe winterkill.

Fertilizer applied: 448 kg/ha 5-20-20 in fall
269 kg/ha NH_4NO_3 in spring.

Seeded: September 11, 1975.

Table 79. Winter survival and growth habit responses of selected cultivars grown in an observation planting of the Eighth International Winter Wheat Performance Nursery at Pratt, Kansas in 1976.[1/]

Cultivar	Winter survival[2/] 1-9	Growth habit[3/]
Bezostaya 1	5	P
Talent	6	P
Kitakomi-Komugi	6	P
Kormoran	7	P
Lely	7	P
TRS 237	4	P
Biserka	8	P
GKF-2	7	E
Dunav-1	6	P
Martonvasar 2	9	P
Maris Templar	7	I
Odesskaya 51	9	P
Priboy	7	P
Probstdorfer Karat	8	P
F26-70	8	P
Oasis	7	P
Sage	8	P

[1/] Data provided by Dr. Allen Diehl of Northrup King, Inc.

[2/] 1 = poor, 9 = best.

[3/] P = prostrate, I = intermediate, E = erect type of spring growth.

Table 80. Agronomic and disease data for the 30 cultivars in an observation planting of the Eighth International Winter Wheat Performance Nursery grown at Elora, Ontario in 1976.[1/]

Cultivars	Yield q/ha	Yield rank	Date of ear emergence days from Jan. 1	Plant height cm	Winter survival %	Leaf rust[2/] 1-6	Mildew[3/] 1-9
Maris Templar	25.9	20	--	85	12	1	1.0
Maris Huntsman	32.8	16	--	90	50	4	1.0
Martonvasar 2	44.0	7	160	100	54	2	4.5
Dunav-1	46.3	5	158	75	72	3	2.0
Flavio	1.3	27	--	--	1	-	--
GKF-2	31.7	17	158	80	50	6	4.0
Biserka	36.9	12	156	80	27	3	5.5
TRS 237	37.1	11	156	105	82	2	5.5
Lely	30.8	19	--	85	39	1	5.5
Sentinel	44.2	6	156	100	72	-	8.0
Rashid	1.5	26	--	--	1	-	--
Kormoran	33.1	15	--	85	50	3	5.5
Kitakomi-Komugi	33.5	14	156	85	72	3	7.0
Talent	15.7	23	158	75	18	5	2.0
Bezostaya 1	53.0	3	162	90	86	3	7.0
Bordenave Puan Sag	2.5	24	--	--	1	-	--
Galiafen	0.6	28	--	--	1	-	--
GKF-8001	41.4	8	162	70	59	1	5.5
Martonvasar 3	37.8	10	158	100	77	6	7.0
Probstdorfer Karat	36.0	13	162	105	41	5	4.0
Sage	41.1	9	158	105	82	-	7.0
Odesskaya 51	51.0	4	158	105	86	6	4.0
Priboy	64.0	1	160	110	88	1	2.0
F26-70	30.8	18	155	95	41	3	7.0
WA 5829	24.2	22	164	90	50	4	7.0
NE 68719	25.5	21	158	90	16	3	8.0
Atlas 66	2.2	25	--	--	1	-	--
Blueboy	56.8	2	160	105	81	6	8.0
Oasis	44.2	6	158	105	72	1	1.5
Lerma Rojo 64	0.0	--	--	--	1	-	--

[1/] Data provided by Drs. Tony Hunt and Pankaj Mehta, University of Guelph, Guelph, Ontario.
Location and description of test site: Latitude 43° 39'N, Longitude 80° 25'W, Elevation 380 m, soil type-silty clay.

[2/] 1=5, 2=10, 3=25, 4=40, 5=65, and 6=100%, respectively.

[3/] 1= no infection, 3= resistant, 5= moderately susceptible, 7= susceptible, 9= highly susceptible.

Table 81. Reaction of cultivars grown in the Eighth International Winter Wheat Performance Nursery in 1976 to soil acidity at Passo Fundo, Brazil[1/].

Cultivar	Score[2/] 1-5
Atlas 66	1
Bezostaya 1	3
Biserka	4
Bordenave Puan Sag	4
Blueboy	3
Dunav-1	3
F26-70	4
Flavio	3
Galiafen	5
GKF-2	5
GKF-8001	4
Kitakomi-Komugi	1
Kormoran	4
Lely	4
Lerma Rojo 64	4
Maris Huntsman	4
Maris Templar	5
Martonvasar 2	4
Martonvasar 3	5
NE 68719	5
Odesskaya 51	5
Oasis	5
Priboy	4
Rashid	5
Sage	5
Sentinel	5
Talent	4
TRS 237	2
WA 5829	5
Probstdorfer Karat	4

1/ Data provided by Dr. Ottoni de Sousa Rosa. The cultivars were tested in a soil with a pH ≃ 5.0 and with ≃ 3.0 m.e. Al/100 g of soil.
2/ 1= resistant, 5= susceptible.

Table 82. Reaction of Seventh International Winter Wheat Performance Nursery cultivars to stripe rust in 1975 and reaction of Eighth International Winter Wheat Performance Nursery cultivars to powdery mildew in 1976 in the Netherlands.[1/]

Cultivar	1975 Stripe rust[2/] sev. %	resp.	Cultivar	1976 Powdery mildew %
Favorit	50	HM	Maris Templar	0
Jubilar	0		Maris Huntsman	0
Dwarf Bezostaya	20	M	Martonvasar 2	2
Manella	0		Dunav-1	2
Likafen	1	LM	Flavio	2
Blueboy II	1-10	LM-VR	GKF-2	2
Bezostaya 1	5	HM	Biserka	2
Burgas 2	25	HM	TRS 237	5
Demar 4	5	MS	Lely	20
Aurora	25	MS	Sentinel	5
Sanja	40	HM	Rashid	30
Bolal	90	VS	Kormoran	15
Kavkaz	30	VS	Kitakomi-Komugi	2
Atlas 66	25	VS	Talent	0
Blueboy	25	VS	Bezostaya 1	2
Lerma Rojo 64	10	M	Lerma Rojo 64	20
Talent	0		Bordenave Puan Sag	25
Kitakomi-Komugi	10	MS	Galiafen	15
Kormoran	10	VS	GKF-8001	2
Rashid	80	VS	Martonvasar 3	2
Sentinel	30	HM	Oasis	0
Lely	0		Probstdorfer Karat	0
TRS 237	70	VS	Sage	1
Dunav-1	50	MS	Odesskaya 51	1
GKF-2	20	HM	Priboy	0
Sieve	20	HM	F26-70	1
Biserka	0		WA 5829	5
Martonvasar 2	25	MS	NE 68719	40
Maris Huntsman	0		Atlas 66	0
Maris Templar	1	VS	Blueboy	20

1/ Data provided by Drs. J. Mesdag and I. F. Benthem, Wageningen, Netherlands.

2/ The nursery was artificially inoculated with seven of the most common races of stripe rust.

3/ Observations made June 30, 1976 from spontaneous infection.

Table 83. Response of cultivars in the Eighth International Winter Wheat Performance Nursery grown in 1976 to four different biotypes of Hessian Fly (Phytophaga destructor).[1/]

Cultivar	Biotype			
	GP	B	C	D[2/]
Maris Templar	8R-1S	9R-7S	S	S
Maris Huntsman	11R-2S	5R-10S	S	S
Martonvasar 2	8R-4S	4R-8S	S	S
Dunav-1	5R-3S	3R-12S	8R-5S	S
Flavio	8R-3S	3R-12S	S	S
GKF-2	S	S	S	S
Biserka	3R-8S	S	S	S
TRS 237	S	S	S	7R-8S
Lely	S	S	S	S
Sentinel	4R-12S	S	S	S
Rashid	R	12R-3S	S	S
Kormoran	5R-9S	5R-8S	S	S
Kitakomi-Komugi	10R-9S	S	S	S
Talent	9R-4S	4R-16S	S	S
Bezostaya 1	S	S	S	S
Lerma Rojo 64	S	S	S	S
Bordenave Puan Sag	S	S	S	S
Galiafen	S	6R-11S	S	S
GKF-8001	S	S	S	S
Martonvasar 3	S	5R-15S	S	4R-17S
Oasis	R	7R-8S	R	R
Probstdorfer Karat	5R-6S	S	S	10R-11S
Sage	4R-11S	3R-19S	S	7R-12S
Odesskaya 51	4R-6S	S	S	9R-9S
Priboy	5R-7S	S	S	11R-6S
F26-70	9R-3S	S	S	12R-3S
WA 5829	9R-4S	S	S	13R-9S
NE 68719	R	3R-15S	S	15R-2S
Atlas 66	9R-2S	3R-8S	S	11R-4S
Blueboy	7R-8S	S	S	8R-10S

1/ Data provided by Dr. Robert L. Gallun; SEA, USDA; Purdue University, W. Lafayette, Indiana.

2/ Results are inconclusive.

Table 84. Two-year means and rankings of grain yield (q/ha) expressed on a regional basis for 17 cultivars grown in the International Winter Wheat Performance Nursery, 1975 and 1976.

Cultivars	Northern Europe		Southern Europe		Near East		Far East		North America		Southern Hemisphere		Cultivar mean over 39 sites
	q/ha	rank	q/ha	rank	q/ha	rank	q/ha	rank	q/ha	rank	q/ha	rank	q/ha
Number of sites	10		8		8		2		8		3		
Talent	56.4	4	51.5	1	39.1	8	39.9	5	44.7	1	31.0	10	46.6
Blueboy	51.4	9	45.5	8	44.5	1	46.3	2	41.7	3	39.9	1	45.6
Bezostaya 1	52.7	6	45.8	7	41.4	3	43.2	4	42.2	2	35.0	4	45.0
Maris Huntsman	61.3	1	46.3	6	38.2	10	33.8	11	35.9	12	35.4	3	44.8
Martonvasar 2	52.0	7	46.6	5	41.9	2	44.7	3	41.2	5	32.6	8	44.7
GKF-2	51.9	8	47.3	3	41.3	4	38.7	8	41.6	4	33.0	7	44.5
Kormoran	57.5	3	43.6	10	37.0	12	33.0	13	36.1	11	37.2	2	43.2
Lely	55.8	5	39.4	14	38.3	9	33.2	12	40.6	6	33.6	5	42.8
Maris Templar	58.1	2	41.0	12	37.5	11	30.2	15	37.1	9	33.6	6	42.8
Biserka	49.1	10	50.8	2	37.0	13	39.1	7	38.6	8	27.6	12	42.7
Kitakomi-Komugi	45.7	12	47.1	4	41.0	5	50.2	1	33.1	13	22.8	13	40.9
Dunav-1	46.5	11	45.4	9	35.2	14	39.4	6	38.9	7	31.4	9	40.9
Sentinel	44.3	13	43.1	11	39.8	6	38.6	9	36.9	10	30.7	11	40.3
TRS 237	41.8	14	40.3	13	34.4	15	31.8	14	31.8	14	22.8	14	35.9
Atlas 66	41.6	15	35.3	15	31.0	17	34.3	10	28.3	15	21.8	16	33.5
Lerma Rojo 64	33.5	16	32.2	16	39.1	7	14.9	17	15.6	17	22.4	15	28.9
Rashid	30.3	17	27.0	17	33.6	16	16.7	16	16.5	16	17.6	17	25.8
Mean	48.8		42.8		38.3		35.8		35.3		29.9		40.5
L.S.D. of cultivar means (.05)	7.2		11.2		4.0		18.6		9.1		14.8		3.2
Coefficient of variation (%)	10.1		12.5		17.5		16.7		15.4		11.6		13.6

Table 85. Two-year means and rankings of grain yield (q/ha) for 17 cultivars grown in the International Winter Wheat Performance Nursery, 1975 and 1976.

Cultivars	Kabul, Afghanistan		Bordenave, Argentina		Vienna, Austria		Tolbukhin, Bulgaria		Temuco, Chile		Male Ripnany, Czechoslovakia		Sedlec, Czechoslovakia	
	q/ha	rank	q/ha	rank	q/ha	rank	q/ha	rank	q/ha	rank	q/ha	rank	q/ha	rank
Talent	50.3	8	24.1	9	57.6	1	45.6	7	37.2	11	96.6	1	59.2	2
Blueboy	56.8	2	33.7	1	42.5	12	54.4	2	58.4	3	90.6	7	56.3	5
Bezostaya 1	53.4	4	24.8	6	51.8	6	51.7	5	51.1	6	89.9	10	55.4	6
Maris Huntsman	45.1	13	16.0	16	57.3	2	45.0	8	62.1	1	95.5	2	59.7	1
Martonvasar 2	59.0	1	25.5	4	52.9	4	50.0	6	46.8	8	91.7	5	58.4	4
GKF-2	56.6	3	28.5	2	49.1	7	54.0	3	42.0	9	94.0	3	58.6	3
Kormoran	50.7	6	22.0	12	52.2	5	40.8	11	59.4	2	90.6	6	49.8	12
Lely	44.2	14	14.7	17	41.4	14	37.2	13	56.2	5	89.3	11	54.0	7
Maris Templar	42.2	16	16.3	15	48.0	8	29.2	14	56.4	4	93.1	4	51.8	9
Biserka	46.0	11	27.9	3	55.2	3	39.6	12	35.5	12	90.3	9	50.3	10
Kitakomi-Komugi	49.3	9	22.3	11	43.8	11	52.5	4	26.0	13	90.4	8	52.4	8
Dunav-1	50.5	7	24.6	7	46.9	10	41.7	9	47.0	7	80.2	13	44.6	14
Sentinel	52.3	5	25.4	5	39.7	15	54.6	1	37.4	10	85.2	12	49.8	11
TRS 237	43.0	15	24.5	8	47.7	9	40.9	10	21.9	16	62.1	16	47.0	13
Atlas 66	40.0	17	21.1	13	39.0	16	28.5	16	23.8	15	70.2	14	40.8	15
Lerma Rojo 64	45.5	12	23.0	10	42.2	13	26.1	17	24.7	14	64.8	15	32.6	17
Rashid	48.2	10	20.7	14	34.7	17	28.7	15	16.4	17	55.1	17	34.3	16
Mean	49.0		23.2		47.2		42.4		41.3		84.1		50.3	
L.S.D. of cultivar means (.05)	15.2		6.8		9.9		36.1		17.3		21.4		18.0	
Coefficient of variation (%)	19.2		12.9		13.3		19.5		11.4		4.4		8.2	

Table 85. Two-year means and rankings of grain yield (q/ha) for 17 cultivars grown in the International Winter Wheat Performance Nursery, 1975 and 1976. Continued.

Cultivars	Cambridge,[a] England		Jokioinen, Finland		Martonvasar, Hungary		Hamadan, Iran		Karaj, Iran		Sulaimaniya, Iraq		Milano, Italy	
	q/ha	rank	q/ha	rank	q/ha	rank	q/ha	rank	q/ha	rank	q/ha	rank	q/ha	rank
Talent	51.3	1	0.8	14	63.8	3	36.0	12	66.1	5	30.9	8	62.6	2
Blueboy	34.6	9	12.7	7	56.5	7	49.8	1	64.4	8	34.5	2	56.8	5
Bezostaya 1	37.3	4	17.3	3	53.8	10	42.2	7	66.5	4	32.6	5	54.1	8
Maris Huntsman	47.8	2	17.2	4	64.6	2	46.2	4	60.9	12	22.2	14	56.4	6
Martonvasar 2	34.7	8	13.6	5	51.8	12	42.9	6	65.5	6	30.4	9	60.1	4
GKF-2	37.1	6	9.9	10	53.1	11	46.3	3	65.2	7	34.3	3	52.1	11
Kormoran	34.0	10	31.3	1	58.9	5	40.8	9	54.6	15	18.1	16	49.3	12
Lely	37.2	5	21.6	2	42.9	15	40.5	10	59.7	13	16.4	17	43.8	16
Maris Templar	46.5	3	10.4	8	55.5	8	40.8	8	58.1	14	19.7	15	55.1	7
Biserka	30.2	14	0.0	15	66.2	1	35.4	13	68.6	3	32.9	4	60.4	3
Kitakomi-Komugi	33.1	11	7.1	12	43.5	14	46.4	2	69.2	2	30.0	10	62.9	1
Dunav-1	32.5	13	13.4	6	54.9	9	35.3	14	61.7	11	31.5	7	52.3	10
Sentinel	36.5	7	7.6	11	59.0	4	46.0	5	63.7	9	31.8	6	48.5	13
TRS 237	28.8	16	10.4	8	58.6	6	37.5	11	63.6	10	28.5	12	47.4	15
Atlas 66	32.8	12	1.9	13	47.2	13	34.6	16	51.4	17	26.2	13	48.0	14
Lerma Rojo 64	24.7	17	0.0	15	32.5	16	35.2	15	69.4	1	35.9	1	52.8	9
Rashid	29.9	15	0.0	15	30.3	17	29.0	17	52.9	16	29.2	11	39.6	17
Mean	35.8		10.3		52.5		40.3		62.4		28.5		53.1	
L.S.D. of cultivar means (.05)	11.2		24.1		13.5		16.7		9.4		14.8		12.3	
Coefficient of variation (%)	14.7		82.1		11.0		23.7		12.1		20.4		11.6	

[a] Two replications. Not included in the overall means.

Table 85. Two-year means and rankings of grain yield (q/ha) for 17 cultivars grown in the International Winter Wheat Performance Nursery, 1975 and 1976. Continued.

Cultivars	Morioka, Japan		Suwon, Korea		Kathmandu, Nepal		Wageningen, Netherlands		Warsaw, Poland		Fundulea, Romania		Bethlehem, South Africa	
	q/ha	rank	q/ha	rank	q/ha	rank	q/ha	rank	q/ha	rank	q/ha	rank	q/ha	rank
Talent	27.2	12	52.6	4	38.9	8	58.7	4	54.8	5	52.2	3	31.6	1
Blueboy	41.7	1	50.9	5	43.0	4	49.5	9	47.8	10	42.0	12	27.5	9
Bezostaya 1	32.4	6	54.1	3	39.6	6	52.8	5	53.0	7	46.3	6	29.1	5
Maris Huntsman	33.8	5	33.8	13	37.7	9	58.7	3	61.0	3	36.3	16	28.2	7
Martonvasar 2	29.7	10	59.8	2	41.9	5	49.6	8	49.3	8	45.1	9	25.4	10
GKF-2	31.8	7	45.6	10	34.1	15	50.9	7	47.3	11	45.7	8	28.6	6
Kormoran	31.7	8	34.4	12	39.2	7	51.8	6	65.4	1	42.9	11	30.2	2
Lely	35.2	3	31.3	15	36.5	11	58.9	2	54.8	4	41.3	14	30.0	3
Maris Templar	27.2	13	33.2	14	35.9	12	59.3	1	65.0	2	38.5	15	28.0	8
Biserka	30.9	9	47.3	8	35.8	13	48.0	11	54.4	6	54.8	1	19.6	15
Kitakomi-Komugi	40.4	2	60.0	1	43.0	3	44.5	12	38.4	15	53.3	2	20.3	14
Dunav-1	34.9	4	43.9	11	27.5	17	49.0	10	46.4	12	45.8	7	22.7	11
Sentinel	29.1	11	48.1	6	37.7	9	40.6	13	48.1	9	47.2	5	29.5	4
TRS 237	16.4	15	47.3	9	34.6	14	38.5	16	41.6	14	43.5	10	22.0	12
Atlas 66	20.9	14	47.7	7	33.2	16	40.4	14	44.1	13	41.6	13	20.4	13
Lerma Rojo 64	4.5	17	25.3	17	52.7	1	38.9	15	13.4	17	51.0	4	19.6	15
Rashid	7.3	16	26.1	16	45.5	2	28.3	17	14.2	16	29.5	17	15.7	17
Mean	27.9		43.6		38.6		48.1		47.0		44.5		25.2	
L.S.D. of cultivar means (.05)	21.5		22.1		9.8		11.5		15.1		13.8		9.0	
Coefficient of variation (%)	24.4		11.5		16.1		8.9		13.0		6.0		9.0	

Table 85. Two-year means and rankings of grain yield (q/ha) for 17 cultivars grown in the International Winter Wheat Performance Nursery, 1975 and 1976. Continued.

Cultivars	Svalof, Sweden		Zurich, Switzerland		Ankara, Turkey		Erzurum, Turkey		Eskisehir, Turkey		Davis, California USA		Fort Collins, Colorado USA	
	q/ha	rank	q/ha	rank	q/ha	rank	q/ha	rank	q/ha	rank	q/ha	rank	q/ha	rank
Talent	59.7	5	57.9	3	22.4	10	32.1	8	36.4	11	63.1	4	68.0	2
Blueboy	43.7	8	52.7	7	26.7	2	36.1	3	44.8	1	65.8	1	65.1	7
Bezostaya 1	45.3	6	50.2	10	22.6	8	33.1	4	41.3	3	53.8	7	65.2	6
Maris Huntsman	80.4	1	59.4	1	25.6	4	27.8	10	40.1	6	36.9	16	57.2	11
Martonvasar 2	44.8	7	51.6	9	24.9	5	32.9	5	38.2	8	53.1	8	67.3	3
GKF-2	40.7	9	53.8	5	22.5	9	32.3	7	39.3	7	64.5	2	68.5	1
Kormoran	66.1	4	52.9	6	20.0	13	32.4	6	40.3	5	40.4	14	66.6	4
Lely	68.4	3	52.3	8	28.6	1	36.4	2	44.1	2	51.1	10	61.6	9
Maris Templar	73.3	2	58.0	2	26.0	3	36.6	1	41.1	4	42.0	13	58.7	10
Biserka	31.7	14	56.3	4	21.3	11	21.6	12	34.1	13	63.6	3	54.2	13
Kitakomi-Komugi	32.1	12	42.3	14	23.6	7	30.0	9	36.4	12	55.3	6	65.9	5
Dunav-1	37.3	11	47.2	12	21.3	12	20.4	15	33.7	14	60.0	5	54.4	12
Sentinel	29.7	15	43.4	13	24.3	6	26.0	11	36.5	10	48.6	12	65.0	8
TRS 237	39.2	10	36.2	16	18.0	15	19.6	16	30.1	15	49.4	11	51.5	14
Atlas 66	31.8	13	47.8	11	15.0	17	21.0	13	26.4	17	36.3	17	43.8	15
Lerma Rojo 64	13.9	17	37.6	15	16.6	16	20.5	14	37.2	9	51.6	9	2.3	17
Rashid	22.1	16	29.4	17	19.6	14	18.2	17	26.7	16	38.1	15	15.5	16
Mean	44.7		48.8		22.3		28.0		36.9		51.4		54.8	
L.S.D. of cultivar means (.05)	16.6		10.5		7.1		17.5		6.9		15.7		23.4	
Coefficient of variation (%)	8.3		8.6		20.3		13.9		10.0		14.2		11.6	

Table 85. Two-year means and rankings of grain yield (q/ha) for 17 cultivars grown in the International Winter Wheat Performance Nursery, 1975 and 1976. Continued.

Cultivars	Lincoln, Nebraska USA		Ithaca, New York USA		Rowan Co., North Carolina USA		Stillwater, Oklahoma USA		Corvallis, Oregon USA		Pullman, Washington USA		Krasnodar, USSR	
	q/ha	rank	q/ha	rank	q/ha	rank	q/ha	rank	q/ha	rank	q/ha	rank	q/ha	rank
Talent	18.2	11	24.2	6	28.8	1	20.2	9	86.7	1	48.0	4	43.5	6
Blueboy	34.5	4	25.9	3	24.6	4	26.6	2	49.9	11	40.9	9	45.3	4
Bezostaya 1	39.6	2	25.2	4	23.5	6	25.3	3	61.3	7	43.8	7	44.6	5
Maris Huntsman	13.2	14	28.1	2	15.2	13	13.7	15	75.6	3	47.0	5	41.0	11
Martonvasar 2	40.6	1	20.8	10	25.0	3	22.6	5	55.3	9	44.7	6	45.8	3
GKF-2	34.4	5	19.5	13	24.0	5	23.0	4	58.4	8	40.3	10	46.5	2
Kormoran	22.3	8	24.6	5	15.0	14	21.3	7	50.3	10	48.2	3	41.6	9
Lely	13.8	13	24.1	7	17.6	11	16.6	13	83.5	2	56.2	1	41.8	7
Maris Templar	10.8	15	28.4	1	15.9	12	19.7	10	69.6	5	51.8	2	33.9	14
Biserka	19.7	10	20.8	11	25.2	2	18.8	11	66.5	6	40.2	11	41.2	10
Kitakomi-Komugi	24.7	7	16.4	14	21.7	8	15.4	14	25.6	17	40.1	12	47.1	1
Dunav-1	20.0	9	20.8	9	22.0	7	21.8	6	69.9	4	42.1	8	36.0	12
Sentinel	36.2	3	22.2	8	20.6	9	27.7	1	38.7	13	36.0	13	41.6	8
TRS 237	24.8	6	16.2	15	20.4	10	20.5	8	38.5	14	32.8	15	34.5	13
Atlas 66	15.8	12	20.6	12	14.0	15	17.8	12	44.3	12	33.3	14	28.2	15
Lerma Rojo 64	0.0	17	0.9	17	7.0	17	0.0	17	37.5	15	25.9	17	19.8	16
Rashid	4.0	16	4.7	16	11.6	16	3.9	16	26.1	17	28.0	16	19.6	17
Mean	21.9		20.2		19.5		18.5		55.2		41.1		39.5	
L.S.D. of cultivar means (.05)	20.5		11.2		8.6		10.1		15.1		12.7		19.3	
Coefficient of variation (%)	14.4		15.0		16.0		15.3		14.6		15.8		12.8	

Table 85. Two-year means and rankings of grain yield (q/ha) for 17 cultivars grown in the International Winter Wheat Performance Nursery, 1975 and 1976. Concluded.

Cultivars	Odessa, USSR		Monsheim, West Germany		Weihenstephan, West Germany		Novi Sad, Yugoslavia		Zagreb, Yugoslavia		Cultivar mean over 39 sites
	q/ha	rank	q/ha	rank	q/ha	rank	q/ha	rank	q/ha	rank	q/ha
Talent	31.1	6	48.2	2	70.8	6	54.9	1	58.3	1	46.6
Blueboy	29.0	10	43.5	7	74.5	5	47.1	5	33.4	12	45.6
Bezostaya 1	31.8	3	43.7	6	68.2	7	42.9	10	41.6	9	45.0
Maris Huntsman	31.4	5	48.8	1	74.7	4	46.4	7	49.0	4	44.8
Martonvasar 2	33.5	2	44.3	5	64.0	9	44.8	9	41.4	10	44.7
GKF-2	31.5	4	46.8	3	68.2	7	49.3	4	46.3	6	44.5
Kormoran	26.7	13	39.5	14	75.0	3	45.4	8	43.3	7	43.2
Lely	29.1	9	41.9	9	75.3	2	36.5	15	42.5	8	42.8
Maris Templar	28.1	11	46.1	4	76.0	1	39.4	12	48.6	5	42.8
Biserka	34.4	1	41.7	10	63.4	10	53.8	2	55.9	2	42.7
Kitakomi-Komugi	30.9	7	43.1	8	62.9	11	46.5	6	40.2	11	40.9
Dunav-1	30.4	8	41.5	11	58.2	14	50.0	3	52.0	3	40.9
Sentinel	26.2	14	39.9	13	58.9	13	38.5	13	29.6	15	40.3
TRS 237	28.0	12	41.1	12	54.7	16	38.4	14	31.3	13	35.9
Atlas 66	19.2	15	38.6	15	61.0	12	40.0	11	30.1	14	33.5
Lerma Rojo 64	16.7	17	35.3	16	56.2	15	34.7	16	24.1	16	28.9
Rashid	18.0	16	31.7	17	52.8	17	30.5	17	20.2	17	25.8
Mean	28.0		42.1		65.6		43.5		40.4		40.5
L.S.D. of cultivar means (.05)	14.8		6.8		4.6		9.4		14.5		3.2
Coefficient of variation (%)	9.3		6.3		4.4		11.9		12.5		13.6

Table 86. Two-year means and rankings of grain protein (%) for 17 cultivars grown in the International Winter Wheat Performance Nursery, 1975 and 1976.

Cultivars	Kabul, Afghanistan		Bordenave, Argentina		Vienna, Austria		Tolbukhin, Bulgaria		Temuco, Chile		Male Ripnany Czechoslovakia	
	%	rank	%	rank	%	rank	%	rank	%	rank	%	rank
Atlas 66	18.3	1	17.0	1	19.4	1	18.1	1	14.0	5	18.2	1
Sentinel	16.2	2	16.0	2	17.9	2	16.0	4	14.8	2	17.4	2
Rashid	15.3	6	15.9	3	16.0	6	14.3	13	14.0	4	15.6	6
TRS 237	15.6	3	15.3	4	15.8	9	15.2	7	14.5	3	16.2	5
Lerma Rojo 64	14.2	10	15.0	6	14.8	13	16.7	2	16.8	1	16.6	3
Dunav-1	13.9	15	15.0	5	15.9	8	15.0	10	13.6	7	15.3	7
Biserka	14.5	9	14.5	11	15.9	7	16.1	3	13.8	6	16.3	4
Martonvasar 2	15.6	5	15.0	7	15.2	11	15.0	9	13.2	9	15.1	9
Talent	14.1	14	14.1	13	15.0	12	14.7	11	13.1	10	14.5	15
Lely	14.6	7	14.8	8	16.8	3	15.4	6	11.3	15	14.9	11
Bezostaya 1	15.6	4	14.6	9	14.8	13	14.1	14	12.5	12	14.7	13
Kormoran	14.6	8	13.9	16	15.7	10	14.5	12	11.4	14	14.9	11
Maris Templar	14.2	11	14.3	12	16.5	4	15.6	5	11.2	16	14.5	14
Maris Huntsman	14.1	13	14.0	14	16.1	5	15.1	8	10.9	17	14.4	16
GKF-2	14.1	12	14.6	10	14.5	15	13.9	15	13.0	11	15.0	10
Kitakomi-Komugi	13.4	16	13.9	15	13.7	17	13.2	16	13.3	8	15.2	8
Blueboy	12.8	17	12.9	17	14.1	16	12.4	17	11.4	13	13.8	17
Mean	14.8		14.7		15.8		15.0		13.1		15.4	
L.S.D. of cultivar means (.05)	2.0		3.4		1.1		2.5		1.7		2.5	
Coefficient of variation (%)	4.4		5.5		3.9		2.8		4.1		3.2	

Table 86. Two-year means and rankings of grain protein (%) for 17 cultivars grown in the International Winter Wheat Performance Nursery, 1975 and 1976. Continued.

Cultivars	Sedlec, Czechoslovakia		Martonvasar, Hungary		Hamadan, Iran		Karaj, Iran		Sulaimaniya, Iraq		Milano, Italy	
	%	rank	%	rank	%	rank	%	rank	%	rank	%	rank
Atlas 66	18.8	1	17.3	1	16.5	1	14.4	1	17.1	1	16.7	1
Sentinel	18.1	2	16.6	2	14.8	5	13.9	2	14.6	6	16.4	2
Rashid	16.5	5	15.4	3	14.9	4	13.2	4	12.8	15	15.6	3
TRS 237	16.3	6	14.9	6	14.9	3	13.3	3	14.0	9	15.1	4
Lerma Rojo 64	15.9	9	14.4	9	15.5	2	12.2	7	14.0	10	13.7	15
Dunav-1	15.5	13	15.0	4	14.4	6	12.6	5	13.9	11	14.6	10
Biserka	15.7	12	14.5	8	13.3	11	12.0	8	12.9	14	14.1	13
Martonvasar 2	15.9	10	14.9	5	13.9	8	12.3	6	14.3	7	14.3	11
Talent	14.6	15	14.4	9	14.0	7	11.9	9	14.2	8	14.7	6
Lely	17.5	3	14.7	7	12.5	15	11.0	13	14.7	5	14.6	9
Bezostaya 1	15.8	11	14.3	11	13.1	12	11.7	10	13.8	12	14.6	8
Kormoran	16.5	4	13.7	15	13.7	9	11.7	11	15.3	4	14.6	7
Maris Templar	16.0	8	14.3	13	12.3	16	11.5	12	16.0	2	14.9	5
Maris Huntsman	16.1	7	14.0	14	13.0	13	10.7	15	15.4	3	14.2	12
GKF-2	14.6	16	14.3	12	12.6	14	10.8	14	13.2	13	14.1	14
Kitakomi-Komugi	14.5	17	13.5	16	13.5	10	10.4	17	12.1	16	12.8	17
Blueboy	15.1	14	12.4	17	12.2	17	10.6	16	11.8	17	13.0	16
Mean	16.1		14.6		13.8		12.0		14.1		14.6	
L.S.D. of cultivar means (.05)	1.7		1.5		2.6		1.3		2.3		1.8	
Coefficient of variation (%)	3.4		1.8		10.7		6.8		6.5		4.9	

Table 86. Two-year means and rankings of grain protein (%) for 17 cultivars grown in the International Winter Wheat Performance Nursery, 1975 and 1976. Continued.

Cultivars	Toluca, Mexico		Wageningen, Netherlands		Warsaw,[a/] Poland		Fundulea, Romania		Bethlehem, South Africa		Svalof,[a/] Sweden	
	%	rank	%	rank	%	rank	%	rank	%	rank	%	rank
Atlas 66	19.1	2	14.8	4	17.6	1	17.7	1	15.4	1	17.2	2
Sentinel	17.2	9	14.8	3	16.9	2	16.7	2	13.8	6	19.5	1
Rashid	18.8	3	15.2	2	15.6	3	15.9	5	14.8	3	15.9	4
TRS 237	17.2	8	15.5	1	15.3	4	15.5	10	13.8	5	16.1	3
Lerma Rojo 64	17.8	7	14.4	5	--	-	15.8	6	15.1	2	--	-
Dunav-1	18.1	4	14.1	6	15.1	5	15.2	13	13.5	8	15.0	6
Biserka	19.3	1	13.3	7	14.1	9	15.2	12	14.4	4	15.9	5
Martonvasar 2	18.0	5	13.2	8	14.7	6	15.3	11	13.6	7	14.9	7
Talent	16.3	10	12.8	9	14.1	7	15.6	9	12.5	10	13.7	11
Lely	16.0	13	11.9	15	13.6	14	15.9	4	10.7	16	12.5	14
Bezostaya 1	16.1	11	12.2	13	14.1	10	14.3	15	12.9	9	14.0	10
Kormoran	15.4	14	12.1	14	13.9	11	15.7	7	11.0	15	12.3	15
Maris Templar	15.2	17	11.5	17	13.6	12	16.2	3	11.1	14	12.8	12
Maris Huntsman	15.3	16	12.2	12	14.1	7	15.6	8	10.2	17	12.6	13
GKF-2	17.9	6	12.7	10	13.6	13	14.5	14	12.4	11	14.7	8
Kitakomi-Komugi	15.4	15	12.6	11	13.4	15	13.5	16	12.3	12	14.6	9
Blueboy	16.1	12	11.6	16	13.1	16	13.0	17	11.6	13	12.1	16
Mean	17.0		13.2		14.5		15.4		12.9		14.6	
L.S.D. of cultivar means (.05)	1.9		1.7		1.9		1.3		1.2		0.8	
Coefficient of variation (%)	5.4		5.8		3.1		4.0		5.0		2.7	

[a/] These sites are not included in the overall means.

Table 86. Two-year means and rankings of grain protein (%) for 17 cultivars grown in the International Winter Wheat Performance Nursery, 1975 and 1976. Continued.

Cultivars	Zurich, Switzerland		Erzurum, Turkey		Eskisehir, Turkey		Fort Collins, Colorado [a] USA		Ithaca, New York [a] USA		Rowan County, North Carolina USA	
	%	rank	%	rank	%	rank	%	rank	%	rank	%	rank
Atlas 66	16.5	1	17.3	1	16.4	1	18.5	1	14.5	1	17.6	1
Sentinel	16.1	2	15.4	2	15.4	2	17.2	2	14.2	3	14.8	5
Rashid	15.3	4	14.6	5	15.1	4	--	-	--	-	14.2	9
TRS 237	15.5	3	15.0	4	14.7	6	16.1	3	14.4	2	14.5	7
Lerma Rojo 64	13.8	13	15.2	3	15.2	3	--	-	--	-	15.9	2
Dunav-1	14.3	7	14.3	7	14.5	7	15.4	6	13.4	4	14.7	6
Biserka	13.9	10	14.6	5	14.0	9	15.8	5	13.0	6	13.5	14
Martonvasar 2	15.1	5	14.1	8	13.6	10	15.8	4	12.8	8	13.9	12
Talent	14.0	8	13.7	12	14.8	5	14.7	10	13.1	5	13.1	15
Lely	13.9	9	13.5	14	12.1	16	14.8	9	11.4	14	15.1	3
Bezostaya 1	14.8	6	13.9	9	13.1	14	14.1	14	12.4	10	14.0	10
Kormoran	13.4	15	13.8	10	13.2	12	15.3	7	12.0	12	15.0	4
Maris Templar	13.8	12	13.2	16	13.2	12	14.3	13	11.3	15	14.0	11
Maris Huntsman	13.8	11	13.8	10	12.8	15	14.6	11	11.6	13	14.4	8
GKF-2	13.6	14	13.6	13	13.2	11	14.8	8	13.0	6	12.5	17
Kitakomi-Komugi	12.7	17	13.1	17	14.1	8	14.4	12	12.6	9	12.8	16
Blueboy	12.9	16	13.3	15	12.0	17	13.1	15	12.4	11	13.6	13
Mean	14.3		14.3		14.0		15.3		12.8		14.3	
L.S.D. of cultivar means (.05)	1.2		1.6		1.0		1.1		1.7		1.9	
Coefficient of variation (%)	3.1		6.1		5.6		2.7		4.1		5.0	

[a] These sites are not included in the overall means.

Table 86. Two-year means and rankings of grain protein (%) for 17 cultivars grown in the International Winter Wheat Performance Nursery, 1975 and 1976. Concluded.

Cultivars	Pullman, Washington USA[a]		Odessa, USSR		Monsheim, West Germany		Weihenstephan, West Germany		Novi Sad, Yugoslavia		Zagreb, Yugoslavia		Cultivar mean over 25 sites
	%	rank	%	rank	%	rank	%	rank	%	rank	%	rank	%
Atlas 66	16.6	1	18.3	1	17.6	1	14.6	3	18.5	1	14.9	6	17.0
Sentinel	15.3	3	16.4	3	16.9	2	15.1	2	17.9	2	16.1	1	16.0
Rashid	14.5	5	16.2	4	15.8	3	14.3	4	16.6	4	15.7	2	15.3
TRS 237	14.9	4	16.2	5	15.4	8	15.2	1	16.0	9	15.4	4	15.2
Lerma Rojo 64	--	-	17.1	2	15.5	7	13.3	8	15.9	11	14.6	7	15.2
Dunav-1	15.8	2	15.9	8	15.0	11	13.9	5	15.8	12	15.6	3	14.8
Biserka	13.2	12	15.3	11	15.4	9	13.5	6	15.6	14	15.3	5	14.7
Martonvasar 2	14.4	6	15.1	13	14.7	13	13.5	7	16.9	3	14.1	10	14.6
Talent	13.7	8	16.1	6	14.8	12	12.9	11	16.1	6	14.3	8	14.2
Lely	12.4	14	15.6	10	15.5	6	11.6	17	15.9	10	13.3	14	14.1
Bezostaya 1	14.0	7	14.6	14	14.4	14	13.0	10	16.0	8	13.9	11	14.1
Kormoran	13.3	11	16.1	7	15.6	5	11.7	13	15.7	13	13.5	12	14.1
Maris Templar	12.5	13	15.6	9	15.6	4	11.7	14	16.4	5	13.3	13	14.1
Maris Huntsman	--	-	15.3	12	15.2	10	11.6	15	16.1	7	12.7	16	13.9
GKF-2	13.6	10	14.1	15	13.6	16	13.1	9	15.5	15	14.2	9	13.8
Kitakomi-Komugi	13.5	7	13.8	16	13.6	17	12.3	12	14.1	16	12.9	15	13.3
Blueboy	11.9	15	13.1	17	13.6	15	11.6	15	13.8	17	11.7	17	12.8
Mean	14.0		15.6		15.2		13.1		16.0		14.2		14.5
L.S.D. of cultivar means (.05)	1.6		2.2		1.2		0.8		1.0		1.1		0.4
Coefficient of variation (%)	7.8		5.7		3.2		3.5		2.4		5.0		4.9

[a] These sites are not included in the overall means.

Table 87. Two-year means and rankings of test weight (kg/hl) for 17 cultivars grown in the International Winter Wheat Performance Nursery, 1975 and 1976.

Cultivars	Bordenave, Argentina		Male Ripnany, Czechoslovakia		Sedlec, Czechoslovakia		Milano, Italy		Wageningen, Netherlands		Fundulea, Romania		Bethlehem South Africa	
	kg/hl	rank	kg/hl	rank	kg/hl	rank	kg/hl	rank	kg/hl	rank	kg/hl	rank	kg/hl	rank
Bezostaya 1	78.9	1	81.2	1	83.1	1	80.6	1	81.9	1	78.2	2	69.7	16
Martonvasar 2	77.9	2	80.4	2	80.4	6	80.1	2	81.1	2	76.2	9	77.5	1
Dunav-1	76.7	8	79.1	5	81.3	2	78.3	6	78.0	10	76.2	8	75.6	8
Sentinel	76.9	5	79.6	4	80.7	3	79.4	3	79.8	4	76.9	6	76.0	5
Lerma Rojo 64	77.2	4	77.1	10	80.5	5	78.9	4	79.5	5	78.7	1	76.1	4
Biserka	76.2	9	79.0	7	79.5	8	77.5	8	77.6	11	77.0	5	75.9	6
Rashid	76.8	6	79.0	6	80.0	7	77.7	7	78.3	8	76.2	10	77.0	2
Atlas 66	77.5	3	78.0	8	79.0	12	78.5	5	80.1	3	77.2	4	73.7	11
Talent	73.9	12	77.9	9	79.2	10	74.5	12	78.4	6	74.6	11	75.5	9
GKF-2	75.6	11	76.3	12	79.2	10	75.6	11	78.4	6	73.8	12	75.8	7
Kitakomi-Komugi	71.9	13	80.1	3	80.7	4	76.3	9	78.1	9	77.3	3	76.2	3
TRS 237	76.7	7	76.6	11	79.5	9	75.8	10	73.6	17	76.6	7	74.9	10
Blueboy	75.7	10	74.8	14	76.4	13	74.3	13	76.6	12	70.1	13	73.0	12
Lely	65.4	17	75.2	13	75.7	14	70.9	16	75.9	13	69.5	15	70.5	14
Maris Templar	66.8	16	73.4	17	74.6	16	73.1	14	74.8	15	68.9	16	70.5	13
Kormoran	68.8	14	74.0	15	75.2	15	70.5	17	74.6	16	69.5	14	70.4	15
Maris Huntsman	67.2	15	73.8	16	73.5	17	72.8	15	75.3	14	65.6	17	68.1	17
Mean	74.1		77.4		78.7		76.2		77.8		74.3		73.9	
L.S.D. of cultivar means (.05)	5.0		4.5		4.5		4.1		5.4		3.4		6.7	
Coefficient of variation (%)	1.7		0.2		1.2		2.3		2.5		1.3		8.2	

Table 87. Two-year means and rankings of test weight (kg/hl) for 17 cultivars grown in the International Winter Wheat Performance Nursery, 1975 and 1976. Concluded.

Cultivars	Zurich, Switzerland		Erzurum, Turkey		Eskisehir, Turkey		Corvallis, Oregon USA		Odessa, USSR		Weihenstephan, West Germany		Novi Sad, Yugoslavia		Cultivar mean over 14 sites
	kg/hl	rank	kg/hl	rank	kg/hl	rank	kg/hl	rank	kg/hl	rank	kg/hl	rank	kg/hl	rank	kg/hl
Bezostaya 1	79.7	1	79.5	1	84.9	1	75.3	5	78.8	1	80.1	3	78.1	1	79.3
Martonvasar 2	78.7	3	78.6	2	78.2	10	74.6	7	77.5	8	78.2	8	76.8	4	78.3
Dunav-1	77.3	6	78.3	4	79.4	8	77.3	1	78.3	3	77.8	9	77.4	2	77.9
Sentinel	77.7	5	77.9	6	79.8	7	71.6	14	78.3	4	81.0	1	75.2	5	77.9
Lerma Rojo 64	75.6	10	78.3	4	82.6	4	71.8	13	78.2	5	80.6	2	73.7	10	77.8
Biserka	76.1	8	76.3	10	78.6	9	74.3	8	78.6	2	78.7	6	76.9	3	77.3
Rashid	72.5	14	77.9	6	82.7	3	72.0	12	77.7	7	79.1	5	75.1	6	77.3
Atlas 66	79.2	2	75.8	12	77.1	13	76.8	2	75.4	11	79.5	4	71.5	14	77.1
Talent	77.8	4	76.6	9	79.9	6	74.6	6	75.3	12	76.5	12	74.7	8	76.4
GKF-2	74.3	12	77.8	8	77.5	11	72.6	10	76.3	10	78.6	7	73.9	9	76.1
Kitakomi-Komugi	71.4	16	78.5	3	83.1	2	63.3	17	78.1	6	76.7	11	73.6	11	76.1
TRS 237	70.2	17	76.3	10	80.3	5	69.6	15	77.1	9	76.0	13	74.9	7	75.6
Blueboy	76.9	7	75.3	14	76.0	15	65.5	16	74.0	13	77.5	10	70.6	15	74.0
Lely	75.6	9	75.5	13	76.4	14	75.3	4	72.7	15	74.0	14	71.7	12	73.2
Maris Templar	74.6	11	75.3	14	75.9	16	75.9	3	73.0	14	72.4	16	69.8	16	72.8
Kormoran	74.2	13	74.5	17	77.4	12	72.1	11	70.7	16	72.9	15	71.6	13	72.6
Maris Huntsman	71.6	15	74.6	16	73.1	17	74.1	9	70.6	17	70.9	17	69.6	17	71.5
Mean	75.5		76.9		79.0		72.7		75.9		77.1		73.8		75.9
L.S.D. of cultivar means (.05)	6.0		2.4		4.6		3.7		3.4		7.0		3.3		1.6
Coefficient of variation (%)	1.2		1.2		2.5		1.4		1.4		1.0		3.8		2.8

Table 88. Two-year means and rankings of 1000-kernel weight (g) for 17 cultivars grown in the International Winter Wheat Performance Nursery, 1975 and 1976.

Cultivars	Vienna, Austria		Tolbukhin, Bulgaria		Sedlec, Czechoslovakia		Suwon, Korea		Zurich, Switzerland		Cultivar mean over 5 sites
	g	rank	g	rank	g	rank	g	rank	g	rank	g
Bezostaya 1	42.6	2	38.8	3	44.4	1	40.1	1	47.1	4	42.6
Martonvasar 2	43.1	1	37.2	9	43.6	2	39.3	2	47.6	3	42.2
Maris Templar	41.4	4	34.5	10	43.1	3	34.8	7	50.7	1	40.9
Maris Huntsman	42.2	3	33.9	11	41.6	4	33.4	11	49.3	2	40.1
Lerma Rojo 64	36.6	10	43.6	1	41.3	8	36.8	4	39.3	12	39.5
TRS 237	40.7	5	37.2	8	41.4	6	37.5	3	40.1	9	39.4
Dunav-1	39.8	6	37.3	7	39.6	9	36.0	6	41.1	8	38.8
GKF-2	35.1	12	37.5	6	41.4	5	34.3	9	43.5	5	38.3
Rashid	37.4	9	37.7	5	41.3	7	32.6	12	39.2	13	37.6
Biserka	38.6	7	39.7	2	38.0	10	31.0	14	38.2	16	37.1
Atlas 66	35.9	11	33.7	12	36.1	12	34.3	8	39.4	11	35.9
Kitakomi-Komugi	29.7	17	37.9	4	34.2	16	36.2	5	38.0	17	35.2
Kormoran	37.9	8	29.8	16	36.2	11	30.5	15	41.3	7	35.1
Blueboy	34.5	13	30.3	15	35.3	14	33.4	10	42.0	6	35.1
Sentinel	34.3	15	31.9	14	35.8	13	31.9	13	38.2	15	34.4
Talent	31.3	16	32.9	13	33.1	17	30.1	16	38.4	14	33.1
Lely	34.3	14	26.4	17	34.6	15	25.3	17	39.6	10	32.0
Mean	37.4		35.3		38.9		34.0		41.9		37.5
L.S.D. of cultivar means (.05)	7.8		7.5		5.6		5.4		4.7		3.3
Coefficient of variation (%)	5.7		5.7		3.0		6.8		3.5		5.0

Table 89. Two-year means and rankings of plant height (cm) for 17 cultivars grown in the International Winter Wheat Performance Nursery, 1975 and 1976.

Cultivars	Bordenave, Argentina		Vienna, Austria		Tolbukhin, Bulgaria		Temuco, Chile		Male Ripnany, Czechoslovakia		Sedlec, Czechoslovakia		Cambridge, England	
	cm	rank	cm	rank	cm	rank	cm	rank	cm	rank	cm	rank	cm	rank
Dunav-1	69.4	1	81.9	3	80.1	3	87.5	3	77.5	1	73.5	1	78.1	2
Biserka	72.1	2	81.3	2	78.0	1	85.6	1	78.0	2	73.8	2	77.6	1
Talent	76.9	5	80.6	1	78.5	2	86.9	2	78.0	2	76.9	3	84.6	3
GKF-2	74.0	3	85.0	4	83.0	4	96.9	4	78.5	4	79.9	4	85.3	4
Kitakomi-Komugi	76.8	4	89.4	5	89.1	5	98.1	5	88.6	7	81.8	5	87.5	5
Lerma Rojo 64	81.5	8	96.3	7	98.9	14	99.4	6	84.0	5	82.0	6	92.6	6
Martonvasar 2	79.9	7	91.9	6	92.6	9	107.5	8	87.0	6	87.0	7	93.0	7
Maris Templar	83.9	10	99.4	9	91.1	7	110.0	9	94.0	10	93.3	9	95.1	9
Lely	86.0	11	101.9	10	95.8	11	114.4	10	93.5	9	96.4	10	93.8	8
Bezostaya 1	78.6	6	96.3	7	93.4	10	106.9	7	94.0	10	90.0	8	97.5	11
Kormoran	88.6	14	104.4	12	91.3	8	114.4	10	92.0	8	100.1	14	95.4	10
Sentinel	83.6	9	105.0	13	99.8	15	117.5	14	99.0	14	98.0	11	97.9	12
Maris Huntsman	92.4	15	103.8	11	96.3	12	116.3	12	99.6	15	98.1	12	103.6	13
Blueboy	86.4	12	105.6	14	97.4	13	116.9	13	97.0	13	98.1	12	104.1	14
Rashid	86.4	12	110.6	15	104.4	17	120.0	15	107.9	16	102.4	15	107.6	15
TRS 237	96.4	16	115.0	16	103.9	16	121.3	16	95.5	12	107.8	17	111.6	16
Atlas 66	103.3	17	115.0	16	90.5	6	135.0	17	115.1	17	104.1	16	116.8	17
Means	83.3		97.8		92.0		107.9		91.7		90.8		95.4	
L.S.D. of cultivar means (.05)	15.8		5.8		12.3		11.1		10.4		8.8		6.3	
Coefficient of variation (%)	6.7		3.4		9.5		3.1		0.3		4.1		4.8	

Table 89. Two-year means and rankings of plant height (cm) for 17 cultivars grown in the International Winter Wheat Performance Nursery, 1975 and 1976. Continued.

Cultivars	Jokioinen, Finland[a]		Martonvasar, Hungary		Szeged, Hungary		Hamadan, Iran		Sulaimaniya, Iraq		Milano, Italy		Morioka, Japan[a]	
	cm	rank	cm	rank	cm	rank	cm	rank	cm	rank	cm	rank	cm	rank
Dunav-1	45.7	2	81.8	2	82.3	1	79.3	2	77.5	2	90.6	2	87.9	3
Biserka	52.5	5	84.1	3	83.4	3	80.3	3	75.6	1	91.3	3	87.0	2
Talent	42.5	1	81.5	1	82.5	2	76.5	1	77.5	2	90.0	1	85.8	1
GKF-2	51.3	3	88.1	5	88.8	4	84.8	5	83.1	4	91.9	4	92.3	4
Kitakomi-Komugi	56.3	7	89.6	6	91.9	7	83.5	4	87.5	6	95.6	5	103.3	10
Lerma Rojo 64	--	-	88.0	4	99.8	10	87.3	6	97.5	11	97.5	6	--	-
Martonvasar 2	52.5	5	94.5	7	91.0	6	88.9	9	90.0	7	103.1	9	97.4	5
Maris Templar	51.3	3	99.0	9	100.3	11	95.5	14	96.9	10	103.8	10	104.8	11
Lely	57.5	8	102.6	11	101.9	14	88.1	7	84.4	5	102.5	8	100.8	7
Bezostaya 1	57.5	8	99.1	10	89.8	5	93.6	12	92.5	9	105.6	12	102.8	9
Kormoran	59.4	14	105.3	13	100.6	12	91.4	11	90.6	8	104.4	11	99.1	6
Sentinel	57.5	8	98.0	8	95.0	8	88.6	8	101.3	12	101.3	7	102.3	8
Maris Huntsman	68.8	15	106.1	14	98.6	9	95.4	13	105.6	14	111.3	14	104.8	11
Blueboy	57.5	8	107.4	15	101.3	13	90.9	10	105.0	13	107.5	13	117.3	14
Rashid	--	-	102.8	12	110.0	17	100.4	15	108.8	15	111.3	14	--	-
TRS 237	58.8	13	115.0	17	108.8	16	102.3	16	112.5	16	117.5	16	115.3	13
Atlas 66	57.5	8	108.4	16	106.9	15	109.1	17	116.3	17	123.1	17	122.0	15
Mean	55.2		97.1		96.0		90.3		94.3		102.8		101.5	
L.S.D. of cultivar means (.05)	33.8		9.3		5.6		10.1		9.7		9.0		14.2	
Coefficient of variation (%)	12.0		3.6		4.9		7.4		8.5		4.0		6.1	

[a] These sites are not included in the overall means.

Table 89. Two-year means and rankings of plant height (cm) for 17 cultivars grown in the International Winter Wheat Performance Nursery, 1975 and 1976. Continued.

Cultivars	Amman, Jordan		Suwon, Korea		Toluca, Mexico		Kathmandu, Nepal		Wegeningen, Netherlands		Warsaw, Poland		Fundulea, Romania	
	cm	rank	cm	rank	cm	rank	cm	rank	cm	rank	cm	rank	cm	rank
Dunav-1	57.1	9	86.4	2	78.1	1	80.0	3	83.1	2	80.9	1	82.5	2
Biserka	52.5	4	78.8	1	78.1	1	82.8	5	82.3	1	84.5	2	80.6	1
Talent	51.9	2	87.1	4	78.1	1	74.8	1	87.1	3	85.4	.3	84.4	3
GKF-2	59.0	11	88.1	5	81.3	4	81.4	4	95.0	4	89.5	5	85.0	4
Kitakomi-Komugi	55.8	8	102.0	14	86.3	10	87.5	8	96.4	5	96.8	7	89.4	5
Lerma Rojo 64	55.5	7	86.4	2	85.0	7	101.6	14	97.9	6	85.4	3	90.0	6
Martonvasar 2	59.5	12	100.3	11	82.5	5	87.6	9	104.9	9	96.6	6	97.5	7
Maris Templar	52.1	3	96.9	7	91.3	13	88.0	10	101.1	7	101.8	10	100.0	9
Lely	47.9	1	97.5	8	88.1	11	79.9	2	103.3	8	105.8	13	101.3	10
Bezostaya 1	60.1	13	101.4	13	83.8	6	90.1	11	105.8	10	100.3	8	99.4	8
Kormoran	55.0	5	99.1	9	93.8	14	82.9	6	111.4	12	106.9	14	103.1	11
Sentinel	57.5	10	100.3	11	85.0	7	83.9	7	111.5	13	100.6	9	105.0	13
Maris Huntsman	55.0	5	100.1	10	98.1	15	90.9	12	109.4	11	104.9	12	104.4	12
Blueboy	61.8	15	102.0	14	85.0	7	96.3	13	113.0	14	111.9	15	106.9	14
Rashid	60.1	13	105.4	15	89.4	12	118.6	17	117.4	15	104.4	11	108.8	15
TRS 237	64.0	16	119.0	16	101.3	17	112.3	15	128.3	17	115.4	17	115.6	16
Atlas 66	71.8	17	119.9	17	99.4	16	114.5	16	127.0	16	115.1	16	117.5	17
Mean	57.4		97.9		87.3		91.3		104.4		99.2		98.3	
L.S.D. of cultivar means (.05)	14.3		10.5		14.2		9.6		8.9		7.6		9.5	
Coefficient of variation (%)	9.6		6.1		10.3		8.8		4.1		4.1		3.5	

Table 89. Two-year means and rankings of plant height (cm) for 17 cultivars grown in the International Winter Wheat Performance Nursery, 1975 and 1976. Continued.

Cultivars	Bethlehem, South Africa		Svalof,[a] Sweden		Zurich, Switzerland		Erzurum, Turkey		Eskisehir, Turkey		Davis, California, USA		Rowan County, North Carolina: USA		Stillwater, Oklahoma USA	
	cm	rank	cm	rank	cm	rank	cm	rank	cm	rank	cm	rank	cm	rank	cm	rank
Dunav-1	68.4	2	66.9	2	81.9	1	59.8	1	69.4	1	100.1	2	70.8	4	64.4	1
Biserka	64.4	1	65.6	1	85.6	2	60.5	2	69.4	1	102.8	3	73.3	6	65.0	2
Talent	70.9	3	72.5	4	86.9	3	66.8	6	72.5	3	98.8	1	70.3	3	65.9	3
GKF-2	75.3	4	76.9	5	88.8	4	71.6	8	73.8	4	106.4	4	73.3	6	71.6	4
Kitakomi-Komugi	81.3	5	71.3	3	95.0	5	72.1	9	80.6	5	113.5	8	79.0	12	73.8	5
Lerma Rojo 64	89.4	13	--	-	95.6	6	72.5	10	85.6	6	109.3	5	65.9	1	--	-
Martonvasar 2	81.6	6	81.3	8	101.3	8	79.1	12	89.4	9	118.0	10	81.4	14	73.9	6
Maris Templar	83.0	7	78.8	6	100.6	7	64.9	3	88.8	8	111.5	6	72.1	5	75.1	7
Lely	84.8	8	87.5	10	103.1	10	65.8	5	90.6	10	111.6	7	76.3	8	80.3	10
Bezostaya 1	85.1	9	82.5	9	102.5	9	79.8	14	93.8	12	119.3	11	78.1	10	75.4	9
Kormoran	88.0	11	91.3	13	105.0	11	65.5	4	87.5	7	117.1	9	68.6	2	75.1	7
Sentinel	85.1	9	80.6	7	105.6	12	79.6	13	95.0	13	125.3	15	76.4	9	82.8	12
Maris Huntsman	94.6	16	91.9	15	107.5	13	67.4	7	91.9	11	121.4	12	81.1	13	80.4	11
Blueboy	88.0	11	91.3	13	111.9	14	74.9	11	98.8	15	122.6	14	83.4	15	85.0	13
Rashid	91.1	14	90.6	12	113.1	15	82.5	15	101.3	16	121.6	13	78.3	11	--	-
TRS 237	93.4	15	96.3	16	118.1	16	83.6	16	98.1	14	137.5	16	95.6	16	90.3	14
Atlas 66	99.0	17	90.0	11	125.6	17	86.4	17	113.1	17	145.4	17	101.3	17	91.5	15
Mean	83.7		82.2		101.7		72.5		88.2		116.6		77.9		76.7	
L.S.D. of cultivar means (.05)	9.3		8.7		8.2		13.5		9.3		12.5		12.3		8.4	
Coefficient of variation (%)	3.3		3.3		4.6		72.5		6.0		3.8		5.4		5.4	

[a] These sites are not included in the overall means.

Table 89. Two-year means and rankings of plant height (cm) for 17 cultivars grown in the International Winter Wheat Performance Nursery, 1975 and 1976. Concluded.

Cultivars	Corvallis, Oregon USA		Krasnodar,[a] USSR		Odessa, USSR		Monsheim, West Germany		Weiphenstephan, West Germany		Novi Sad, Yugoslavia		Zagreb, Yugoslavia		Cultivar mean over 31 sites
	cm	rank	cm	rank	cm	rank	cm	rank	cm	rank	cm	rank	cm	rank	cm
Dunav-1	104.6	1	89.8	4	84.1	3	68.0	3	71.9	2	78.1	4	82.1	1	78.9
Biserka	107.1	3	88.8	2	84.8	4	66.5	2	71.8	1	79.4	5	83.8	4	79.0
Talent	105.6	2	88.1	1	82.0	2	65.5	1	75.6	3	75.8	1	82.5	2	79.7
GKF-2	110.0	5	89.0	3	92.0	7	70.1	4	82.4	4	75.8	1	83.0	3	83.9
Kitakomi-Komugi	112.5	6	95.6	5	90.5	6	75.0	7	83.5	5	76.3	3	85.8	5	87.5
Lerma Rojo 64	108.1	4	--	-	81.9	1	79.3	12	84.0	6	83.9	8	86.4	6	88.6
Martonvasar 2	125.0	7	105.3	11	99.0	13	77.9	11	89.8	7	85.4	10	93.0	8	92.1
Maris Templar	125.0	7	98.3	7	89.0	5	74.8	6	90.9	8	83.8	7	95.3	11	92.7
Lely	131.9	11	101.3	8	95.0	8	75.5	9	93.4	9	87.4	13	98.9	14	93.5
Bezostaya 1	128.1	10	96.1	6	96.8	11	75.1	8	93.4	9	86.9	12	92.1	7	93.8
Kormoran	132.8	13	103.0	9	96.3	10	75.8	10	99.0	12	82.6	6	94.8	10	94.9
Sentinel	143.1	15	107.5	13	95.3	9	74.0	5	98.5	11	88.4	14	93.3	9	96.4
Maris Huntsman	126.9	9	103.0	9	100.8	14	83.6	15	99.3	13	84.9	9	101.4	15	98.4
Blueboy	131.9	11	107.3	12	97.9	12	81.9	13	103.3	14	86.4	11	97.9	12	99.1
Rashid	136.3	14	110.3	14	104.3	15	83.1	14	107.9	15	94.8	15	98.8	13	102.9
TRS 237	148.5	16	114.8	15	111.6	17	91.8	17	112.6	16	97.1	16	104.4	17	108.2
Atlas 66	153.8	17	116.3	16	105.5	16	91.0	16	117.0	17	101.1	17	103.9	16	111.3
Mean	125.4		100.9		94.5		77.0		92.6		85.2		92.8		93.0
L.S.D. of cultivar means (.05)	7.7		11.2		12.8		6.8		3.9		5.3		8.7		2.3
Coefficient of variation (%)	2.5		4.9		4.0		4.2		3.0		4.0		4.4		5.3

a/These sites are not included in the overall means.

Table 90. Two-year means and rankings of lodging (%) for 17 cultivars grown in the International Winter Wheat Performance Nursery, 1975 and 1976.

Cultivars	Vienna, Austria		Temuco, Chile		Male Ripnany, Czechoslovakia		Martonvasar, Hungary		Milano, Italy		Suwon, Korea		Toluca, Mexico	
	%	rank	%	rank	%	rank	%	rank	%	rank	%	rank	%	rank
Biserka	21.3	5	2.5	1	0.0	1	1.9	2	16.3	3	1.9	3	16.9	5
Dunav-1	26.3	11	5.0	2	4.0	3	0.6	1	5.9	1	12.4	6	9.4	1
Lely	16.3	2	8.8	4	14.0	8	25.0	8	9.4	2	26.3	10	17.5	6
Maris Huntsman	27.5	12	8.8	4	32.5	11	13.8	5	46.8	7	0.0	1	15.0	4
Talent	20.0	3	12.5	7	0.0	1	11.9	4	59.8	10	23.8	8	31.3	12
Maris Templar	21.3	5	6.3	3	34.0	12	22.5	7	47.5	8	38.0	17	17.5	6
GKF-2	23.8	8	13.8	8	5.0	4	8.8	3	46.6	6	36.1	15	20.0	8
Kormoran	20.0	3	11.3	6	20.0	9	27.5	10	31.8	4	28.6	11	10.0	2
Bezostaya 1	21.3	5	18.8	11	6.5	5	21.8	6	59.9	11	26.1	9	23.8	9
Blueboy	12.5	1	17.5	10	39.0	14	32.5	12	37.5	5	11.3	5	30.6	10
TRS 237	23.8	8	20.0	12	11.5	6	25.0	8	50.6	9	1.3	2	10.6	3
Martonvasar 2	28.8	8	16.3	9	12.0	7	28.8	11	76.6	12	8.8	4	31.3	12
Kitakomi-Komugi	31.3	13	22.5	13	20.5	10	55.5	14	76.9	13	36.1	15	36.9	14
Lerma Rojo 64	33.8	14	26.3	15	35.5	13	78.5	16	88.0	16	33.6	13	41.3	16
Sentinel	42.5	16	25.0	14	41.4	15	66.3	15	77.4	14	33.8	14	37.5	15
Atlas 66	36.3	15	35.0	16	43.3	16	48.6	13	78.5	15	28.8	12	30.6	10
Rashid	55.0	17	52.5	17	55.9	17	92.0	17	89.5	17	21.3	7	51.8	17
Mean	27.1		17.8		22.1		33.0		52.9		21.6		25.4	
L.S.D. of cultivar means (.05)	22.9		19.8		46.0		34.1		47.3		40.9		26.3	
Coefficient of variation (%)	28.7		69.6		14.6		56.4		48.8		72.4		72.1	

Table 90. Two-year means and rankings of lodging (%) for 17 cultivars grown in the International Winter Wheat Performance Nursery, 1975 and 1976. Continued.

Cultivars	Wageningen, Netherlands		Warsaw, Poland		Fundulea, Romania		Svalof,[a] Sweden		Zurich, Switzerland		Eskisehir, Turkey		Davis, California USA	
	%	rank	%	rank	%	rank	%	rank	%	rank	%	rank	%	rank
Biserka	0.0	1	7.5	10	0.0	1	0.3	1	0.0	1	0.0	1	0.6	4
Dunav-1	0.0	1	1.3	5	0.0	1	1.1	2	0.0	1	0.0	1	5.0	7
Lely	10.0	9	0.0	1	4.4	7	3.5	4	0.0	1	0.6	12	0.0	1
Maris Huntsman	3.8	7	0.0	1	0.0	1	6.8	8	3.1	8	0.0	1	0.6	4
Talent	0.0	1	0.0	1	0.0	1	3.5	4	1.3	6	0.0	1	0.0	1
Maris Templar	0.0	1	0.0	1	0.0	1	1.3	3	0.0	1	0.0	1	0.0	1
GKF-2	0.0	1	11.9	11	4.4	7	5.9	7	2.5	7	0.0	1	14.4	10
Kormoran	6.3	8	1.3	5	10.6	10	4.6	6	0.6	5	0.0	1	2.5	6
Bezostaya 1	1.3	6	3.1	7	1.3	6	28.8	14	16.9	10	0.0	1	38.1	12
Blueboy	38.1	12	15.0	13	10.6	10	18.1	9	20.0	12	1.3	14	6.3	8
TRS 237	48.8	13	5.0	8	13.8	12	27.5	13	16.3	9	0.0	1	38.8	13
Martonvasar 2	12.5	10	5.0	8	5.0	9	24.4	12	18.8	11	0.0	1	58.8	16
Kitakomi-Komugi	37.5	11	12.5	12	33.8	13	29.6	15	22.5	13	0.0	1	9.4	9
Lerma Rojo 64	74.3	16	36.6	15	40.0	14	—	-	39.4	14	6.3	15	33.8	11
Sentinel	65.6	14	30.6	14	50.1	16	21.8	11	55.5	15	0.6	12	46.3	14
Atlas 66	72.5	15	40.6	16	42.5	15	20.6	10	63.6	16	25.0	16	58.1	15
Rashid	84.3	17	95.6	17	66.9	17	62.5	16	88.5	17	47.3	17	99.0	17
Mean	26.8		15.6		16.7		16.3		20.5		4.8		24.2	
L.S.D. of cultivar means (.05)	30.2		34.0		52.2		26.3		29.0		34.4		29.8	
Coefficient of variation (%)	58.4		76.8		70.5		54.4		79.0		106.5		64.4	

[a] These sites are not included in the overall means.

Table 90. Two-year means and rankings of lodging (%) for 17 cultivars grown in the International Winter Wheat Performance Nursery, 1975 and 1976. Concluded.

Cultivars	Corvallis, Oregon USA		Krasnodar,[a] USSR		Odessa, USSR		Weihenstephan, West Germany		Novi Sad, Yugoslavia		Zagreb, Yugoslavia		Cultivar mean over 18 sites
	%	rank	%	rank	%	rank	%	rank	%	rank	%	rank	%
Biserka	1.4	2	35.0	3	3.1	1	0.0	1	16.3	1	4.6	3	5.2
Dunav-1	0.8	1	20.0	1	49.5	9	0.0	1	27.5	3	2.5	2	8.3
Lely	3.8	4	50.0	15	25.0	2	0.0	1	23.8	2	1.9	1	10.4
Maris Huntsman	6.3	7	50.0	15	37.5	6	0.0	1	57.5	6	12.1	5	14.7
Talent	1.9	3	35.0	3	28.0	4	2.5	8	83.8	13	7.1	4	15.8
Maris Templar	5.1	6	40.0	5	46.5	8	0.0	1	52.5	5	20.4	7	17.3
GKF-2	32.5	11	40.0	5	49.5	9	6.3	11	38.8	4	31.9	8	19.2
Kormoran	71.3	13	30.0	2	43.5	7	0.0	1	66.3	8	13.1	6	20.3
Bezostaya 1	4.4	5	40.0	5	31.1	5	0.0	1	70.0	9	32.1	10	20.9
Blueboy	26.3	9	40.0	5	25.0	2	11.3	13	62.5	7	31.9	8	23.8
TRS 237	30.0	10	40.0	5	49.5	9	5.0	10	82.0	11	69.4	14	27.8
Martonvasar 2	22.5	8	40.0	5	49.5	9	3.8	9	95.6	15	38.1	11	28.4
Kitakomi-Komugi	64.5	12	40.0	5	49.5	9	10.0	12	82.1	12	57.5	12	36.6
Lerma Rojo 64	78.4	15	--	-	64.5	16	25.0	14	79.5	10	82.8	15	49.8
Sentinel	86.9	16	45.0	13	49.5	9	28.8	16	99.0	16	65.6	13	50.1
Atlas 66	76.1	14	4.0	5	51.4	15	25.0	14	91.1	14	85.6	16	51.8
Rashid	91.6	17	45.0	13	64.8	17	45.0	17	99.0	16	97.9	17	72.1
Mean	35.5		39.4		42.2		9.6		66.3		38.5		27.8
L.S.D. of cultivar means (.05)	47.4		36.0		38.5		21.9		31.6		28.2		14.4
Coefficient of variation (%)	32.2		--		24.0		58.9		18.4		46.9		51.0

[a] These sites are not included in the overall means.

Table 91. Two-year means and rankings of winter survival (%) for 17 cultivars grown in the International Winter Wheat Performance Nursery, 1975 and 1976.

Cultivars	Kabul, Afghanistan		Vienna, Austria		Jokioinen, Finland		Suwon, Korea		Wageningen, Netherlands		Warsaw, Poland	
	%	rank	%	rank	%	rank	%	rank	%	rank	%	rank
Sentinel	70.9	10	98.5	1	90.9	1	100.0	1	90.6	6	86.3	8
Martonvasar 2	83.0	5	96.9	5	74.4	2	100.0	1	88.1	10	88.8	3
Bezostaya 1	84.1	1	94.1	8	64.9	3	99.4	3	92.5	1	89.4	1
Lely	84.1	1	97.3	4	52.6	4	85.6	13	92.5	1	87.5	7
Kormoran	78.9	6	91.6	12	48.5	5	88.1	11	92.5	1	88.8	3
Blueboy	84.1	1	93.3	9	48.0	6	89.4	9	88.1	10	81.3	10
Maris Huntsman	71.1	9	95.0	7	43.3	9	93.8	5	91.9	4	89.4	1
GKF-2	71.3	8	96.6	6	47.3	7	95.6	4	85.6	15	88.1	6
Dunav-1	83.4	4	87.9	13	43.8	8	93.8	5	89.4	9	78.8	13
Kitakomi-Komugi	69.3	12	98.0	3	18.9	11	88.8	10	87.5	12	88.8	3
Maris Templar	78.0	7	98.5	1	3.4	12	90.0	8	91.3	5	81.3	10
Biserka	63.8	14	91.9	10	0.3	15	90.6	7	85.6	15	86.3	8
TRS 237	70.3	11	75.4	16	27.8	10	88.1	11	87.5	12	66.9	15
Talent	67.3	13	91.9	10	0.8	14	83.8	14	87.5	12	81.3	10
Atlas 66	61.3	16	78.1	14	1.1	13	76.3	15	90.0	7	75.6	14
Rashid	61.9	15	65.6	17	0.0	16	56.9	16	90.0	7	51.6	16
Lerma Rojo 64	61.3	16	78.1	14	0.0	16	38.1	17	79.4	17	47.6	17
Mean	73.2		89.9		33.3		85.8		88.8		79.8	
L.S.D. of cultivar means (.05)	24.9		18.4		58.5		21.5		7.2		35.9	
Coefficient of variation (%)	21.1		10.2		31.1		6.9		1.8		8.1	

Table 91. Two-year means and rankings of winter survival (%) for 17 cultivars grown in the International Winter Wheat Performance Nursery, 1975 and 1976. Concluded.

Cultivars	Ithaca, New York USA		Stillwater, Oklahoma USA		Krasnodar, USSR		Odessa, USSR		Zagreb, Yugoslavia		Cultivar mean over 11 sites
	%	rank	%	rank	%	rank	%	rank	%	rank	%
Sentinel	80.3	2	100.0	1	100.0	1	100.0	1	95.4	14	92.0
Martonvasar 2	78.6	4	100.0	1	100.0	1	95.8	10	97.1	7	91.0
Bezostaya 1	81.4	1	100.0	1	88.6	10	99.1	5	97.5	5	90.1
Lely	80.3	2	100.0	1	100.0	1	96.6	8	96.0	12	88.3
Kormoran	77.8	7	100.0	1	100.0	1	93.1	12	96.4	10	86.7
Blueboy	73.4	11	100.0	1	100.0	1	98.4	6	97.3	6	86.5
Maris Huntsman	77.3	8	100.0	1	88.6	10	99.6	2	98.4	2	86.2
GKF-2	78.4	6	100.0	1	88.6	10	96.6	8	98.3	3	86.0
Dunav-1	78.5	5	100.0	1	94.3	6	92.1	13	96.6	9	85.2
Kitakomi-Komugi	70.4	12	100.0	1	94.3	6	95.6	11	98.1	4	82.6
Maris Templar	68.1	13	100.0	1	74.4	13	99.4	4	97.1	7	80.2
Biserka	73.8	10	100.0	1	66.4	14	99.6	2	98.9	1	78.0
TRS 237	59.8	14	100.0	1	94.3	6	97.9	7	86.8	17	77.5
Talent	76.6	9	100.0	1	59.4	15	87.8	15	96.4	10	75.9
Atlas 66	36.9	15	100.0	1	94.3	6	89.3	14	94.1	15	72.2
Rashid	6.5	16	13.8	16	36.0	16	49.0	16	91.6	16	47.7
Lerma Rojo 64	1.8	17	2.5	17	28.6	17	37.1	17	95.8	13	42.9
Mean	64.7		89.2		82.8		89.8		96.0		79.3
L.S.D. of cultivar means (.05)	21.7		10.0		41.7		38.4		9.0		13.1
Coefficient of variation (%)	14.1		1.0		4.5		3.5		2.8		9.5

Table 92. Two-year means and rankings of date of flowering (days from Jan. 1) for 17 cultivars grown in the International Winter Wheat Performance Nursery, 1975 and 1976.

Cultivars	Kabul, Afghanistan		Bordenave, Argentina		Vienna, Austria		Tolbukhin, Bulgaria		Male Ripnany, Czechoslovakia		Sedlec, Czechoslovakia		Cambridge, England	
	date	rank	date	rank	date	rank	date	rank	date	rank	date	rank	date	rank
Lerma Rojo 64	146	2	283	1	141	1	137	1	146	7	158	1	141	1
Rashid	148	3	283	2	143	5	142	3	144	1	161	7	141	1
Biserka	150	5	289	3	142	3	142	3	145	2	159	3	146	3
Kitakomi-Komugi	144	1	289	4	142	2	143	5	145	6	158	1	146	3
GKF-2	150	6	290	5	143	4	143	6	145	2	160	4	149	6
TRS 237	151	9	292	6	144	6	143	6	145	2	161	6	149	7
Dunav-1	148	4	293	7	144	7	145	8	145	2	160	5	151	9
Talent	152	10	295	8	147	9	146	9	146	7	164	11	154	10
Martonvasar 2	151	8	298	10	147	8	146	9	147	9	162	10	156	13
Bezostaya 1	151	7	299	11	149	11	148	11	148	10	162	9	148	5
Sentinel	153	11	301	13	148	10	139	2	149	13	161	7	154	11
Blueboy	153	12	296	9	149	12	149	12	148	12	166	12	154	12
Atlas 66	155	13	299	12	151	13	150	13	148	10	167	13	149	8
Kormoran	159	14	313	15	158	15	157	15	155	16	169	15	158	14
Maris Huntsman	163	16	315	16	157	14	157	14	154	14	170	16	163	16
Maris Templar	163	15	315	17	159	16	159	16	155	15	169	14	163	17
Lely	165	17	313	14	160	17	160	17	156	17	172	17	160	15
Mean	153.1		297.8		148.4		147.2		418.0		163.4		151.6	
L.S.D. of cultivar means (.05)	4.4		9.0		2.6		9.1		4.4		2.5		9.6	
Coefficient of variation (%)	1.9		1.1		0.7		--		--		0.6		0.5	

Table 92. Two-year means and rankings of date of flowering (days from Jan. 1) for 17 cultivars grown in the International Winter Wheat Performance Nursery, 1975 and 1976. Continued.

Cultivars	Martonvasar, Hungary		Szeged, Hungary		Hamadan, Iran		Karaj,[a/] Iran		Sulaimaniya, Iraq		Milano, Italy		Morioka,[a/] Japan	
	date	rank	date	rank	date	rank	date	rank	date	rank	date	rank	date	rank
Lerma Rojo 64	143	1	142	1	149	4	122	1	117	1	129	1	--	
Rashid	144	3	146	6	148	1	123	2	119	2	135	3	--	
Biserka	145	4	145	2	148	2	126	3	126	3	134	2	155	3
Kitakomi-Komugi	144	2	145	3	150	10	126	4	126	4	135	4	154	1
GKF-2	145	6	145	3	149	4	128	5	128	6	136	6	156	4
TRS 237	145	5	147	7	149	7	128	6	129	7	136	7	157	7
Dunav-1	145	7	146	5	149	8	128	7	128	5	136	5	155	2
Talent	147	9	148	8	150	12	130	9	133	12	139	12	159	9
Martonvasar 2	147	9	148	9	150	10	132	11	131	8	138	8	157	8
Bezostaya 1	147	9	149	10	150	12	133	12	133	10	138	9	157	6
Sentinel	147	8	149	11	149	3	131	10	133	11	139	11	156	5
Blueboy	148	12	151	12	149	8	133	12	131	9	140	13	159	9
Atlas 66	149	13	152	13	149	4	130	8	135	13	138	10	160	11
Kormoran	153	14	157	14	156	14	140	14	145	15	144	14	164	12
Maris Huntsman	154	15	158	15	156	15	144	15	145	14	145	16	166	13
Maris Templar	155	16	160	16	156	16	144	16	146	16	144	15	169	14
Lely	155	17	161	17	156	17	145	17	148	17	147	17	169	14
Mean	147.6		149.9		150.7		132.0		132.5		138.4		159.3	
L.S.D. of cultivar means (.05)	3.3		3.8		3.6		2.2		5.1		2.2		4.3	
Coefficient of variation (%)	0.6		0.8		0.6		0.2		1.6		0.8		0.5	

[a/] These sites are not included in the overall means.

Table 92. Two-year means and rankings of date of flowering (days from Jan. 1) for 17 cultivars grown in the International Winter Wheat Performance Nursery, 1975 and 1976. Continued.

Cultivars	Amman, Jordan		Suwon, Korea		Toluca, Mexico		Kathmandu, Nepal		Wageningen, Netherlands		Warsaw, Poland		Fundulea, Romania	
	date	rank	date	rank	date	rank	date	rank	date	rank	date	rank	date	rank
Lerma Rojo 64	129	1	138	1	149	1	87	1	154	1	155	1	141	1
Rashid	129	2	138	2	156	2	105	2	156	5	156	4	143	3
Biserka	135	8	140	4	165	3	121	3	155	3	155	2	143	3
Kitakomi-Komugi	133	3	140	3	167	6	124	7	155	2	156	3	143	2
GKF-2	134	6	141	7	165	4	125	8	156	6	156	5	144	5
TRS 237	133	5	141	5	165	4	123	5	157	7	157	7	144	6
Dunav-1	135	8	141	5	178	12	123	4	156	4	157	6	145	7
Talent	135	11	142	9	171	9	126	10	159	11	160	10	148	10
Martonvasar 2	135	7	144	10	174	10	129	11	158	8	160	9	146	9
Bezostaya 1	135	12	149	13	177	11	131	12	158	9	163	12	148	10
Sentinel	136	13	142	8	180	13	131	13	158	9	160	8	146	8
Blueboy	133	4	145	11	170	8	125	8	160	12	164	13	148	10
Atlas 66	135	8	145	12	169	7	124	6	161	13	162	11	149	13
Kormoran	145	15	151	14	196	16	139	16	164	16	167	16	155	14
Maris Huntsman	146	16	154	15	191	14	132	15	163	15	166	15	157	15
Maris Templar	146	17	154	16	196	15	132	14	163	14	166	14	157	15
Lely	145	14	154	17	201	17	139	17	166	17	168	17	158	17
Mean	136.3		144.6		174.8		124.5		158.7		160.5		147.6	
L.S.D. of cultivar means (.05)	13.3		7.5		9.7		8.1		2.2		2.4		1.8	
Coefficient of variation (%)	1.8		2.2		1.7		1.3		0.8		0.6		--	

Table 92. Two-year means and rankings of date of flowering (days from Jan. 1) for 17 cultivars grown in the International Winter Wheat Performance Nursery, 1975 and 1976. Continued.

Cultivars	Bethlehem, South Africa		Zurich, Switzerland		Erzurum, Turkey		Eskisehir, Turkey		Davis, California USA		Rowan County, North Carolina USA		Stillwater, Oklahoma USA[a]	
	date	rank	date	rank	date	rank	date	rank	date	rank	date	rank	date	rank
Lerma Rojo 64	273	1	150	1	174	3	147	1	128	1	114	8	--	
Rashid	276	2	152	3	174	5	151	5	130	2	110	4	--	
Biserka	287	3	151	2	172	1	151	3	140	3	107	1	109	1
Kitakomi-Komugi	288	5	152	4	173	2	150	2	142	4	110	2	111	2
GKF-2	293	6	152	4	176	7	151	3	143	5	112	6	112	3
TRS 237	287	4	154	7	176	7	153	7	144	6	114	7	115	7
Dunav-1	294	9	152	6	174	4	152	6	145	7	111	5	113	4
Talent	295	11	157	9	177	9	154	11	147	8	110	2	114	6
Martonvasar 2	293	7	158	11	177	10	154	9	149	9	115	11	114	5
Bezostaya 1	295	12	157	10	178	11	153	7	149	9	115	10	116	8
Sentinel	295	12	155	8	175	6	154	10	154	13	119	13	119	10
Blueboy	293	7	160	13	179	13	157	13	151	11	114	9	116	9
Atlas 66	294	9	159	12	178	12	156	12	154	12	115	12	127	11
Kormoran	314	15	164	16	183	14	164	16	160	14	125	14	131	12
Maris Huntsman	314	14	164	14	184	15	163	15	162	15	126	15	135	13
Maris Templar	316	16	164	15	184	16	162	14	164	16	127	16	137	15
Lely	320	17	167	17	185	17	165	17	167	17	129	17	136	14
Mean	295.2		156.8		177.5		155.1		148.7		116.1		120.5	
L.S.D. of cultivar means (.05)	7.3		4.3		3.7		4.7		4.9		5.7		13.8	
Coefficient of variation (%)	0.8		0.8		0.6		1.3		1.0		1.1		0.9	

[a] These sites are not included in the overall means.

Table 92. Two-year means and rankings of date of flowering (days from Jan. 1) for 17 cultivars grown in the International Winter Wheat Performance Nursery, 1975 and 1976. Concluded.

Cultivars	Corvallis,[a] Oregon USA		Krasnodar,[a] USSR		Odessa, USSR		Monsheim, West Germany		Weihenstephan, West Germany		Novi Sad, Yugoslavia		Cultivar mean over 30 sites
	date	rank	date	rank	date	rank	date	rank	date	rank	date	rank	days from Jan. 1
Lerma Rojo 64	134	1	--		142	1	139	1	147	1	140	1	148.9
Rashid	137	2	139	5	142	2	140	2	148	3	142	3	151.2
Biserka	138	5	135	1	143	3	140	3	148	2	141	2	153.3
Kitakomi-Komugi	142	8	136	2	143	4	143	4	149	4	142	3	153.9
GKF-2	139	6	137	3	144	6	143	6	149	5	144	6	154.9
TRS 237	141	7	139	5	144	5	143	4	152	8	144	7	155.4
Dunav-1	137	2	139	8	145	7	143	6	152	6	142	3	155.6
Talent	144	10	140	10	147	11	147	9	154	10	145	10	157.9
Martonvasar 2	143	9	140	9	146	8	149	12	155	12	145	8	158.2
Bezostaya 1	138	4	138	4	146	8	150	13	156	13	145	8	158.6
Sentinel	147	13	139	5	147	10	147	8	152	6	146	12	158.7
Blueboy	144	10	140	10	147	11	149	11	155	11	146	11	159.0
Atlas 66	146	12	141	12	148	13	147	10	154	9	147	13	159.4
Kormoran	156	16	146	13	152	15	155	14	164	16	151	14	167.5
Maris Huntsman	153	14	148	14	152	16	155	14	162	14	151	15	167.6
Maris Templar	153	15	149	15	152	14	155	16	163	15	152	16	168.2
Lely	159	17	151	16	154	17	156	17	165	17	158	17	170.3
Mean	143.9		140.8		146.6		147.0		154.4		145.7		158.7
L.S.D. of cultivar means (.05)	8.8		6.9		4.0		3.3		3.9		2.8		2.5
Coefficient of variation (%)	--		--		0.4		0.7		0.3		--		1.0

[a] These sites are not included in the overall means.

Table 93. Two-year means and rankings of date of ripening (days from Jan. 1) for 17 cultivars grown in the International Winter Wheat Performance Nursery, 1975 and 1976.

Cultivars	Bordenave, Argentina		Vienna, Austria		Male Ripnany, Czechoslovakia		Sedlec, Czechoslovakia		Cambridge, England		Martonvasar, Hungary		Hamadan, Iran	
	date	rank	date	rank	date	rank	date	rank	date	rank	date	rank	date	rank
Lerma Rojo 64	337	1	192	1	190	7	202	7	181	1	186	1	185	1
Biserka	339	3	192	4	187	1	199	2	193	3	187	3	192	6
Rashid	339	2	193	5	192	11	203	11	192	2	189	5	192	11
GKF-2	340	4	192	1	188	2	199	1	198	6	189	4	192	8
Kitakomi-Komugi	341	5	192	3	191	9	201	4	198	7	192	11	192	8
Martonvasar 2	343	6	193	5	189	4	201	6	205	12	190	6	192	2
Dunav-1	343	6	194	8	188	2	201	5	198	4	187	2	192	4
Sentinel	346	12	193	7	189	4	200	3	203	10	191	8	192	6
TRS 237	344	9	198	11	189	4	202	10	199	8	191	7	192	12
Bezostaya 1	346	11	195	9	191	9	202	9	198	5	191	8	192	4
Talent	344	10	196	10	191	9	202	8	204	11	192	10	192	2
Blueboy	343	6	200	14	193	13	203	12	207	14	193	12	192	12
Atlas 66	349	13	198	12	194	14	208	14	203	9	193	13	192	8
Kormoran	355	15	200	13	195	16	208	13	206	13	196	14	196	14
Maris Huntsman	356	16	203	15	194	14	209	15	214	17	197	15	196	14
Maris Templar	354	14	205	17	195	16	213	17	213	16	198	17	196	14
Lely	359	17	204	16	192	12	212	16	208	15	197	16	197	17
Mean	345.8		196.3		190.9		203.7		201.1		191.7		192.5	
L.S.D. of cultivar means (.05)	4.8		6.0		6.8		5.5		13.6		3.7		5.3	
Coefficient of variation (%)	0.8		0.6		0.0		0.5		1.2		0.6		2.4	

Table 93. Two-year means and rankings of date of ripening (days from Jan. 1) for 17 cultivars grown in the International Winter Wheat Performance Nursery, 1975 and 1976. Continued.

Cultivars	Karaj,[a] Iran		Sulaimaniya, Iraq		Milano, Italy		Morioka,[a] Japan		Amman, Jordan		Suwon, Korea		Kathmandu, Nepal	
	date	rank	date	rank	date	rank	date	rank	date	rank	date	rank	date	rank
Lerma Rojo 64	172	1	152	1	184	1	--	-	171	4	176	7	133	1
Biserka	173	3	157	4	187	13	198	4	171	3	174	3	148	4
Rashid	172	1	155	2	185	5	--	-	172	5	180	13	136	2
GKF-2	176	5	159	5	185	3	197	2	169	2	174	4	149	5
Kitakomi-Komugi	174	4	157	3	185	7	199	7	173	8	175	5	149	6
Martonvasar 2	178	10	162	8	185	3	200	8	167	1	176	6	151	11
Dunav-1	177	8	159	6	186	10	198	6	174	11	171	1	148	3
Sentinel	177	9	164	11	185	5	198	5	175	13	174	2	154	13
TRS 237	176	5	161	7	186	9	203	10	174	10	177	8	151	10
Bezostaya 1	179	13	163	10	184	2	196	1	173	6	177	8	154	12
Talent	179	12	164	11	185	8	197	3	173	7	177	10	150	9
Blueboy	178	11	162	9	187	14	203	9	173	9	178	12	150	8
Atlas 66	176	5	164	13	187	12	206	12	175	12	177	11	149	7
Kormoran	182	14	173	14	186	11	205	11	177	14	182	14	161	16
Maris Huntsman	184	15	173	15	187	15	208	13	178	15	183	15	154	14
Maris Templar	185	16	174	16	188	16	209	14	178	16	185	17	156	15
Lely	185	17	175	17	188	17	209	15	179	17	184	16	162	17
Mean	177.8		163.1		185.7		201.6		173.6		177.5		150.1	
L.S.D. of cultivar means (.05)	3.9		4.9		3.0		6.1		6.5		5.3		13.9	
Coefficient of variation (%)	0.7		1.2		0.6		2.0		2.4		1.8		1.6	

[a] These sites are not included in the overall means.

Table 93. Two-year means and rankings of date of ripening (days from Jan. 1) for 17 cultivars grown in the International Winter Wheat Performance Nursery, 1975 and 1976. Continued.

Cultivars	Wageningen, Netherlands		Warsaw[a] Poland		Fundulea, Romania		Bethlehem, South Africa		Svalof,[a] Sweden		Erzurum, Turkey		Eskisehir, Turkey	
	date	rank	date	rank	date	rank	date	rank	date	rank	date	rank	date	rank
Lerma Rojo 64	200	1	--	-	174	1	321	1	--	-	208	1	186	1
Biserka	206	3	205	3	178	5	332	3	208	2	208	3	189	2
Rashid	216	13	206	8	178	3	325	2	206	1[b]	210	6	192	7
GKF-2	206	3	204	2	178	3	338	5	211	4	208	2	189	2
Kitakomi-Komugi	204	2	205	4	176	2	338	6	213	6	210	5	192	6
Martonvasar 2	208	6	205	5	180	7	337	4	214	7	211	8	191	4
Dunav-1	213	12	207	10	179	6	343	12	212	5	214	13	192	5
Sentinel	209	7	204	1	180	9	343	11	211	3	209	4	192	7
TRS 237	212	10	206	6	180	7	340	7	214	7	210	7	192	7
Bezostaya 1	207	5	206	6	182	12	341	8	216	11	214	12	193	10
Talent	209	7	206	8	180	10	341	9	216	10	213	10	194	11
Blueboy	212	10	209	13	182	12	342	10	214	9	213	11	195	12
Atlas 66	210	9	208	11	181	11	347	13	219	15	212	9	197	13
Kormoran	218	15	208	11	187	14	354	14	216	11	219	16	198	14
Maris Huntsman	217	14	209	13	188	15	358	15	217	13	219	14	198	15
Maris Templar	219	16	212	16	188	15	361	16	219	16	219	15	201	16
Lely	219	16	210	15	189	17	361	17	218	14	224	17	201	17
Mean	210.6		207.0		181.0		342.5		214.2		212.9		193.5	
L.S.D. of cultivar means (.05)	8.2		2.5		2.6		6.0		--		8.4		3.2	
Coefficient of variation (%)	0.1		0.7		0.5		0.7		--		0.4		0.9	

[a] These sites are not included in the overall means.

[b] One year of data only.

Table 93. Two-year means and rankings of date of ripening (days from Jan. 1) for 17 cultivars grown in the International Winter Wheat Performance Nursery, 1975 and 1976. Concluded.

Cultivars	Stillwater,[a] Oklahoma USA		Krasnodar,[a] USSR		Odessa, USSR		Monsheim, West Germany		Novi Sad, Yugoslavia		Cultivar mean over 20 sites
	date	rank	date	rank	date	rank	date	rank	date	rank	days from Jan. 1
Lerma Rojo 64	--	-	--	-	188	14	183	1	181	1	200.2
Biserka	151	1	174	1	184	1	190	6	181	2	203.5
Rashid	--	-	180	11	188	16	189	4	183	3	204.1
GKF-2	152	2	176	6	184	6	188	2	185	6	204.2
Kitakomi-Komugi	154	4	177	8	184	4	188	2	186	8	204.2
Martonvasar 2	154	3	175	5	185	7	190	5	185	7	205.0
Dunav-1	155	5	177	8	185	8	190	7	184	4	205.7
Sentinel	158	9	175	4	184	4	192	13	184	4	205.9
TRS 237	158	8	176	6	184	3	191	9	186	10	206.7
Bezostaya 1	157	7	174	1	187	11	190	7	186	8	207.1
Talent	156	6	178	10	186	10	191	11	188	11	207.3
Blueboy	159	10	174	1	185	9	191	11	188	11	208.3
Atlas 66	165	12	180	12	187	11	191	9	188	11	208.8
Kormoran	164	11	181	13	188	15	194	14	191	15	213.0
Maris Huntsman	169	13	184	14	187	13	195	17	190	14	213.7
Maris Templar	170	15	186	15	184	1	195	15	192	17	214.5
Lely	169	14	186	16	189	17	195	16	191	16	215.1
Mean	159.3		178.1		185.8		190.7		186.1		207.5
L.S.D. of cultivar means (.05)	3.2		6.4		4.7		4.6		5.6		2.3
Coefficient of variation (%)	0.8		0.1		1.4		0.9		0.0		1.1

[a] These sites are not included in the overall means.

Table 94. Two-year means and rankings of shattering (%) for 17 cultivars grown in the International Winter Wheat Performance Nursery, 1975 and 1976.

Cultivars	Kathmandu, Nepal		Wageningen, Netherlands		Warsaw, Poland		Bethlehem, South Africa		Erzurum, Turkey		Eskisehir, Turkey		Odessa, USSR		Cultivar mean over 7 sites
	%	rank	%	rank	%	rank	%	rank	%	rank	%	rank	%	rank	%
Bezostaya 1	0.1	1	9.4	2	3.1	3	0.0	1	7.3	5	0.0	1	2.4	9	3.2
Sentinel	0.5	2	15.6	16	3.8	6	0.0	1	3.5	2	0.0	1	0.0	1	3.3
Atlas 66	2.9	14	11.9	7	2.5	1	0.0	1	4.9	4	0.0	1	1.3	8	3.3
Lely	1.3	7	11.3	3	3.6	5	0.0	1	11.3	12	0.0	1	0.0	1	3.9
Martonvasar 2	0.8	4	15.0	13	8.0	10	0.0	1	4.6	3	0.0	1	0.0	1	4.1
GKF-2	1.9	10	15.0	13	9.8	12	0.0	1	3.1	1	0.0	1	0.0	1	4.3
TRS 237	1.9	10	13.1	9	2.8	2	0.0	1	11.1	11	0.5	14	0.5	6	4.3
Maris Huntsman	0.9	5	11.3	3	5.6	8	0.0	1	9.5	8	0.0	1	5.4	13	4.7
Blueboy	2.5	13	11.9	7	3.5	4	0.0	1	14.1	15	0.9	15	0.8	7	4.8
Kormoran	0.6	3	11.3	3	5.1	7	0.0	1	13.3	13	0.0	1	4.4	12	4.9
Maris Templar	1.4	9	11.3	3	7.0	9	0.0	1	14.9	17	0.0	1	2.5	10	5.3
Talent	1.3	7	7.5	1	8.6	11	0.0	1	8.1	7	0.0	1	14.4	15	5.7
Lerma Rojo 64	2.1	12	15.0	13	20.1	16	0.0	1	10.0	10	0.0	1	0.0	1	6.8
Rashid	3.1	15	13.8	10	14.0	13	0.0	1	14.1	15	4.4	17	2.5	10	7.4
Dunav-1	0.9	5	14.4	11	16.3	14	0.0	1	13.8	14	0.0	1	8.7	14	7.7
Biserka	7.3	17	14.4	11	19.5	15	5.0	16	8.0	6	0.3	13	17.9	16	10.3
Kitakomi-Komugi	3.9	16	21.9	17	40.6	17	20.1	17	9.6	9	3.8	16	20.3	17	17.2
Mean	1.9		13.2		10.2		1.5		9.5		0.6		4.8		5.9
L.S.D. of cultivar means (.05)	5.0		6.2		18.6		8.3		11.7		4.3		14.0		3.7
Coefficient of variation (%)	138.2		15.3		47.9		84.1		25.9		191.1		28.1		43.0

Table 95. Two-year means and rankings of frost damage (0-9) for 17 cultivars grown in the International Winter Wheat Performance Nursery, 1975 and 1976.

Cultivars	Fundulea, Romania		Eskisehir, Turkey		Cultivar mean over 2 sites
	0-9	rank	0-9	rank	0-9
Sentinel	1	1	5	10	2.8
Kormoran	2	3	4	2	3.0
Bezostaya 1	2	2	5	9	3.1
Lely	3	6	4	1	3.1
GKF-2	2	3	4	4	3.1
Martonvasar 2	2	3	4	6	3.2
Blueboy	3	6	4	4	3.4
Dunav-1	3	8	4	6	3.7
Maris Huntsman	3	8	4	6	3.7
Kitakomi-Komugi	3	10	5	10	3.9
Maris Templar	4	12	4	3	4.0
TRS 237	4	11	5	14	4.4
Atlas 66	5	14	5	12	4.8
Biserka	4	13	5	13	4.8
Talent	5	15	5	14	5.3
Rashid	7	16	6	17	6.4
Lerma Rojo 64	8	17	5	14	6.7
Mean	3.5		4.7		4.1
L.S.D. of cultivar means (.05)	2.1		1.3		2.1
Coefficient of variation (%)	9.1		13.3		12.1

Table 96. Cultivars grown in the Eighth International Winter Wheat Performance Nursery with five check varieties used in a freezing hardiness study in 1975-1976.[1/]

Entry No.	Cultivar	Origin
1	Maris Templar	England
2	Maris Huntsman	England
3	Martonvasar 2	Hungary
4	Dunav-1	Yugoslavia
5	Flavio	Italy
6	GKF-2	Hungary
7	Biserka	Yugoslavia
8	TRS 237	Australia
9	Lely	Netherlands
10	Sentinel	Nebraska
11	Rashid	Iran
12	Kormoran	Germany
13	Kitakomi-Komugi	Japan
14	Talent	France
15	Bezostaya 1	U.S.S.R.
16	Lerma Rojo 64	Mexico
17	Bordenave Puan Sag	Argentina
18	Galiafen	Chile
19	GKF-8001	Hungary
20	Martonvasar 3	Hungary
21	Oasis	Indiana
22	Probstdorfer Karat (WWP7147)	Austria
23	Sage	Kansas
24	Odesskaya 51	U.S.S.R.
25	Priboy	U.S.S.R.
26	F26-70	Romania
27	WA 5829	Washington
28	NE 68719	Nebraska
29	Atlas 66	North Carolina
30	Blueboy	North Carolina
31	Genesee	New York
32	Winoka	South Dakota
33	Kharkov MC 22	U.S.S.R.
34	Arrow	New York
35	Fredrick	Ontario

[1/] Data provided by Drs. E. H. Everson, C. R. Olien, and B. Marchette, Michigan State University, East Lansing, Michigan.

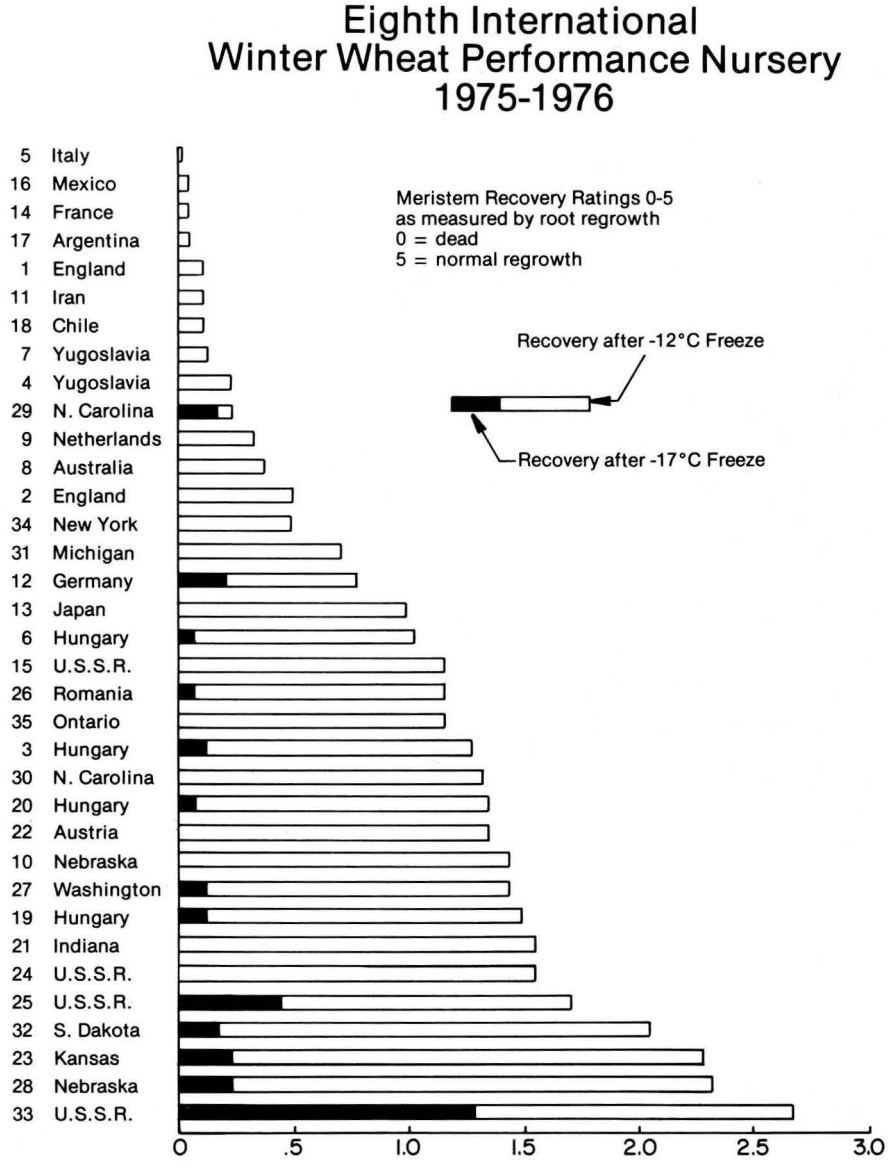

Figure 3. Crown Meristem Ratings of 35 Winter Wheat Cultivars by Country of Origin Under High Intensity Freezing Conditions at -12° and -17°C with 18 replications per test. $LSD_{.05}$ = 0.51 and 0.068 respectively