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FOURTEENTH INTERNATIONAL WINTER WHEAT PERFORMANCE NURSERY, 1982

Preliminary Report

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BEST AVAILABLE

FOURTEENTH INTERNATIONAL WINTER WHEAT PERFORMANCE NURSERY (IWWPN)

1982

Preliminary Report

This report is intended to provide nursery cooperators and others the opportunity to evaluate data from cultivars in the Fourteenth International Winter Wheat Performance Nursery at an early date. It will be useful for field observations and comparisons with current nursery plantings since 17 of the varieties also have been retained in the Fifteenth IWWPN grown in 1983. Included are data on yield and other agronomic traits summarized from 36 cooperating stations in 22 countries.

The authors wish to express their appreciation to nursery cooperators for their excellent nursery management and cooperation in providing nursery data. Their efforts are invaluable to the success of the nursery.

Detailed information from all cooperators concerning each trait on which data were collected and production conditions at each nursery site will be available in a final report at a later date when protein analyses are completed and data from the Southern Hemisphere becomes available. Specific information concerning nursery management and other environmental factors also will be included in that report.

THE NURSERY

The International Winter Wheat Performance Nursery Program was organized in 1969 by the Nebraska Agricultural Experiment Station in cooperation with the Agricultural Research Service, U.S. Department of Agriculture, under a contract with the Agency for International Development, U.S. Department of State.

Evaluation of the performance of important new winter wheat varieties grown in many environments is a prime objective of the nursery. We hope that the nursery will lead to identification of superior winter wheat genotypes for use in breeding wheats with higher productivity and better nutritional quality than are now available. Adaptation limits of varieties based upon their nursery performance can be valuable information for wheat breeders and other researchers.

Wheat varieties evaluated in the IWWPN have come from many different wheat regions of the world. A total of 190 wheat varieties and two varieties of triticale originating from 29 countries have been tested since 1969, including the 1983 nursery. An alphabetical list of these varieties is included in this report in Table 17. Also, the varieties are grouped by country of origin and are shown in Table 18. This list is inclusive of the First through the Fifteenth IWWPN.

We encourage submission of candidate varieties for the nursery by cooperators. Seed of new varieties in the amount of 1000 grams should be sent to Dr. V. A. Johnson at the University of Nebraska before October 15 each year for quarantine increase at Yuma, Arizona. It requires two years after candidate varieties are received at Nebraska before they can be included in the IWWPN since the seed is normally

packaged for mailing before the Arizona harvest is completed. Cultivars grown in the Fourteenth IWWPN are listed in Table 1.

The Fourteenth IWWPN was distributed to 66 locations in 38 countries. There were 58 locations in the Northern Hemisphere and eight in the Southern. A new site was added in the People's Republic of China in 1982. A list of cooperators for the Fourteenth IWWPN is provided in Table 2.

DATA RECEIVED

Data from all locations returning completed field books to Lincoln, Nebraska, by December 31, 1982, are included in this report. Data from field books received after December 31 will be included in the final report at a later date.

Statistical analyses were completed for the most common traits from each location and over locations for selected traits. Individual cooperators will receive computer print-outs with the data analyses for their respective sites. Included in the print-outs are a table of mean values, correlation coefficients, and analyses of variance. Disease data have not been analyzed for this report.

Yield data from each nursery site are reported in Table 3 of this report. Combined analyses over locations are shown for nine traits in Table 4. Correlation coefficients among the traits are presented in Table 7. Tables 8 - 16 contain mean values, statistics, and ranges by trait for the 30 cultivars across test sites.

F29-76 (entry 21) produced the highest average grain yield in 1982. Its yield of 53.2 q/ha was 13.9% higher than the yield of Bezostaya 1 (46.7 q/ha). Averaged over 33 sites, the grand mean yield of the 30 entries was 40.5 q/ha. This compares with 43.9 q/ha over 35 sites in

1981 and 43.8 q/ha over 35 sites in 1980. The reader is reminded that sites included in this preliminary report are not necessarily the same sites each year.

Eight cultivars had overall yields higher than Bezostaya 1, but only F29-76 was statistically significantly higher yielding on the average. This variety ranked first in yield at 11 of the 33 sites. Vala, the second ranked variety was most productive at four sites.

To compare relative yield responses among the locations, correlation coefficients were computed and are reported. Table 5 contains the "r" values among the sites in North America. The correlation coefficients among the European sites are listed in Table 6.

The reader may draw his own conclusions from these comparisons. We welcome feedback on how to improve the utility of the nursery and its statistical summarization. One suggestion for making the data more meaningful is that regional analyses of the data be emphasized rather than analyses over all of the locations. Have you comments as to which sites should be included in a particular region? For example, it can be noted from Table 6 that yield responses at Vienna, Austria, were similar to those in Czechoslovakia and Finland but not to those at Zurich, Switzerland, and Monsheim, West Germany.

Correlation coefficients among nine agronomic characters computed over 33 sites are given in Table 7. Grain yield was most positively correlated with test weight (.63) and winter survival (.53), both significant at the 1% probability level.

Test weight values ranged from 80.3 kg/hl for F29-76 to 68.4 kg/hl for Maris Mardler. Averaged over six sites, the grand mean was 75.8 kg/hl compared with 75.1 kg/hl over 11 sites in 1981. Few sites reporting data in 1982 included test weight.

As in 1981, Balkan had the highest 1000-kernel weight. Averaged over ten sites, its TK weight was 48.8 grams. Sutjeska, Lovrin 32, and Jugoslavija also had seed weights above that of Bezostaya 1. The lowest seed weights belonged to NE 79Y95097 and NE 79Y90576 at 32.9 and 31.4 grams, respectively.

Chokwang and Pai yu pao were the earliest flowering cultivars in 1982. Flowering dates ranged from 142 to 156 days from January 1. Maris Mardler and Bounty required the longest period of time to reach the flowering stage. Ripening dates were similar in sequence to flowering, the correlation coefficient being .87**.

Vega and Maris Mardler were the shortest cultivars in the 1982 nursery, each averaging 69 cm over 19 sites. The tallest varieties averaged 94 cm in height. Brule, Loudogorka, and Bezostaya 1 were among the tallest cultivars. The removal of Atlas 66 helped to reduce the nursery average, this being 81.9 cm in 1982 compared with 87.8 cm in 1981.

Lodging was most frequently reported for Horoshiri-komugi, where at seven sites this variety was 48% lodged on the average. The least amount of lodging occurred in Maris Mardler and Bounty; both short, stiff-strawed wheats.

The 1982 winter survival values varied from 91.7% to 22.0%. Vala was apparently the most hardy variety whereas Takahe survived the least (29.2%) excluding Super X, the spring wheat check. The overall mean of 71.0% was essentially the same as the 1981 average (70.7%).

Frost damage was greatest to Lucero INIA, Super X, and Takahe. The averages for these cultivars over four sites were each a 6 on a 0 - 9 scale. The three had equal frost injury even though Takahe was about five days later in maturity than the other two. Bezostaya 1 and Brule showed the least frost injury.

The results of protein analyses, general nursery information, and disease data will be included in the final report. Harvesting of the Fourteenth IWWPN in the Southern Hemisphere soon should be completed and those data will appear in the final report.

Note to Cooperators

Please check carefully on the accompanying computer print-outs the data for your experiment to verify or correct it. If any errors have occurred, report them to us. This will allow us to correct them for the final report.

We welcome information on address changes or new job assignments, as we try to keep our address lists as current as possible. Updating the cultivar list is also desirable. If your experimental lines have been given official names, we would like to be informed so that the names might appear in the final report.

Table 1. Cultivars grown in the Fourteenth International Winter Wheat Performance Nursery in 1982.

Cultivar	Origin	Pedigree
Vega	Bulgaria	301/S13//Rannaya 12/3/NS 314
Chokwang	Korea	Jaekwang/Norin 72
Balkan (NS 2630-1)	Yugoslavia	Backa/Bezostaya 1//Mironovskaya 808/3/NS 438/4/ Skorospelka 35
Sadovo Super	Bulgaria	Moisson//Yubileina 3/Ppg 186
Bezostaya 1	USSR	Lutescens 17/Skorospelka 2
Phoenix (WW33G)	Australia	Penjamo 62/4*Gabo 56//Tezanos Pintos Precos/Nainari 60 /4/2*Lerma Rojo/Norin 10-Brevor/3/Yaktana 54/Norin10-Brevor//3*Andes
Loudogorka	Bulgaria	Bezostaya 1/Etoile de Choisy
Bounty	England	Maris Ploughman/Durin
Super X	Mexico	Penjamo 62 "S"-Gabo 55 II 8156
Takahe	New Zealand	1066-1/Aotea*7/2/A-Federation/Aotea*7
Pai yu pao	China	Unavailable
Maris Mardler	England	Maris Huntsman/2/Maris Ranger/Durin
Jugoslavija	Yugoslavia	Bezostaya 1/NS 646//Aurora
NE 79Y95097	USA, NE	NB 68719//Nap Hal/CI 13449
NE 79Y90576	USA, NE	Nap Hal/CR 8156/2/TX 62A4793-7/NB 66403
Lovrin 32	Romania	Ranniaia 12/Nadadores 63//Lovrin 12
Horoshiri-komugi	Japan	Minturki/Hitsumi Komugi//Honkei 275/Purcam
MV 22-77	Hungary	Mironovskaya 808/2*Bezostaya 1/3/Bezostaya 1/Produttore //Bezostaya 1
Martonvasari 7	Hungary	Bezostaya 1/Opal
Grana	Poland	Etoile de Choisy/Wysokolitewka Sztywnosloma/2/Dankowska Biala
F29-76	Romania	Aurora/Riley 67
Vala (HE 270-115)	Czechoslovakia	Moisson/Mironovskaya 808
Brule (NE 75414)	USA, NE	(Pnc/3*Cnn//Sk/2*Cnn)/(Seu Seun 27/CI 12500/2/Pn/Cnn/3/ Cnn/Pnc/TK/Cnn)//Gage
Stephens	USA, OR	Nord Desprez/4/Norin 10/Brevor/3/CI 12250/2/Rio/Rex
Sutjeska (NS 18-30)	Yugoslavia	Sava/Aurora
Vratza	Bulgaria	NS 313/Bezostaya 1/3/184-541/2/Bezostaya 1/Elia
Orovcanka	Yugoslavia	Bezostaya 1/L-38
Chasico INTA	Argentina	Buck Manantial/3/Sonora 64A/6*Selkirk//3*Andes
Lucero INIA	Chile	Ofn(Yt 54-Nor 10/B//LR-Mfo) x Vil 53-Vg 9139
Daws	USA, WA	Norin 10/Brevor/3/CI 12250/2/Rio/Rex/4/Odin/5/CI 13431/6/ Elgin 19/Elmar/2/Norin 10/Brevor/3/PI 178383

Table 2. Nursery Sites and Cooperators, 1982.

Country	Station	Cooperator(s)
Afghanistan	Kunduz	Abdul Ahad
Algeria	Algiers	Directeur de Recherche
Argentina	Balcarce	Ing. Agr. Ernesto F. Godoy and Ing. Roberto Bedogni
"	Bordenave	Ing. Agr. Ernesto F. Godoy and Ing. Santiago Garbini
"	Marcos Juarez	Ing. Agr. Ernesto F. Godoy
Austria	Vienna	Drs. R. Hron and H. Foessleitner
Bulgaria	Tolbukhin	Dr. I. Govedarov
Canada	Alberta, Lethbridge	Drs. J. Thomas and M. N. Grant
"	Prince Edward Island	Dr. H. G. Nass
Chile	Chillan	Dr. Ignacio Ramirez A.
"	Temuco	Drs. Ignacio Ramirez A. and Juan Acevedo
China	Beijing	Prof. Yang, Zuo-Min
"	Peking	Dr. Heng Li Wang
"	Wugong	Prof. Zhao, Hong-Zhang
Czechoslovakia	Male Ripnany	Ings. D. Michalik, A. Hlavicka, S. Odler, and Maria Terabkova
"	Sedlec	Ing. J. Schmidt, Ing. Maroslav Maly, and Augustina Vernerova
East Germany	Böehnshausen	Dr. A. Meinel
England	Cambridge	Dr. F. G. H. Lupton and R. H. Oliver
Finland	Jokioinen	Dr. Rolf Manner
France	Orgerus	Drs. J. P. Hardouin and Pierre Benoist
Hungary	Martonvasar	Drs. L. Balla and S. Rajki
"	Szeged	Drs. I. Szaniel and Z. Barabas
Iraq	Sulaimaniya	Dr. Y. Y. Klaimi and A. Alaka
Italy	Milano	Dr. Basilio Borghi
"	Rieti	Drs. G. Zitelli and E. Biancolatte
Japan	Morioka Iwate	Drs. T. Gotoh and Y. Taniguchi
Jordan	Amman	Zulkifl Ghosheh
Korea	Suwon	Dr. Chang Hwan Cho and Yeon Ha Kim
Lebanon	Beirut	Dr. A. Alameddine, A. Chaaban, and M. Chehade
Mexico	Toluca	Dr. S. Rajaram

Table 2. Continued.

Country	Station	Cooperator(s)
Nepal	Kathmandu	Drs. P. S. Rana, L. D. Pant, and K. M. S. Basnet
Netherlands	Wageningen	Dr. A. C. Zeven
Norway	Vollebekk	Dr. Helge Skinnes
Pakistan	Islamabad	Deputy Director of Research, A.R.C.
Peru	Lima	Dr. Marino Romero
Poland	Przeclaw	Dr. E. Bilski
"	Warsaw	Dr. S. Starzycki
Romania	Fundulea	Drs. N. Ceapoiu, G. H. Ittu, and N. N. Saulescu
South Africa*	Bethlehem	Drs. R. Britz and K. W. Packendorf
Spain	Alcala de Henares	Dr. J. Salazar and M. Branas
"	Zaragoza	Ing. J. Comenge
Sweden	Svalof	Dr. Bo Kristiansson
Switzerland	Zurich	Dr. F. Weilenmann
Syria	Aleppo	Dr. Jit Srivastava
Turkey	Ankara	Dr. M. Kiziltan, K. Yakar, G. Mizrak, N. Zencirci, and I. Tutluer
"	Erzurum	Drs. F. Tosun and C. Koycu
"	Eskisehir	Dr. M. K. Haksel, B. Suzen, and T. Cetinel
USA	Davis, CA	Dr. C. O. Qualset, H. E. Vogt, P. K. Zwer, and L. C. Larsen
"	Akron, CO	Drs. J. Quick, G. H. Ellis, and R. Normann
"	Fort Collins, CO	Drs. J. Quick, G. H. Ellis, and R. Normann
"	Brookston, IN	Dr. K. E. Miskin
"	Hutchinson, KS	Drs. E. G. Heyne and G. Paulsen
"	Billings, MT	J. Lenneman
"	Lincoln, NE	Drs. V. A. Johnson and S. L. Kuhr
"	Ithaca, NY	Dr. M. E. Sorrells and W. R. Coffman
"	Rowan Co., NC	Dr. C. F. Murphy
"	Stillwater, OK	Dr. E. L. Smith and H. T. Nguyen
"	Corvallis, OR	Drs. W. E. Kronstad, W. L. McCuistion, F. A. Cholick, and N. H. Scott
"	Lancaster Co., PA	Drs. M. L. Risius and H. G. Marshall
"	Pullman, WA	Drs. C. J. Peterson, Jr. and R. E. Allan
USSR	Krasnodar	Dr. Y. M. Puchkov
"	Mironovski	Dr. V. N. Remeslo
"	Odessa	Drs. L. K. Sechnjak and A. A. Sozinov

Table 2. Concluded.

Country	Station	Cooperator(s)
West Germany	Monsheim	Dr. K. Brunckhorst and F. Bonne
"	Weihenstephan	Dr. G. Fischbeck
Yugoslavia	Novi Sad	Dr. S. Borojevic
"	Zagreb	Drs. Josip Potocanac and R. Mlinar

* Two sets of seed were distributed for different planting dates.

Table 3. Summary of average yield in quintals per hectare and rankings for the 30 cultivars grown in the Fourteenth International Winter Wheat Performance Nursery in 1982.

Cultivars	Herat, Afghanistan[a/]		Vienna, Austria		Prince Edward Island, Canada[a/]		Male Ripnany, Czechoslovakia		Sedlec, Czechoslovakia		Bohnshausen, East Germany[a/]		Jokioinen, Finland	
	q/ha	rank	q/ha	rank	q/ha	rank	q/ha	rank	q/ha	rank	q/ha	rank	q/ha	rank
F29-76	43.1	19	62.3	2	48.4	4	46.3	2	63.9	8	35.1	11	41.8	12
Vala (HE 270-115)	40.2	25	60.0	4	45.0	6	47.6	1	70.2	5	51.4	5	60.8	1
Loudogorka	39.9	26	62.3	2	41.1	9	41.6	8	65.3	7	44.3	7	53.3	7
MV 22-77	46.3	13	56.0	9	48.3	5	38.0	13	68.3	6	53.1	3	43.6	10
Balkan (NS 2630-1)	44.9	15	56.6	8	55.9	1	37.9	15	58.8	11	30.7	12	50.5	8
Lovrin 32	50.0	5	51.5	12	18.8	16	41.8	6	50.4	15	40.3	9	29.6	18
Martonvasari 7	46.6	11	66.3	1	36.2	10	44.1	3	58.0	12	39.5	10	40.9	13
Brule (NE 75414)	41.8	22	59.3	6	19.7	14	42.6	5	72.8	3	50.9	6	31.5	16
Bezostaya 1	41.7	23	49.6	14	50.8	2	38.6	12	59.9	10	42.5	8	49.9	9
Jugoslavija	54.2	2	49.1	15	20.2	13	34.3	22	48.6	18	.	.	57.5	3
Vratza	52.1	3	47.5	17	19.1	15	35.1	21	41.7	22	.	.	30.6	17
Stephens	46.1	14	59.6	5	.	.	41.7	7	71.5	4	.	.	54.1	6
Sutjeska (NS 18-30)	41.0	24	52.1	11	34.5	11	39.7	10	50.7	14	.	.	37.4	14
Horoshiri-komugi	49.3	6	47.4	19	48.7	3	36.8	18	[illegible]	20	51.7	4	35.5	15
Sadovo Super	44.8	16	57.3	7	7.0	19	39.3	11	61.3	9	.	.	43.4	11
Daws	43.1	19	53.2	10	41.9	7	37.5	16	76.8	2	62.3	2	56.2	5
Grana	48.9	8	37.7	22	41.2	8	43.8	4	78.2	1	64.0	1	58.1	2
Bounty	42.4	21	47.5	17	.	.	40.6	9	57.2	13	.	.	56.4	4
Pai yu pao	47.5	10	33.9	25	30.1	12	32.1	24	49.6	16	28.0	14	21.7	21
Phoenix (WW33G)	65.2	1	47.9	16	.	.	35.4	20	5.8	27	.	.	26.1	20
NE 79Y90576	35.2	28	37.0	23	11.4	17	29.9	25	46.9	19	30.2	13	13.9	24
Orovcanka	48.5	9	41.8	20	.	.	35.6	19	21.6	25	.	.	27.9	19
Chokwang	44.6	17	50.2	13	11.1	18	37.0	17	43.4	21	26.0	15	9.6	25
Maris Mardler	44.1	18	36.8	24	.	.	38.0	13	48.9	17	.	.	9.2	26
Vega	51.7	4	39.8	21	.	.	20.6	27	27.1	24	.	.	18.1	23
Chasico INTA	14.1	30	31.8	27	.	.	34.2	23	9.7	26	.	.	0.7	30
NE 79Y95097	46.6	11	33.8	26	.	.	23.3	26	36.7	23	.	.	18.6	22
Lucero INIA	24.3	29	23.0	28	.	.	17.3	28	3.0	28	.	.	5.2	27
Super X	35.3	27	7.7	30	.	.	4.5	30	0.8	29	.	.	1.5	29
Takahe	49.1	7	10.6	29	.	.	10.0	29	0.6	30	.	.	4.6	28
Means	44.1		45.7		35.5		34.9		46.4		43.3		32.9	
LSD of the cultivar means (.05)	16.5		10.2		.		2.0		7.6		10.9		9.7	
Coefficient of variation (%)	17.8		16.0		19.2		4.1		11.7		11.9		21.1	

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

Table 3. Summary of average yield in quintals per hectare and rankings for the 30 cultivars grown in the Fourteenth International Winter Wheat Performance Nursery in 1982.

Cultivars	Orgerus, France		Martonvasar, Hungary		Szeged, Hungary		Milano, Italy		Rieti, Italy		Morioka, Iwate, Japan		Suwon, Korea	
	q/ha	rank	q/ha	rank	q/ha	rank	q/ha	rank	q/ha	rank	q/ha	rank	q/ha	rank
F29-76	78.3	1	135.0	1	71.1	1	95.9	1	58.2	8	49.5	5	49.4	[illegible]
Vala (HE 270-115)	69.9	8	123.1	5	59.5	12	84.7	13	48.4	24	50.7	4	39.2	13
Loudogorka	68.1	11	130.7	2	63.0	4	81.9	19	55.4	11	44.3	7	35.9	16
MV 22-77	67.4	12	118.9	8	58.7	16	86.3	11	57.2	9	35.5	18	34.2	19
Balkan (NS 2630-1)	70.0	7	115.4	10	61.7	7	86.7	10	52.6	17	53.5	1	49.6	3
Lovrin 32	73.6	4	128.4	3	59.1	13	88.5	6	72.4	1	37.5	17	39.8	9
Martonvasari 7	68.4	10	123.1	5	65.4	3	87.5	8	54.5	14	45.0	6	[illegible].1	18
Brule (NE 75414)	60.8	20	117.5	9	59.1	13	82.0	17	50.2	22	18.7	27	[illegible].6	17
Bezostaya 1	64.3	18	107.4	15	59.7	11	83.3	15	54.2	15	43.5	10	[illegible].0	2
Jugoslavija	70.9	5	127.0	4	62.6	5	92.3	3	57.2	9	53.4	2	37.2	14
Vratza	67.2	13	112.8	12	58.2	17	89.8	5	59.2	7	39.2	14	33.2	20
Stephens	74.4	3	104.7	18	59.0	15	87.4	9	50.0	23	44.3	7	14.7	30
Sutjeska (NS 18-30)	66.5	15	121.1	7	66.6	2	83.2	16	51.2	20	43.4	12	40.3	8
Horoshiri-komugi	61.7	19	106.7	16	49.4	23	82.0	17	60.2	4	50.8	3	39.6	10
Sadovo Super	66.9	14	115.0	11	61.7	7	91.1	4	55.1	12	38.5	15	51.1	1
Daws	60.0	21	74.7	25	39.5	27	73.3	27	60.1	5	37.6	16	26.0	23
Grana	55.8	25	87.6	22	50.6	22	74.0	26	43.2	26	34.2	19	29.5	21
Bounty	68.8	9	112.1	13	60.1	10	74.6	25	54.0	16	44.0	9	25.2	25
Pai yu pao	49.9	28	76.7	23	55.6	19	84.4	14	41.5	28	25.8	25	46.7	5
Phoenix (WW33G)	65.2	17	110.2	14	61.0	9	88.3	7	55.1	12	29.1	23	36.8	15
NE 79Y90576	56.4	24	48.9	29	43.7	25	75.8	24	52.4	19	31.5	21	39.5	11
Orovcanka	70.3	6	99.5	19	56.2	18	85.8	12	65.5	2	43.5	10	39.3	12
Chokwang	37.8	30	75.6	24	52.7	20	80.2	21	59.4	6	30.0	22	46.2	6
Maris Mardler	74.6	2	106.3	17	62.1	6	79.9	22	51.0	21	41.9	13	23.3	26
Vega	50.3	27	88.8	21	46.0	24	81.0	20	34.6	30	17.6	29	40.8	7
Chasico INTA	59.1	22	92.1	20	51.5	21	68.7	29	40.1	29	18.4	28	16.5	28
NE 79Y95097	58.3	23	52.4	28	39.0	28	65.6	30	41.9	27	28.4	24	25.9	24
Lucero INIA	49.9	28	53.6	27	39.0	28	76.9	23	52.5	18	33.2	20	29.1	22
Super X	65.8	16	9.3	30	38.5	30	92.9	2	62.0	3	15.0	30	15.0	29
Takahe	52.5	26	54.0	26	42.9	26	69.9	28	43.5	25	22.7	26	18.8	27
Means	63.4		97.7		55.1		82.5		53.1		36.7		34.8	
LSD of the cultivar means (.05)	6.6		14.5		7.6		7.6		11.9		6.5		8.9	
Coefficient of variation (%)	7.4		10.6		9.8		6.6		16.1		12.7		18.2	

Table 3. Summary of average yield in quintals per hectare and rankings for the 30 cultivars grown in the Fourteenth International Winter Wheat Performance Nursery in 1982.

Cultivars	Toluca, Mexico		Vollebekk, Norway		Przeclaw, Poland		Fundulea, Romania		Madrid, Spain		Zaragoza, Spain		Zurich, Switzerland	
	q/ha	rank	q/ha	rank	q/ha	rank	q/ha	rank	q/ha	rank	q/ha	rank	q/ha	rank
F29-76	9.0	29	47.3	13	32.1	5	75.7	1	47.7	13	8.9	20	44.2	24
Vala (HE 270-115)	15.4	18	57.1	5	43.0	1	62.9	12	45.4	16	7.2	23	64.8	1
Loudogorka	14.5	20	46.8	15	31.2	7	68.2	5	47.1	14	6.7	26	58.9	7
MV 22-77	19.0	13	56.0	6	32.0	6	61.0	18	48.2	10	14.0	6	57.3	9
Balkan (NS 2630-1)	13.8	22	58.2	3	30.9	8	61.7	16	42.3	19	12.8	11	59.1	5
Lovrin 32	24.1	6	57.2	4	23.4	11	72.8	3	47.0	15	11.0	18	55.3	15
Martonvasari 7	19.9	11	52.2	8	24.0	10	62.1	14	54.3	2	12.2	14	57.0	10
Brule (NE 75414)	23.5	7	27.7	23	39.3	2	61.9	15	49.8	6	13.3	9	49.9	19
Bezostaya 1	13.9	21	50.0	10	29.0	9	65.9	9	44.6	17	11.9	15	56.6	12
Jugoslavija	15.6	17	47.0	14	1.8	22	68.1	6	49.3	9	7.8	22	62.7	3
Vratza	21.4	10	53.2	7	3.6	19	74.2	2	51.7	5	13.6	8	62.0	4
Stephens	26.7	5	59.9	1	4.2	18	62.2	13	57.8	1	9.4	19	58.8	8
Sutjeska (NS 18-30)	16.9	16	49.5	12	14.5	15	64.0	10	41.7	21	8.2	21	46.2	21
Horoshiri-komugi	18.6	14	51.4	9	32.9	4	53.3	23	33.8	29	13.3	9	56.4	13
Sadovo Super	13.1	24	50.0	10	4.3	17	68.3	4	47.8	12	6.7	26	48.5	20
Daws	28.0	4	44.0	16	33.3	3	57.4	22	42.9	18	11.3	16	50.8	18
Grana	12.9	26	43.0	17	20.0	12	59.6	20	28.2	30	3.7	30	55.5	14
Bounty	11.3	27	59.3	2	0.0	25	50.1	24	41.9	20	5.8	29	56.7	11
Pai yu pao	13.5	23	30.5	22	15.1	14	66.5	8	41.5	22	12.5	12	35.3	26
Phoenix (WW33G)	35.4	1	35.4	20	0.0	25	61.2	17	49.5	7	16.9	2	52.3	16
NE 79Y90576	33.8	2	25.3	24	10.3	16	57.5	21	39.8	23	12.4	13	36.5	25
Orovcanka	5.8	30	37.7	18	0.1	24	64.0	10	49.4	8	15.3	3	46.1	22
Chokwang	29.4	3	37.4	19	18.5	13	67.7	7	35.1	27	14.4	5	27.0	29
Maris Mardler	21.9	9	20.0	26	3.2	20	47.9	26	39.6	24	7.1	24	59.1	5
Vega	22.9	8	31.9	21	2.6	21	60.3	19	38.5	25	7.0	25	26.9	30
Chasico INTA	9.3	28	0.5	30	0.0	25	44.0	28	48.1	11	13.8	7	64.7	2
NE 79Y95097	19.9	11	15.5	27	0.6	23	46.4	27	35.0	28	11.3	16	33.3	28
Lucero INIA	15.0	19	12.8	28	0.0	25	43.5	29	53.3	4	17.1	1	44.4	23
Super X	17.6	15	4.5	29	0.0	25	48.5	25	54.3	2	14.6	4	52.1	17
Takahe	13.0	25	25.3	24	0.0	25	37.6	30	35.4	26	6.0	28	34.6	27
Means	18.5		39.6		15.0		59.8		44.7		10.9		50.4	
LSD of the cultivar means (.05)	6.5		11.5		7.0		6.4		6.8		4.6		6.5	
Coefficient of variation (%)	25.2		20.8		33.1		7.6		10.8		30.5		9.2	

Table 3. Summary of average yield in quintals per hectare and rankings for the 30 cultivars grown in the Fourteenth International Winter Wheat Performance Nursery in 1982.

Cultivars	Aleppo, Syria		Billings, Montana, USA		Lincoln, Nebraska, USA		Ithaca, New York, USA		Rowan County, North Carolina, USA		Stillwater, Oklahoma, USA	
	q/ha	rank	q/ha	rank	q/ha	rank	q/ha	rank	q/ha	rank	q/ha	rank
F29-76	46.2	4	40.4	14	20.9	12	77.7	1	37.3	1	29.4	2
Vala (HE 270-115)	44.0	12	27.8	20	24.7	6	58.7	7	32.4	5	16.7	20
Loudogorka	44.0	12	44.5	11	23.3	9	63.2	3	33.4	4	27.7	3
MV 22-77	46.5	3	53.8	6	25.8	5	61.4	5	30.7	8	19.7	17
Balkan (NS 2630-1)	41.4	17	31.3	19	26.3	4	66.6	2	31.4	7	22.6	7
Lovrin 32	44.9	8	56.2	3	24.2	7	52.1	9	30.7	8	27.4	4
Martonvasari 7	48.5	1	56.9	1	17.6	13	50.8	10	29.9	12	20.3	14
Brule (NE 75414)	44.3	11	55.2	4	22.0	10	49.5	11	37.1	2	30.1	1
Bezostaya 1	44.7	10	40.0	15	23.9	8	46.7	13	26.6	16	20.0	16
Jugoslavija	39.9	20	41.0	13	30.1	1	53.5	8	29.6	13	23.8	5
Vratza	44.9	8	45.1	9	27.1	3	61.1	6	32.1	6	22.1	9
Stephens	46.1	5	56.6	2	10.2	17	31.5	18	27.6	14	11.7	27
Sutjeska (NS 18-30)	45.9	7	23.2	24	28.6	2	62.4	4	30.6	10	21.7	13
Horoshiri-komugi	33.2	30	48.8	7	21.4	11	49.4	12	30.5	11	22.0	10
Sadovo Super	40.9	19	38.1	16	15.7	16	41.2	15	19.9	24	16.5	21
Daws	41.0	18	54.4	5	9.2	20	29.8	20	27.6	14	15.4	22
Grana	42.3	14	44.8	10	10.2	17	46.3	14	33.8	3	13.6	25
Bounty	39.3	21	33.5	18	5.2	22	40.5	16	20.8	22	7.3	28
Pai yu pao	41.7	15	43.3	12	9.5	19	34.5	17	20.2	23	22.0	10
Phoenix (WW33G)	41.6	16	24.5	23	2.8	25	16.7	23	21.9	19	22.8	6
NE 79Y90576	46.0	6	47.9	8	16.1	15	28.2	21	21.7	20	22.6	7
Orovcanka	39.0	22	36.1	17	3.2	23	6.0	26	16.3	28	15.1	23
Chokwang	33.9	29	20.7	26	7.1	21	30.7	19	18.3	26	20.3	14
Maris Mardler	34.0	28	25.2	22	0.9	27	12.7	24	20.9	21	6.3	29
Vega	47.9	2	21.7	25	16.7	14	23.0	22	25.0	17	14.4	24
Chasico INTA	38.2	23	17.1	27	0.0	29	5.3	27	23.0	18	21.8	12
NE 79Y95097	37.3	25	26.2	21	3.0	24	9.8	25	18.1	27	17.1	19
Lucero INIA	37.5	24	8.2	28	0.0	29	1.5	29	14.4	29	13.0	26
Super X	35.0	27	4.0	29	0.2	28	0.8	30	12.7	30	19.0	18
Takahe	36.0	26	2.6	30	1.8	26	3.5	28	19.0	25	4.1	30
Means	41.5		35.6		14.3		37.2		25.8		18.9	
LSD of the cultivar means (.05)	7.8		12.5		5.3		10.4		5.6		4.2	
Coefficient of variation (%)	13.4		25.0		26.5		17.1		15.5		15.9	

Table 3. Summary of average yield in quintals per hectare and rankings for the 30 cultivars grown in the Fourteenth International Winter Wheat Performance Nursery in 1982.

Cultivars	Lancaster Co., Pennsylvania, USA		Pullman, Washington, USA		Krasnodar, USSR		Mironovski, USSR		Odessa, USSR		Monsheim, West Germany	
	q/ha	rank	q/ha	rank	q/ha	rank	q/ha	rank	q/ha	rank	q/ha	rank
F29-76	48.4	3	54.3	6	47.6	1	34.3	1	57.3	1	57.2	8
Vala (HE 270-115)	43.6	8	57.1	2	42.5	5	31.0	4	54.0	2	57.3	7
Loudogorka	46.1	5	59.5	1	36.7	14	28.4	5	30.8	18	59.2	5
MV 22-77	44.0	7	56.7	3	42.6	4	24.2	8	50.6	4	59.6	4
Balkan (NS 2630-1)	37.0	14	49.2	7	46.2	2	33.1	3	40.9	8	51.1	21
Lovrin 32	42.1	9	32.8	12	41.1	8	18.8	13	38.7	9	56.4	9
Martonvasari 7	39.5	12	28.6	14	41.3	7	17.0	15	33.9	14	60.3	3
Brule (NE 75414)	47.8	4	46.9	9	37.1	13	33.5	2	51.9	3	54.3	14
Bezostaya 1	39.4	13	55.4	4	41.6	6	26.6	6	27.7	20	53.4	17
Jugoslavija	52.9	1	15.5	23	43.2	3	0.0	20	33.0	16	54.1	15
Vratza	49.8	2	27.2	16	34.5	16	0.0	20	45.1	5	52.7	18
Stephens	22.0	25	18.8	21	32.8	18	6.6	18	45.1	5	58.6	6
Sutjeska (NS 18-30)	44.9	6	24.6	17	41.1	8	23.3	9	32.1	17	55.1	11
Horoshiri-komugi	40.2	10	47.2	8	37.7	12	26.1	7	37.2	11	55.5	10
Sadovo Super	36.5	15	27.6	15	33.7	17	6.4	19	45.0	7	55.0	13
Daws	27.8	21	54.6	5	20.8	22	16.4	16	28.0	19	60.9	2
Grana	33.2	18	39.9	10	36.0	15	21.8	10	22.7	22	52.4	20
Bounty	22.4	24	8.5	27	22.3	21	0.0	20	26.2	21	55.1	11
Pai yu pao	35.8	16	31.5	13	39.6	10	20.6	11	36.9	12	31.6	29
Phoenix (WW33G)	39.9	11	7.3	28	0.0	23	0.0	20	10.6	25	48.1	24
NE 79Y90576	24.8	23	33.3	11	29.0	20	12.6	17	35.9	13	45.9	26
Orovcanka	33.3	17	16.4	22	0.0	23	0.0	20	0.0	27	50.1	22
Chokwang	32.4	19	24.0	18	32.0	19	18.8	13	37.7	10	16.6	30
Maris Mardler	15.6	26	15.4	24	0.0	23	0.0	20	4.1	26	61.6	1
Vega	27.1	22	22.5	19	38.1	11	20.6	11	33.5	15	37.9	28
Chasico INTA	29.5	20	4.5	30	0.0	23	0.0	20	0.0	27	48.9	23
NE 79Y95097	13.6	27	22.2	20	0.0	23	0.0	20	14.5	23	46.6	25
Lucero INIA	0.0	28	10.9	26	0.0	23	0.0	20	0.0	27	52.6	19
Super X	0.0	28	12.0	25	0.0	23	0.0	20	0.0	27	53.6	16
Takahe	0.0	28	6.3	29	0.0	23	0.0	20	14.1	24	41.6	27
Means	32.3		30.4		27.2		14.0		29.6		51.4	
LSD of the cultivar means (.05)	11.5		11.9		5.3		7.4		3.6		4.8	
Coefficient of variation (%)	20.8		28.1		13.8		37.6		8.6		6.6	

Table 3. Summary of average yield in quintals per hectare and rankings for the 30 cultivars grown in the Fourteenth International Winter Wheat Performance Nursery in 1982.

Cultivars	Weihenstephan, West Germany		Novi Sad, Yugoslavia		Zagreb, Yugoslavia		Cultivar means over 33 sites
	q/ha	rank	q/ha	rank	q/ha	rank	q/ha
F29-76	72.5	6	75.9	2	44.1	1	53.2
Vala (HE 270-115)	72.7	4	65.4	14	35.4	5	50.7
Loudogorka	67.8	12	70.6	8	34.9	6	49.8
MV 22-77	69.2	11	61.1	18	31.7	13	49.3
Balkan (NS 2630-1)	70.3	9	63.0	16	28.0	20	48.8
Lovrin 32	65.0	17	73.6	5	41.2	2	48.8
Martonvasari 7	72.7	4	69.9	9	31.9	12	48.2
Brule (NE 75414)	58.1	25	62.2	17	33.1	10	47.2
Bezostaya 1	60.7	23	69.2	10	30.7	14	46.7
Jugoslavija	67.6	13	77.2	1	37.2	4	46.6
Vratza	73.0	3	71.9	7	30.7	14	45.7
Stephens	77.4	1	72.6	6	33.4	8	45.5
Sutjeska (NS 18-30)	65.7	16	75.5	3	38.6	3	45.5
Horoshiri-komugi	66.3	15	58.0	23	33.1	10	44.9
Sadovo Super	70.4	8	74.2	4	34.0	7	44.8
Daws	67.2	14	55.8	24	33.2	9	42.8
Grana	64.2	19	66.9	12	18.1	25	41.3
Bounty	74.4	2	60.3	20	29.4	16	39.9
Pai yu pao	54.1	29	63.1	15	17.7	26	37.5
Phoenix (WW33G)	62.9	20	68.6	11	22.6	23	36.6
NE 79Y90576	59.7	24	58.1	22	17.1	27	36.2
Orovcanka	69.4	10	65.8	13	28.6	18	36.2
Chokwang	55.2	26	39.5	29	19.8	24	35.2
Maris Mardler	72.2	7	61.0	19	28.0	20	34.5
Vega	55.2	26	41.5	28	10.8	29	33.2
Chasico INTA	62.2	21	58.7	21	28.3	19	28.7
NE 79Y95097	54.2	28	45.5	26	16.4	28	27.8
Lucero INIA	62.2	21	45.3	27	27.6	22	25.9
Super X	64.7	18	49.0	25	29.3	17	24.1
Takahe	49.5	30	11.2	30	10.4	30	21.0
Means	65.2		61.1		28.5		40.5
LSD of the cultivar means (.05)	4.6		7.8		7.6		5.0
Coefficient of variation (%)	5.0		9.1		19.1		14.1

Table 4. Summary of agronomic data for the 30 cultivars in the Fourteenth International Winter Wheat Performance Nursery grown in 1982.

Cultivars	Yield		Test weight		1000-kernel weight		Days to flowering from Jan. 1		Days to ripening from Jan. 1	
	q/ha	% of Bez. 1	kg/hl	rank	g	rank		rank		rank
Number of sites	33		6		10		15		10	
F29-76	53.2	113.9	80.3	1	40.4	19	150	19	194	16
Vala (HE 270-115)	50.7	108.6	74.0	23	41.9	16	150	19	194	16
Loudogorka	49.8	106.6	77.5	11	43.9	8	149	15	195	20
MV 22-77	49.3	105.6	77.3	12	41.7	17	149	15	192	10
Balkan (NS 2630-1)	48.8	104.5	77.9	8	48.8	1	148	11	191	6
Lovrin 32	48.8	104.5	78.2	6	46.7	3	148	11	195	20
Martonvasari 7	48.2	103.2	76.6	15	43.0	11	149	15	195	20
Brule (NE 75414)	47.2	101.1	77.1	14	35.4	28	150	19	194	16
Bezostaya 1	46.7	100.0	79.3	2	45.1	5	149	15	193	12
Jugoslavija (NS 269	46.6	99.8	77.8	9	46.1	4	150	19	193	12
Vratza	45.7	97.9	75.9	18	43.5	10	145	5	189	4
Stephens	45.5	97.4	71.0	27	42.3	15	152	25	197	25
Sutjeska (NS 18-30)	45.5	97.4	76.5	16	48.0	2	151	24	195	20
Horoshiri-komugi	44.9	96.1	78.2	6	42.8	12	150	19	194	16
Sadovo Super	44.8	95.9	74.7	21	40.8	18	147	8	193	12
Daws	42.8	91.6	73.8	25	37.2	25	154	27	197	25
Grana	41.3	88.4	74.3	22	44.3	7	154	27	200	30
Bounty	39.9	85.4	68.8	29	39.2	20	156	29	199	28
Pai yu pao	37.5	80.3	77.2	13	35.6	27	142	1	186	1
Phoenix (WW33G)	36.6	78.4	78.5	4	38.1	23	144	3	191	6
NE 79Y90576	36.2	77.5	75.5	19	31.4	30	144	3	188	3
Orovcanka	36.2	77.5	76.3	17	44.4	6	145	5	191	6
Chokwang	35.2	75.4	78.5	4	42.6	13	142	1	186	1
Maris Mardler	34.5	73.9	68.4	30	42.5	14	156	29	199	28
Vega	33.2	71.1	75.4	20	43.6	9	146	7	190	5
Chasico INTA	28.7	61.5	79.0	3	39.0	21	148	11	196	24
NE 79Y95097	27.8	59.5	70.8	28	32.9	29	147	8	191	6
Lucero INIA	25.9	55.5	73.9	24	38.8	22	148	11	193	12
Super X	24.1	51.6	77.7	10	37.8	24	147	8	192	10
Takahe	21.0	45.0	73.7	26	36.7	26	152	25	197	25
Means	40.5	86.8	75.8		41.2		148.7		193.3	
LSD (.05) of the cultivar means	5.0		2.6		2.3		2.3		2.7	
Coefficient of variation (%)	14.1		1.5		3.2		0.9		0.9	

Table 4. Summary of agronomic data for the 30 cultivars in the Fourteenth International Winter Wheat Performance Nursery grown in 1982.

Cultivars	Plant height		Lodging		Winter survival		Frost damage	
	cm	rank	%	rank	%	rank	(0-9)	rank
Number of sites	19		7		20		4	
F29-76	85	19	9	3	89.2	5	3	4
Vala (HE 270-115)	81	14	14	9	91.7	1	3	4
Loudogorka	93	27	22	23	88.7	7	3	4
MV 22-77	80	11	10	4	87.9	8	3	4
Balkan (NS 2630-1)	80	11	12	6	89.0	6	3	4
Lovrin 32	83	17	21	22	78.8	14	3	4
Martonvasari 7	90	25	19	19	79.4	13	3	4
Brule (NE 75414)	93	27	35	28	85.6	11	2	1
Bezostaya 1	93	27	24	25	89.4	4	2	1
Jugoslavija (NS 269	85	19	15	11	70.6	20	3	4
Vratza	73	3	15	11	74.0	19	3	4
Stephens	80	11	19	19	75.8	17	3	4
Sutjeska (NS 18-30)	85	19	14	9	80.2	12	4	19
Horoshiri-komugi	88	23	48	30	90.9	2	3	4
Sadovo Super	81	14	12	6	75.5	18	3	4
Daws	81	14	16	14	90.9	2	2	1
Grana	90	25	19	19	78.3	16	4	19
Bounty	73	3	8	2	65.0	21	4	19
Pai yu pao	77	9	15	11	87.7	9	3	4
Phoenix (WW33G)	74	6	23	24	54.5	23	4	19
NE 79Y90576	88	23	25	26	78.8	14	3	4
Orovcanka	73	3	10	4	52.9	25	4	19
Chokwang	76	7	35	28	86.6	10	3	4
Maris Mardler	69	1	6	1	50.4	26	5	26
Vega	69	1	16	14	61.8	22	4	19
Chasico INTA	94	30	27	27	40.0	27	5	26
NE 79Y95097	76	7	18	18	53.0	24	4	19
Lucero INIA	84	18	17	17	32.2	28	6	28
Super X	78	10	13	8	22.0	30	6	28
Takahe	87	22	16	14	29.2	29	6	28
Means	81.9		18.4		71.0		3.4	
LSD (.05) of the cultivar means	2.8		11.7		11.0		1.5	
Coefficient of variation (%)	4.0		51.1		13.8		17.5	

Table 5. Comparison of yield response of the 30 cultivars in the Fourteenth International Winter Wheat Performance Nursery among sites in North America as measured by simple correlation coefficients.

	Toluca, Mexico	Billings, Montana	Lincoln, Nebraska	Ithaca, New York	Rowan County, North Carolina	Stillwater, Oklahoma	Lancaster County, Pennsylvania	Pullman, Washington
Prince Edward Island, Canada	-.51*	.00	.23	.50*	.50*	-.11	.10	.74**
Toluca, Mexico		.21	-.01	-.10	-.01	.12	-.01	-.03
Billings, Montana			.54**	.60**	.63**	.41*	.63**	.57**
Lincoln, Nebraska				.89**	.79**	.58**	.79**	.65**
Ithaca, New York					.86**	.55**	.82**	.72**
Rowan County, North Carolina						.53**	.76**	.69**
Stillwater, Oklahoma							.70**	.47**
Lancaster County, Pennsylvania								.55**

* Significant at the .05 probability level.
** Significant at the .01 probability level.

Table 6. Comparison of yield responses among European sites for the entries in the Fourteenth International Winter Wheat Performance Nursery as measured by correlation coefficients.

	Male Ripnany, Czechoslovakia	Sedlec, Czechoslovakia	Böhnshausen, East Germany	Jokioinen, Finland	Orgerus, France	Martonvasar, Hungary	Szeged, Hungary	Milano, Italy	Rieti, Italy	Vollebekk, Norway	Przeclaw, Poland
Vienna, Austria	.88**	.76**	.10	.73**	.46*	.84**	.73**	.41*	.27	.77**	.62**
Male Ripnany, Czechoslovakia		.78**	.39	.70**	.45*	.83**	.75**	.25	.22	.68**	.58**
Sedlec, Czechoslovakia			.74**	.79**	.33	.56**	.47**	.16	.09	.68**	.68**
Böhnshausen, East Germany				.67**	.19	.15	-.30	-.41	-.04	.23	.51
Jokioinen, Finland					.49**	.64**	.51**	.28	.18	.83**	.52**
Orgerus, France						.60**	.63**	.54**	.43*	.46*	.15
Martonvasar, Hungary							.89**	.44*	.22	.72**	.44*
Szeged, Hungary								.59**	.23	.62**	.31
Milano, Italy									.53**	.44*	.17
Rieti, Italy										.37*	.21
Vollebekk, Norway											.48**

* Significant at the .05 probability level.
** Significant at the .01 probability level.

Table 6. Comparison of yield responses among European sites for the entries in the Fourteenth International Winter Wheat Performance Nursery as measured by correlation coefficients.

	Fundulea, Romania	Madrid, Spain	Zaragoza, Spain	Zurich, Switzerland	Krasnodar, USSR	Mironovski, USSR	Odessa, USSR	Monsheim, West Germany	Weihenstephan, West Germany	Novi Sad, Yugoslavia	Zagreb, Yugoslavia
Vienna, Austria	.71**	.22	-.13	.35	.71**	.58**	.72**	.34	.55**	.68**	.60**
Male Ripnany, Czechoslovakia	.62**	.05	-.22	.47**	.60**	.51**	.58**	.34	.56**	.74**	.57**
Sedlec, Czechoslovakia	.54**	-.09	-.43*	.30	.74**	.63**	.73**	.36	.44*	.55**	.42*
Böhnhausen, East Germany	-.46	-.13	-.44	.60*	-.27	.08	-.16	.62*	.32	.14	.23
Jokioinen, Finland	.51**	.07	-.43	.51**	.65**	.45*	.56**	.50**	.59**	.61**	.50**
Orgerus, France	.32	.48**	-.20	.69**	.19	.04	.20	.80**	.80**	.68**	.73**
Martonvasar, Hungary	.63**	.20	-.26	.52**	.61**	.43*	.55**	.42*	.56**	.70**	.63**
Szeged, Hungary	.65**	.29	-.23	.44*	.55**	.36	.48**	.31	.56**	.73**	.60**
Milano, Italy	.70**	.58**	.13	.28	.46*	.22	.43*	.23	.50**	.60**	.58**
Rieti, Italy	.41*	.36*	.34	.29	.11	.01	.10	.30	.43*	.36*	.62**
Vollebekk, Norway	.64**	.06	-.30	.36*	.74**	.45*	.70**	.31	.58**	.53**	.48**

* Significant at the .05 probability level.
** Significant at the .01 probability level.

Table 6. Comparison of yield responses among European sites for the entries in the Fourteenth International Winter Wheat Performance Nursery as measured by correlation coefficients.

	Fundulea, Romania	Madrid, Spain	Zaragoza, Spain	Zurich, Switzerland	Krasnodar, USSR	Mironovski, USSR	Odessa, USSR	Monsheim, West Germany	Weihenstephan, West Germany	Novi Sad, Yugoslavia	Zagreb, Yugoslavia
Przeclaw, Poland	.41*	-.10	-.04	.24	.67**	.91**	.64**	.25	.15	.27	.42*
Fundulea, Romania		.23	-.04	.12	.74**	.49**	.68**	.02	.33	.70**	.48**
Madrid, Spain			.39*	.42*	-.03	-.20	.04	.42*	.49**	.42*	.54**
Zaragoza, Spain				-.07	-.28	-.13	-.22	-.20	-.15	-.06	.00
Zurich, Switzerland					.16	.02	.07	.74**	.73**	.60**	.64**
Krasnodar, USSR						.77**	.88**	.09	.26	.51**	.40*
Mironovski, USSR							.69**	.06	.02	.25	.28
Odessa, USSR								.08	.26	.38*	.37*
Monsheim, West Germany									.71**	.53**	.67**
Weihenstephan, West Germany										.68**	.70**
Novi Sad, Yugoslavia											.72**

* Significant at the .05 probability level.
** Significant at the .01 probability level.

Table 7. Correlation coefficients of agronomic traits for the cultivars in the Fourteenth International Winter Wheat Performance Nursery grown in 1982.

N = Number of paired comparisons	Test weight	1000-kernel weight	Flowering	Ripening	Plant height	Lodging	Winter survival	Frost damage
Yield	.63**	.33**	-.04*	-.07**	.31**	.13**	.53**	-.22**
N	1359	1887	2897	1933	3468	1311	2580	601
Test weight		.19**	-.21**	-.04	.46**	.08	.27**	-.19**
N		771	1131	705	1355	511	805	448
1000-kernel weight			.30**	.15**	-.24**	-.15**	-.21**	-.18**
N			1751	1467	1875	724	1513	448
Flowering				.87**	-.15**	-.23**	-.34**	.49**
N				1931	2891	1130	2194	598
Ripening					-.33**	-.07	-.33**	.39**
N					1933	761	1441	594
Plant height						.35**	.46**	-.28**
N						1302	2404	598
Lodging							.21**	-.20**
N							1147	327
Winter survival								-.69**
N								287

* Significant at the .05 probability level.
** Significant at the .01 probability level.

Table 8. Grain yield means and statistics averaged over 33 sites of the Fourteenth International Winter Wheat Performance Nursery grown in 1982.

Cultivars	Entry	N	Mean q/ha	Standard Deviation	Variance	Corrected Sum of Squares	Low	High	Coefficient of Variation
F29-76	21	130	53.2	24.76	613.00	79072.1	6.7	142.6	46.53
Vala (HE 270-115)	22	130	50.7	22.44	503.50	64951.6	4.4	136.4	44.26
Loudogorka	7	130	49.8	23.50	552.20	71234.3	4.9	144.0	47.20
MV 22-77	18	130	49.3	21.89	479.30	61826.6	6.7	126.6	44.38
Balkan (NS 2630-1)	3	130	48.8	21.46	460.50	59410.0	8.2	123.8	44.01
Lovrin 32	16	130	48.8	23.64	559.00	72107.0	5.3	134.8	48.47
Martonvasari 7	19	130	48.2	23.45	550.00	70945.2	6.4	127.2	48.66
Brule (NE 75414)	23	130	47.2	20.46	418.70	54012.1	8.4	122.0	43.34
Bezostaya 1	5	130	46.7	20.29	411.80	53127.8	9.1	112.6	43.47
Jugoslavija	13	130	46.6	26.46	700.10	90314.3	0.0	134.6	56.77
Vratza	26	130	45.7	24.17	584.10	75350.9	0.0	118.8	52.92
Stephens	24	130	45.5	25.53	651.60	84054.4	2.6	106.0	56.13
Sutjeska (NS 18-30)	25	130	45.5	23.01	529.40	68287.8	6.6	132.2	50.53
Horoshiri-komugi	17	130	44.9	19.47	379.20	48915.9	5.5	120.2	43.41
Sadovo Super	4	130	44.8	24.99	624.50	80561.7	0.0	116.8	55.81
Daws	30	130	42.8	19.29	372.10	47999.3	4.4	90.4	45.09
Grana	20	130	41.3	20.82	433.60	55935.5	3.1	102.0	50.42
Bounty	8	130	39.9	26.11	681.50	87916.4	0.0	119.0	65.50
Pai yu pao	11	130	37.5	18.68	349.00	45018.7	6.4	92.8	49.87
Phoenix (WW33G)	6	130	36.6	26.82	719.30	92789.2	0.0	130.6	73.36
NE 79Y90576	15	130	36.2	16.85	284.10	36643.8	6.0	80.3	46.52
Orovcanka	27	130	36.2	26.84	720.40	92928.0	0.0	103.4	74.24
Chokwang	2	130	35.2	18.92	357.90	46172.7	3.0	88.0	53.79
Maris Mardler	12	130	34.5	27.54	758.30	97823.3	0.0	110.8	79.78
Vega	1	130	33.2	19.71	388.30	50091.6	1.3	98.0	59.39
Chasico INTA	28	130	28.7	25.38	644.10	83091.2	0.0	106.0	88.48
NE 79Y95097	14	130	27.8	17.91	320.70	41366.9	0.0	70.6	64.33
Lucero INIA	29	130	25.9	22.51	506.60	65356.8	0.0	85.6	86.89
Super X	9	130	24.1	25.71	661.00	85270.6	0.0	105.7	106.47
Takahe	10	130	21.0	20.15	406.00	52373.4	0.0	83.0	96.10

Table 9. Test weight means and statistics averaged over six sites of the Fourteenth International Winter Wheat Performance Nursery grown in 1982.

Cultivars	Entry	N	Mean kg/hl	Standard Deviation	Variance	Corrected Sum of Squares	Low	High	Coefficient of Variation
F29-76	21	24	80.3	2.56	6.60	151.1	77.4	85.3	3.19
Bezostaya 1	5	24	79.3	3.15	9.90	228.7	75.2	85.3	3.98
Chasico INTA	28	24	79.0	4.26	18.20	417.5	69.0	85.0	5.40
Chokwang	2	24	78.5	3.67	13.50	310.5	70.6	83.0	4.68
Phoenix (WW33G)	6	24	78.5	3.48	12.10	278.4	73.5	84.7	4.43
Lovrin 32	16	24	78.2	2.30	5.30	121.5	75.0	83.0	2.94
Horoshiri-komugi	17	24	78.2	3.10	9.60	220.7	73.1	83.5	3.96
Balkan (NS 2630-1)	3	24	77.9	3.11	9.60	221.8	72.8	83.8	3.98
Jugoslavija	13	24	77.8	3.96	15.70	361.0	71.0	84.6	5.09
Super X	9	24	77.7	4.30	18.50	425.4	70.6	84.0	5.53
Loudogorka	7	24	77.5	3.30	10.90	250.0	73.4	85.9	4.25
MV 22-77	18	24	77.3	3.40	11.50	265.2	73.6	83.8	4.39
Pai yu pao	11	24	77.2	3.07	9.40	216.7	73.2	83.5	3.98
Brule (NE 75414)	23	24	77.1	2.51	6.30	144.9	72.8	81.3	3.26
Martonvasari 7	19	24	76.6	3.58	12.80	295.5	70.0	83.3	4.68
Sutjeska (NS 18-30)	25	24	76.5	3.01	9.10	208.7	72.0	81.6	3.94
Orovcanka	27	24	76.3	3.46	12.00	274.9	71.0	83.7	4.53
Vratza	26	24	75.9	3.69	13.60	313.1	70.3	83.3	4.86
NE 79Y90576	15	24	75.5	3.13	9.80	225.4	70.0	81.2	4.14
Vega	1	24	75.4	3.70	13.70	315.4	71.0	83.5	4.91
Sadovo Super	4	24	74.7	3.27	10.70	245.6	70.7	81.9	4.37
Grana	20	24	74.3	3.99	15.90	365.7	68.7	79.7	5.36
Vala (HE 270-115)	22	24	74.0	3.19	10.20	233.8	69.5	79.8	4.31
Lucero INIA	29	24	73.9	3.43	11.80	270.5	67.8	79.7	4.64
Daws	30	24	73.8	4.54	20.60	473.2	64.1	80.3	6.14
Takahe	10	24	73.7	4.84	23.40	539.0	65.9	80.8	6.57
Stephens	24	24	71.0	8.01	64.20	1476.4	54.0	78.4	11.29
NE 79Y95097	14	24	70.8	3.89	15.10	348.0	64.4	77.6	5.49
Bounty	8	24	68.8	4.94	24.40	560.8	62.0	76.0	7.17
Maris Mardler	12	24	68.4	5.75	33.00	759.7	55.0	75.8	8.40

Table 10. 1000-kernel weight means and statistics averaged over ten sites of the Fourteenth International Winter Wheat Performance Nursery grown in 1982.

Cultivars	Entry	N	Mean g	Standard Deviation	Variance	Corrected Sum of Squares	Low	High	Coefficient of Variation
Balkan (NS 2630-1)	3	40	48.8	5.73	32.90	1282.2	34.4	55.3	11.75
Sutjeska (NS 18-30)	25	40	48.0	5.37	28.80	1124.9	35.8	57.9	11.19
Lovrin 32	16	40	46.7	6.13	37.50	1463.5	33.8	55.6	13.12
Jugoslavija	13	40	46.1	5.46	29.80	1161.1	34.5	54.3	11.83
Bezostaya 1	5	40	45.1	4.11	16.90	658.1	35.6	51.5	9.11
Orovcanka	27	40	44.4	5.69	32.40	1264.1	33.1	52.6	12.83
Grana	20	40	44.3	5.76	33.10	1291.8	32.4	51.8	13.01
Loudogorka	7	40	43.9	4.83	23.30	909.9	34.0	53.6	10.99
Vega	1	40	43.6	5.15	26.50	1033.3	32.4	51.0	11.81
Vratza	26	40	43.5	4.61	21.30	829.[illegible]	32.9	50.7	10.61
Martonvasari 7	19	40	43.0	5.58	31.20	1216.3	31.7	51.4	12.99
Horoshiri-komugi	17	40	42.8	4.76	22.70	884.9	31.5	48.8	11.12
Chokwang	2	40	42.6	4.97	24.70	963.5	30.5	53.0	11.68
Maris Mardler	12	40	42.5	7.74	59.90	2335.2	30.3	54.7	18.20
Stephens	24	40	42.3	9.50	90.30	3522.3	26.3	55.8	22.44
Vala (HE 270-115)	22	40	41.9	4.88	23.80	929.8	30.2	50.8	11.65
MV 22-77	18	40	41.7	4.81	23.10	901.6	31.5	49.0	11.52
Sadovo Super	4	40	40.8	4.80	23.00	896.7	30.2	49.3	11.76
F29-76	21	40	40.4	4.40	19.40	755.8	31.2	48.3	10.90
Bounty	8	40	39.2	6.61	43.70	1704.3	28.4	52.9	16.84
Chasico INTA	28	40	39.0	6.22	38.70	1509.2	28.3	50.7	15.95
Lucero INIA	29	40	39.0	6.37	40.50	1580.3	28.5	48.2	16.34
Phoenix (WW33G)	6	40	38.1	6.50	42.20	1645.7	26.0	50.8	17.03
Super X	9	38	37.8	4.72	22.30	825.3	28.8	46.0	12.50
Daws	30	40	37.2	8.21	67.50	2630.8	24.5	48.1	22.05
Takahe	10	38	36.7	4.92	24.20	895.0	30.0	46.7	13.40
Pai yu pao	11	40	35.6	3.60	13.00	505.8	25.4	40.0	10.11
Brule (NE 75414)	23	40	35.4	4.63	21.40	834.7	24.2	41.3	13.05
NE 79Y95097	14	40	32.9	5.65	32.00	1246.9	22.0	41.6	17.19
NE 79Y90576	15	40	31.4	4.53	20.50	799.0	21.6	39.0	14.40

Table 11. Date of flowering means and statistics averaged over 15 sites of the Fourteenth International Winter Wheat Performance Nursery grown in 1982.

Cultivars	Entry	N	Mean days*	Standard Deviation	Variance	Corrected Sum of Squares	Low	High	Coefficient of Variation
Chokwang	2	60	141.5	15.55	241.80	14264.9	114.0	172.0	10.99
Pai yu pao	11	60	141.5	15.89	252.50	14897.0	112.0	171.0	11.23
Phoenix (WW33G)	6	60	143.9	16.20	262.30	15477.7	116.0	177.0	11.25
NE 79Y90576	15	60	144.3	13.39	179.30	10578.6	123.0	175.0	9.28
Vratza	26	60	144.8	15.02	225.50	13303.3	121.0	178.0	10.37
Orovcanka	27	60	144.9	14.85	220.50	13008.6	116.0	179.0	10.25
Vega	1	60	146.2	14.96	223.70	13196.7	123.0	179.0	10.23
NE 79Y95097	14	60	146.8	14.23	202.60	11951.6	124.0	182.0	9.70
Super X	9	58	147.1	16.21	262.70	14972.6	119.0	191.0	11.02
Sadovo Super	4	60	147.4	15.55	241.90	14272.9	124.0	183.0	10.55
Chasico INTA	28	60	148.0	13.94	194.30	11461.9	126.0	181.0	9.42
Balkan (NS 2630-1)	3	60	148.1	16.14	260.40	15363.4	121.0	182.0	10.90
Lucero INIA	29	59	148.1	14.51	210.50	12210.9	123.0	183.0	9.79
Lovrin 32	16	60	148.2	12.94	167.50	9882.3	127.0	178.0	8.73
Martonvasari 7	19	60	148.7	13.56	183.80	10845.0	128.0	182.0	9.12
Bezostaya 1	5	60	149.0	16.06	257.80	15212.0	124.0	183.0	10.78
Loudogorka	7	60	149.3	16.17	261.50	15431.3	124.0	185.0	10.83
MV 22-77	18	60	149.4	16.03	256.90	15156.2	124.0	182.0	10.73
Jugoslavija	13	60	149.7	16.36	267.60	15788.6	124.0	185.0	10.93
Vala (HE 270-115)	22	60	149.7	16.06	257.90	15218.2	124.0	185.0	10.73
Brule (NE 75414)	23	60	149.8	15.10	228.10	13460.3	128.0	182.0	10.08
F29-76	21	60	149.9	16.48	271.70	16032.2	124.0	186.0	11.00
Horoshiri-komugi	17	60	150.3	15.88	252.00	14869.0	126.0	185.0	10.56
Sutjeska (NS 18-30)	25	60	151.1	16.56	274.30	16181.7	124.0	185.0	10.96
Takahe	10	55	151.7	12.91	166.50	8993.3	129.0	194.0	8.51
Stephens	24	60	152.0	13.97	195.20	11515.9	132.0	184.0	9.19
Grana	20	60	154.4	17.13	293.60	17320.7	128.0	198.0	11.09
Daws	30	60	154.4	14.76	217.80	12848.7	132.0	191.0	9.56
Maris Mardler	12	60	155.8	14.37	206.50	12183.3	134.0	191.0	9.23
Bounty	8	60	156.4	15.53	241.00	14221.9	134.0	191.0	9.93

* From January 1.

Table 12. Date of ripening means and statistics averaged over ten sites of the Fourteenth International Winter Wheat Performance Nursery grown in 1982.

Cultivars	Entry	N	Mean days*	Standard Deviation	Variance	Corrected Sum of Squares	Low	High	Coefficient of Variation
Pai yu pao	11	40	185.9	21.74	472.70	18433.9	146.0	217.0	11.69
Chokwang	2	40	186.1	21.79	474.90	18521.6	148.0	218.0	11.71
NE 79Y90576	15	40	187.8	19.25	370.60	14453.1	159.0	217.0	10.25
Vratza	26	40	188.6	20.50	420.30	16389.8	155.0	220.0	10.87
Vega	1	40	190.3	21.05	442.90	17274.8	155.0	222.0	11.06
NE 79Y95097	14	40	190.5	19.81	392.60	15312.0	160.0	222.0	10.40
Orovcanka	27	40	191.0	21.21	450.00	17549.0	158.0	223.0	11.11
Phoenix (WW33G)	6	40	191.1	22.07	487.10	18998.8	155.0	222.0	11.55
Balkan (NS 2630-1)	3	40	191.5	22.16	491.20	19156.0	157.0	226.0	11.57
Super X	9	38	192.3	21.07	444.10	16432.2	160.0	221.0	10.96
MV 22-77	18	40	192.3	23.05	531.30	20722.4	148.0	232.0	11.99
Sadovo Super	4	40	193.1	22.52	507.00	19774.8	158.0	228.0	11.66
Bezostaya 1	5	40	193.1	21.29	453.30	17678.8	161.0	226.0	11.03
Jugoslavija	13	40	193.2	20.78	432.00	16848.4	162.0	228.0	10.76
F29-76	21	40	193.7	21.02	441.70	17226.8	162.0	230.0	10.85
Lucero INIA	29	40	193.8	20.43	417.40	16279.0	161.0	221.0	10.54
Horoshiri-komugi	17	40	194.0	20.94	438.30	17093.0	162.0	228.0	10.79
Vala (HE 270-115)	22	40	194.1	22.27	496.10	19349.6	159.0	232.0	11.48
Brule (NE 75414)	23	40	194.2	20.61	424.70	16564.4	161.0	230.0	10.61
Loudogorka	7	40	194.6	21.37	456.90	17817.6	162.0	230.0	10.98
Martonvasari 7	19	40	194.7	20.28	411.20	16036.8	165.0	224.0	10.42
Sutjeska (NS 18-30)	25	40	194.7	21.52	463.30	18066.8	158.0	230.0	11.06
Lovrin 32	16	40	195.2	20.27	410.70	16017.0	166.0	224.0	10.38
Chasico INTA	28	40	195.7	20.02	400.70	15628.4	164.0	224.0	10.23
Takahe	10	38	196.8	20.75	430.50	15927.7	162.0	226.0	10.54
Stephens	24	40	197.3	20.44	417.80	16293.5	166.0	232.0	10.36
Daws	30	40	197.4	20.94	438.30	17093.4	169.0	241.0	10.61
Maris Mardler	12	40	198.7	19.83	393.20	15336.4	169.0	232.0	9.98
Bounty	8	40	199.3	21.02	441.90	17233.1	169.0	238.0	10.54
Grana	20	40	199.5	21.78	474.50	18506.0	168.0	241.0	10.92

* From January 1.

Table 13. Plant height means and statistics averaged over 19 sites of the Fourteenth International Winter Wheat Performance Nursery grown in 1982.

Cultivars	Entry	N	Mean cm	Standard Deviation	Variance	Corrected Sum of Squares	Low	High	Coefficient of Variation
Vega	1	76	69.0	11.26	126.90	9516.9	49.0	105.0	16.33
Maris Mardler	12	76	69.4	7.24	52.50	3936.4	56.0	85.0	10.44
Bount	8	76	72.6	9.00	81.00	6074.4	57.0	90.0	12.40
Orovcanka	27	76	72.6	9.92	98.30	7375.9	54.0	100.0	13.66
Vratza	26	76	72.9	9.60	92.10	6909.4	60.0	100.0	13.17
Phoenix (WW33G)	6	76	73.7	10.67	113.80	8534.8	56.0	100.0	14.48
Chokwang	2	76	75.6	12.68	160.90	12066.8	56.0	110.0	16.79
NE 79Y95097	14	76	76.2	11.74	137.80	10336.6	58.0	105.0	15.40
Pai yu pao	11	76	76.6	11.71	137.20	10291.9	59.0	105.0	15.29
Super X	9	74	78.3	14.11	199.10	14534.6	56.0	115.0	18.01
MV 22-77	18	76	79.9	10.79	116.50	8734.7	60.0	110.0	13.51
Balkan (NS 2630-1)	3	76	80.1	12.70	161.30	12097.8	59.0	115.0	15.87
Stephens	24	76	80.2	10.04	100.80	7560.8	65.0	110.0	12.52
Vala (HE 270-115)	22	76	80.5	12.00	144.10	10806.9	64.0	120.0	14.91
Daws	30	76	80.9	10.74	115.30	8644.7	64.0	110.0	13.28
Sadovo Super	4	76	81.2	14.06	197.80	14836.6	60.0	125.0	17.32
Lovrin 32	16	76	82.8	10.01	100.20	7514.3	66.0	115.0	12.10
Lucero INIA	29	75	84.0	14.03	196.80	14565.9	50.0	120.0	16.71
Sutjeska (NS 18-30)	25	76	84.7	12.18	148.40	11133.2	65.0	120.0	14.38
Jugoslavija	13	76	85.2	12.94	167.30	12549.4	61.0	120.0	15.19
F29-76	21	76	85.2	13.03	169.90	12740.0	67.0	120.0	15.30
Takahe	10	71	86.7	13.50	182.10	12748.8	60.0	125.0	15.56
Horoshiri-komugi	17	76	88.1	10.95	120.00	8999.4	68.0	115.0	12.43
NE 79Y90576	15	76	88.2	13.81	190.60	14294.0	66.0	130.0	15.65
Martonvasari 7	19	76	89.9	12.57	158.10	11857.9	66.0	120.0	13.99
Grana	20	76	90.0	12.33	152.00	11400.0	62.0	125.0	13.70
Bezostaya 1	5	76	92.5	13.21	174.40	13083.0	72.0	130.0	14.28
Brule (NE 75414)	23	76	92.5	13.01	169.30	12698.9	70.0	130.0	14.06
Loudogorka	7	76	92.8	13.35	178.30	13375.2	69.0	130.0	14.39
Chasico INTA	28	76	93.7	15.01	225.20	16888.4	70.0	130.0	16.02

Table 14. Lodging means and statistics averaged over seven sites of the Fourteenth International Winter Wheat Performance Nursery grown in 1982.

Cultivars	Entry	N	Mean %	Standard Deviation	Variance	Corrected Sum of Squares	Low	High	Coefficient of Variation
Maris Mardler	12	28	6.4	20.22	409.00	11042.9	0.0	90.0	314.59
Bounty	8	28	7.9	19.83	393.40	10621.4	0.0	70.0	252.43
F29-76	21	28	8.9	23.78	565.50	15267.9	0.0	100.0	266.33
Orovcanka	27	28	10.2	23.35	545.30	14724.1	0.0	80.0	229.43
MV 22-77	18	28	10.4	26.87	722.10	19496.4	0.0	100.0	259.45
Sadovo Super	4	28	12.1	28.98	839.70	22671.4	0.0	100.0	238.64
Balkan (NS 2630-1)	3	28	12.3	27.06	732.40	19774.1	0.0	90.0	219.64
Super X	9	28	13.2	31.16	970.80	26210.7	0.0	100.0	235.78
Sutjeska (NS 18-30)	25	28	13.6	29.12	847.90	22892.9	0.0	90.0	214.56
Vala (HE 270-115)	22	28	14.5	33.76	1139.5	30767.0	0.0	100.0	233.38
Pai yu pao	11	28	14.6	21.12	446.20	12046.4	0.0	100.0	144.25
Jugoslavija	13	28	14.8	33.51	1123.1	30324.1	0.0	100.0	226.11
Vratza	26	28	14.8	30.01	900.90	24324.1	0.0	100.0	202.51
Takahe	10	25	15.8	31.55	995.20	23884.0	0.0	100.0	199.66
Daws	30	28	15.9	34.51	1190.8	32152.7	0.0	100.0	217.13
Vega	1	28	16.3	30.90	954.90	25781.3	0.0	100.0	190.16
Lucero INIA	29	27	17.4	35.53	1262.3	32818.5	0.0	100.0	204.10
NE 79Y95097	14	28	17.7	29.92	895.30	24174.1	0.0	100.0	169.26
Martonvasari 7	19	28	18.8	34.50	1190	32131.3	0.0	100.0	183.98
Grana	20	28	18.8	33.71	1136.3	30681.3	0.0	100.0	179.78
Stephens	24	28	19.5	33.73	1137.7	30717.0	0.0	100.0	173.29
Lovrin 32	16	28	21.1	34.62	1198.8	32367.9	0.0	100.0	164.32
Loudogorka	7	28	21.6	33.83	1144.5	30902.7	0.0	100.0	156.57
Phoenix (WW33G)	6	28	22.5	33.12	1097.2	29625.0	0.0	100.0	147.22
Bezostaya 1	5	28	23.9	34.27	1174.7	31717.9	0.0	100.0	143.24
NE 79Y90576	15	28	25.2	27.50	756.40	20424.1	0.0	100.0	109.23
Chasico INTA	28	28	26.6	33.33	1111.2	30002.7	0.0	100.0	125.29
Chokwang	2	28	34.8	34.52	1191.6	32174.1	0.0	100.0	99.13
Brule (NE 75414)	23	28	34.8	37.03	1371.3	37024.1	0.0	100.0	106.34
Horoshiri-komugi	17	28	48.0	34.68	1202.5	32467.0	0.0	100.0	72.19

Table 15. Winter survival means and statistics averaged over 20 sites of the Fourteenth International Winter Wheat Performance Nursery grown in 1982.

Cultivars	Entry	N	Mean %	Standard Deviation	Variance	Corrected Sum of Squares	Low	High	Coefficient of Variation
Vala (HE 270-115)	22	78	91.7	10.65	113.50	8738.6	50.0	100.0	11.62
Horoshiri-komugi	17	78	90.9	14.18	201.20	15490.0	40.0	100.0	15.61
Daws	30	78	90.9	12.55	157.50	12125.4	40.0	100.0	13.81
Bezostaya 1	5	78	89.4	13.49	182.00	14011.3	30.0	100.0	15.08
F29-76	21	78	89.2	14.80	219.10	16868.7	40.0	100.0	16.59
Balkan (NS 2630-1)	3	78	89.0	14.59	212.90	16394.0	20.0	100.0	16.39
Loudogorka	7	78	88.7	15.53	241.00	18559.0	40.0	100.0	17.51
MV 22-77	18	78	87.9	17.00	289.10	22261.8	20.0	100.0	19.33
Pai yu pao	11	78	87.7	15.81	250.00	19253.0	40.0	100.0	18.03
Chokwang	2	78	86.6	17.14	293.70	22615.9	20.0	100.0	19.78
Brule (NE 75414)	23	78	85.6	20.10	404.10	31117.2	10.0	100.0	23.49
Sutjeska (NS 18-30)	25	78	80.2	24.75	612.60	47167.5	5.0	100.0	30.87
Martonvasari 7	19	78	79.4	24.58	604.20	46522.7	7.0	100.0	30.96
NE 79Y90576	15	78	78.8	25.62	656.20	50528.8	20.0	100.0	32.49
Lovrin 32	16	78	78.8	25.54	652.20	50216.8	20.0	100.0	32.39
Grana	20	78	78.3	23.56	555.00	42735.8	10.0	100.0	30.09
Stephens	24	78	75.8	32.60	1062.6	81817.3	2.0	100.0	43.01
Sadovo Super	4	78	75.5	31.51	993.00	76461.4	0.0	100.0	41.75
Vratza	26	78	74.0	33.55	1125.5	86662.9	0.0	100.0	45.31
Jugoslavija	13	78	70.6	34.77	1208.7	93070.7	0.0	100.0	49.24
Bounty	8	78	65.0	38.83	1507.5	116074	0.0	100.0	59.76
Vega	1	78	61.8	33.39	1114.8	85837.8	2.0	100.0	54.05
Phoenix (WW33G)	6	78	54.5	40.78	1662.6	128024	0.0	100.0	74.84
NE 79Y95097	14	78	53.0	38.05	1448.2	111509	0.0	100.0	71.82
Orovcanka	27	78	52.9	41.25	1702	131051	0.0	100.0	78.03
Maris Mardler	12	78	50.4	40.92	1674.8	128959	0.0	100.0	81.12
Chasico INTA	28	78	40.0	41.07	1687	129899	0.0	100.0	102.72
Lucero INIA	29	78	32.2	36.72	1348.3	103817	0.0	100.0	114.02
Takahe	10	78	29.2	29.33	860.40	66248.7	0.0	90.0	100.43
Super X	9	78	21.7	31.01	961.90	74065.0	0.0	90.0	143.06

Table 16. Frost damage means and statistics averaged over four sites of the Fourteenth International Winter Wheat Performance Nursery grown in 1982.

Cultivars	Entry	N	Mean 0-9	Standard Deviation	Variance	Corrected Sum of Squares	Low	High	Coefficient of Variation
Takahe	10	16	5.9	3.42	11.70	175.8	0.0	9.0	58.26
Super X	9	16	5.6	2.68	7.20	107.9	1.0	8.0	48.22
Lucero INIA	29	16	5.3	2.80	7.80	117.4	0.0	8.0	52.67
Chasico INTA	28	16	4.5	2.50	6.30	94.0	0.0	8.0	55.63
Maris Mardler	12	16	4.0	2.68	7.20	108.0	0.0	7.0	67.08
Vega	1	16	3.9	2.43	5.90	88.9	0.0	8.0	61.84
Phoenix (WW33G)	6	16	3.9	1.65	2.70	40.9	1.0	6.0	41.96
NE 79Y95097	14	16	3.8	1.77	3.10	47.0	1.0	6.0	47.20
Orovcanka	27	16	3.7	2.18	4.80	71.4	1.0	7.0	59.18
Sutjeska (NS 18-30)	25	16	3.6	0.89	0.80	11.8	2.0	5.0	24.42
Grana	20	16	3.5	0.97	0.90	14.0	1.0	5.0	27.60
Bounty	8	16	3.3	2.14	4.60	69.0	0.0	6.0	65.99
Jugoslavija	13	16	3.3	1.53	2.30	35.0	1.0	5.0	47.00
Lovrin 32	16	16	3.2	1.47	2.20	32.4	0.0	5.0	46.13
Vratza	26	16	3.1	1.48	2.20	32.9	1.0	5.0	48.39
MV 22-77	18	16	2.9	1.31	1.70	25.8	0.0	5.0	45.57
Vala (HE 270-115)	22	16	2.8	1.29	1.70	25.0	0.0	5.0	46.95
Horoshiri-komugi	17	16	2.7	1.49	2.20	33.4	0.0	4.0	55.55
Martonvasari 7	19	16	2.7	1.14	1.30	19.4	1.0	4.0	42.36
F29-76	21	16	2.7	1.40	2.00	29.4	1.0	6.0	52.13
Chokwang	2	16	2.6	1.21	1.50	21.9	0.0	4.0	47.19
Balkan (NS 2630-1)	3	16	2.6	1.15	1.30	19.8	0.0	4.0	43.71
Sadovo Super	4	16	2.6	1.20	1.40	21.8	0.0	4.0	45.87
Pai yu pao	11	16	2.6	0.51	0.30	3.9	2.0	3.0	19.99
Stephens	24	16	2.6	1.50	2.30	33.8	0.0	5.0	57.14
Loudogorka	7	16	2.4	1.21	1.50	21.9	0.0	4.0	49.61
NE 79Y90576	15	16	2.4	1.31	1.70	25.8	0.0	5.0	55.17
Bezostaya 1	5	16	2.3	1.35	1.80	27.4	1.0	5.0	58.49
Brule (NE 75414)	23	16	2.3	1.08	1.20	17.4	1.0	4.0	46.62
Daws	30	16	2.0	0.89	0.80	12.0	0.0	3.0	44.72

Table 17. ALPHABETICAL LIST OF ALL VARIETIES GROWN IN THE IWWPN SINCE 1969

VARIETY	COUNTRY OF ORIGIN	PERMANENT TREATMENT CODE	YEARS GROWN FIRST	LAST	TOTAL
Absolvent	West Germany	307	1978	1979	2
Adam	Austria	1305	1979	1980	2
Alcedo	East Germany	2901	1980	1981	2
Arina	Switzerland	1902	1983	1984	2
Arthur (Purdue 5752A1-1P-2)	USA, Indiana	1010	1969	1971	3
Atlas 66	USA, No. Carolina	1001	1969	1981	13
Aura	Finland	1404	1980	1981	2
Aurora	USSR	1203	1974	1975	2
Backa	Yugoslavia	1601	1971	1973	3
Balkan (NS 2630-1)	Yugoslavia	1614	1981	1982	2
Bankuti 1201	Hungary	401	1969	1970	2
Bastion	Netherlands	706	1980	1981	2
Benhur	USA, Indiana	1002	1969	1971	3
Bezostaya 1	USSR	1201	1969	.	.
Biserka	Yugoslavia	1607	1975	1976	2
Blueboy	USA, No. Carolina	1003	1969	1981	13
Blueboy II	USA, No. Carolina	1024	1974	1975	2
Bolal	Turkey	2102	1974	1975	2
Bordenave Puan Sag	Argentina	2501	1976	1977	2
Bounty	England	1705	1981	1982	2
Bounty Hybrid 100	USA, Commercial	1046	1983	1984	2
Bounty Hybrid 200	USA, Commercial	1047	1983	1984	2
Brule (NE 75414)	USA, Nebraska	1043	1982	1983	2
Budifen (Temu 149-73)	Chile	2205	1978	1979	2
Burgas 2 (Sort 12-13)	Bulgaria	2002	1974	1975	2
Cappelle Desprez	France	201	1969	1970	2
Caribo	West Germany	302	1972	1974	3
Carifen 12	Chile	2202	1972	1974	3
Centurk	USA, Nebraska	1019	1969	1973	4
Chasico INTA	Argentina	2502	1982	1983	2
Chokwang	South Korea	802	1981	1982	2
Clarion	Netherlands	702	1972	1974	3
Clement	Netherlands	705	1979	1980	2
CA 8055	China	3002	1983	1984	2
CI 13449/Centurk	USA, Nebraska	1035	1978	1979	2
CI 15074 (NB 68513)	USA, Nebraska	1020	1971	1973	3
Dacia	Romania	1801	1972	1974	3
Daws	USA, Washington	1045	1982	1983	2
Demar 4	Italy	505	1974	1975	2
Diplomat	West Germany	303	1972	1974	3
Disponent	West Germany	306	1978	1979	2
Doina (F80-73)	Romania	1809	1979	1980	2
Downy (Purdue 6922A1-16)	USA, Indiana	1037	1979	1980	2
Dunav 1	Yugoslavia	1606	1975	1976	2
Favorit	Romania	1803	1974	1975	2
Felix	Netherlands	701	1969	1971	3
Feng Kang 15	China	3003	1983	1984	2
Fertodi 293	Hungary	402	1969	1971	2
Flavio	Italy	507	1976	1977	2
F26-70	Romania	1804	1977	.	1
F29-76	Romania	1811	1982	1983	2
F53-70	Romania	1805	1977	1978	2
F54-70	Romania	1806	1977	1978	2
Gage	USA, Nebraska	1004	1969	1970	2
Gaines	USA, Washington	1005	1969	1970	2
Galiafen	Chile	2204	1976	1977	2
Grana	Poland	2702	1982	1983	2
GK-Tiszataj	Hungary	409	1979	1980	2
GKF-2	Hungary	404	1975	1976	2
GKF-8001	Hungary	405	1976	1977	2

VARIETY	COUNTRY OF ORIGIN	PERMANENT TREATMENT CODE	YEARS GROWN FIRST	LAST	TOTAL
Hachiman-komugi	Japan	1503	1979	1980	2
Heine VII	West Germany	301	1969	1971	3
Hokuei	Japan	1501	1971	1973	3
Horoshiri-komugi	Japan	1504	1982	1983	2
Houser	USA, New York	1038	1980	1981	2
Huenufen	Chile	2206	1980	1981	2
Irnerio	Italy	508	1980	1981	2
Iulia	Romania	1807	1977	1978	2
INIA 66	Mexico	601	1969	1970	2
Jana	Poland	2701	1980	1981	2
Jubilar	West Germany	304	1974	1975	2
Jugoslavija (NS 2699)	Yugoslavia	1615	1981	1982	2
Jyva	Finland	1401	1971	1973	3
JO 3057	Finland	1403	1979	1980	2
Karlik 1 (Dwarf Bezostaya)	USSR	1202	1974	1975	2
Katya A-1	Bulgaria	2012	1983	1984	2
Kavkaz	USSR	1204	1974	1975	2
Kirac 66	Turkey	2101	1972	1974	3
Kitakami-komugi	Japan	1502	1975	1976	2
Kopara	New Zealand	2801	1980	1981	2
Kormoran	West Germany	305	1974	1975	2
Krasnodarskaya 39	USSR	1207	1977	1978	2
Lancer	USA, Nebraska	1006	1969	1970	2
Lancota	USA, Nebraska	1023	1972	1974	3
Lely	Netherlands	704	1975	1976	2
Lerma Rojo 64	Mexico	602	1969	1978	10
Lethbridge 1327	Canada	102	1979	1980	2
Likafen	Chile	2203	1974	1975	2
Lilifen	Chile	2201	1972	1973	2
Lindon	USA, Colorado	1031	1977	1978	2
Loudogorka	Bulgaria	2008	1981	1982	2
Lovrin 24	Romania	1808	1979	1980	2
Lovrin 32	Romania	1810	1982	1983	2
Lucero INIA	Chile	2207	1982	1983	2
LT 176-73 (triticale)	Poland	2703	1983	1984	2
Manella	Netherlands	703	1972	1974	3
Marimp 3	Italy	504	1972	1974	3
Maris Huntsman	England	1702	1975	1976	2
Maris Mardler	England	1704	1981	1982	2
Maris Nimrod	England	1701	1972	1974	3
Maris Templar	England	1703	1975	1976	2
Martonvasar 2 (MV 69-06)	Hungary	403	1969	1971	3
Martonvasari 3 (MV 62-12)	Hungary	406	1976	1977	2
Martonvasari 4 (MV 26-72)	Hungary	407	1978	1979	2
Martonvasari 5	Hungary	408	1979	1980	2
Martonvasari 6	Hungary	410	1980	1981	2
Martonvasari 7	Hungary	411	1982	1983	2
Mironovskaya 808	USSR	1208	1977	1978	2
Moldova	Romania	1802	1972	1974	3
Moslavka (Zg 4240-73)	Yugoslavia	1609	1977	1978	2
MV 22-77	Hungary	412	1982	1983	2

VARIETY	COUNTRY OF ORIGIN	PERMANENT TREATMENT CODE	YEARS GROWN FIRST	LAST	TOTAL
NapHal/Atlas 66	USA, Nebraska	1033	1978	1979	2
Newton	USA, Kansas	1034	1978	1979	2
NB 67730	USA, Nebraska	1007	1969	1970	2
NE 68719	USA, Nebraska	1029	1976	1977	2
NE 7060	USA, Nebraska	1036	1979	1980	2
NE 73640	USA, Nebraska	1030	1977	1978	2
NE 79Y90576	USA, Nebraska	1041	1981	1982	2
NE 79Y95097	USA, Nebraska	1042	1981	1982	2
NR 72-837	Austria	1303	1978	1979	2
NS 15-89A	Yugoslavia	1618	1983	1984	2
NS 732	Yugoslavia	1603	1971	1974	2
NSR-1	Yugoslavia	1613	1979	1980	2
Oasis	USA, Indiana	1026	1976	1977	2
Odessa 4	USSR	1209	1979	1980	2
Odesskaya 51	USSR	1205	1976	1977	2
Odin	Sweden	901	1969	1970	2
Ogosta	Bulgaria	2011	1983	1984	2
Orovcanka	Yugoslavia	1617	1982	1983	2
Pai yu pao	China	3001	1981	1982	2
Parker	USA, Kansas	1008	1969	1971	3
Partizanka	Yugoslavia	1612	1978	1979	2
Phoenix (WW33G)	Australia	2302	1981	1982	2
Priboy	USSR	1206	1976	1977	2
Probstdorfer Extrem	Austria	1301	1971	1973	3
Probstdorfer Karat (WWP7147)	Austria	1302	1976	1977	2
Purdue 4930A6-28-2-1	USA, Indiana	1009	1969	1970	2
Quilamapu 25-77	Chile	2208	1983	1984	2
Rashid	Iran	2401	1975	1976	2
Riley 67	USA, Indiana	1011	1969	1970	2
Rousalka	Bulgaria	2001	1972	1974	3
Sadovo Super	Bulgaria	2009	1981	1982	2
Sadovo 1	Bulgaria	2003	1977	1978	2
Sage	USA, Kansas	1027	1976	1977	2
Saliente	Italy	509	1983	1984	2
Samson (NR 73-5028)	Austria	1304	1978	1979	2
San Pastore	Italy	501	1969	1970	3
Sanja (Zg 5996-66)	Yugoslavia	1605	1974	1975	2
Sava (NS 611)	Yugoslavia	1602	1971	1973	3
Scout 66	USA, Nebraska	1012	1969	1971	3
Sentinel	USA, Nebraska	1025	1975	1976	2
Shawnee	USA, Kansas	1013	1969	1970	2
Sieve	Italy	506	1975	.	1
Slavia (ST-VUR 37)	Czechoslovakia	2601	1978	1979	2
Slavyanka	Bulgaria	2004	1978	1979	2
Stadler	USA, Missouri	1014	1969	1970	2
Starke	Sweden	902	1971	1973	3
Stephens	USA, Oregon	1044	1982	1983	2
Strampelli	Italy	502	1971	1973	3
Sturdy	USA, Texas	1015	1969	1971	3
Super X	Mexico	603	1979	.	.
Sutjeska (NS 18-30)	Yugoslavia	1616	1982	1983	2
Takahe	New Zealand	2802	1981	1982	2
Talent	France	202	1975	1976	2
Ticonderoga	USA, New York	1032	1978	1979	2
Timwin	USA, Wisconsin	1016	1969	1971	3
Trakia	Bulgaria	2006	1980	1981	2
Triumph 64	USA, Oklahoma	1017	1969	1971	3
TAM W-102 (TX 62A4793-7)	USA, Texas	1021	1970	1973	4
TAM W-105	USA, Texas	1040	1980	1981	2
TAW 12399-75	East Germany	2902	1983	1984	2
TRS 237	Australia	2301	1975	1976	2
TX 71A562-6	USA, Texas	1039	1980	1981	2

VARIETY	COUNTRY OF ORIGIN	PERMANENT TREATMENT CODE	YEARS GROWN FIRST	LAST	TOTAL
Vakka	Finland	1402	1971	1973	3
Vala (HE 270-115)	Czechoslovakia	2602	1982	1983	2
Vega	Bulgaria	2007	1981	1982	2
Victor I	Italy	503	1972	1973	2
Vratza	Bulgaria	2010	1982	1983	2
Winalta	Canada	101	1969	1970	2
Winter Triticale	USA, Nebraska	1022	1971	.	1
WA 5829	USA, Washington	1028	1976	1977	2
WWP 4258	Austria	1307	1983	1984	2
WWP 4394	Austria	1306	1980	1981	2
Yorkstar	USA, New York	1018	1969	1971	3
Yubiley	Bulgaria	2005	1977	1978	2
Yung Kwang	South Korea	801	1969	1971	3
Zenith	Switzerland	1901	1972	1974	3
Zg 4293-73	Yugoslavia	1610	1977	1978	2
Zg 887-73	Yugoslavia	1608	1977	1978	2
Zlatna dolina (Zg 5994-66)	Yugoslavia	1604	1972	1974	3
Zlatoklasa (Zg 4364-73)	Yugoslavia	1611	1977	1978	2

Table 18. LIST OF VARIETIES BY COUNTRY AND YEARS GROWN IN THE INTERNATIONAL WINTER WHEAT PERFORMANCE NURSERY

VARIETY	COUNTRY OF ORIGIN	PERMANENT TREATMENT CODE	YEARS GROWN FIRST	LAST	TOTAL
Bordenave Puan Sag	Argentina	2501	1976	1977	2
Chasico INTA		2502	1982	1983	2
TRS 237	Australia	2301	1975	1976	2
Phoenix (WW33G)		2302	1981	1982	2
Probstdorfer Extrem	Austria	1301	1971	1973	3
Probstdorfer Karat (WWP7147)		1302	1976	1977	2
NR 72-837		1303	1978	1979	2
Samson (NR 73-5028)		1304	1978	1979	2
Adam		1305	1979	1980	2
WWP 4394		1306	1980	1981	2
WWP 4258		1307	1983	1984	2
Rousalka	Bulgaria	2001	1972	1974	3
Burgas 2 (Sort 12-13)		2002	1974	1975	2
Sadovo 1		2003	1977	1978	2
Slavyanka		2004	1978	1979	2
Yubiley		2005	1977	1978	2
Trakia		2006	1980	1981	2
Vega		2007	1981	1982	2
Loudogorka		2008	1981	1982	2
Sadovo Super		2009	1981	1982	2
Vratza		2010	1982	1983	2
Ogosta		2011	1983	1984	2
Katya A-1		2012	1983	1984	2
Winalta	Canada	101	1969	1970	2
Lethbridge 1327		102	1979	1980	2
Lilifen	Chile	2201	1972	1973	2
Carifen 12		2202	1972	1974	3
Likafen		2203	1974	1975	2
Galiafen		2204	1976	1977	2
Budifen (Temu 149-73)		2205	1978	1979	2
Huenufen		2206	1980	1981	2
Lucero INIA		2207	1982	1983	2
Quilamapu 25-77		2208	1983	1984	2
Pai yu pao	China	3001	1981	1982	2
CA 8055		3002	1983	1984	2
Feng Kang 15		3003	1983	1984	2
Slavia (ST-VUR 37)	Czechoslovakia	2601	1978	1979	2
Vala (HE 270-115)		2602	1982	1983	2

VARIETY	COUNTRY OF ORIGIN	PERMANENT TREATMENT CODE	YEARS GROWN FIRST	LAST	TOTAL
Alcedo	East Germany	2901	1980	1981	2
TAW 12399-75		2902	1983	1984	2
Maris Nimrod	England	1701	1972	1974	3
Maris Huntsman		1702	1975	1976	2
Maris Templar		1703	1975	1976	2
Maris Mardler		1704	1981	1982	2
Bounty		1705	1981	1982	2
Jyva	Finland	1401	1971	1973	3
Vakka		1402	1971	1973	3
JO 3057		1403	1979	1980	2
Aura		1404	1980	1981	2
Cappelle Desprez	France	201	1969	1970	2
Talent		202	1975	1976	2
Bankuti 1201	Hungary	401	1969	1970	2
Fertodi 293		402	1969	1971	2
Martonvasar 2 (MV 69-06)		403	1969	1971	3
GKF-2		404	1975	1976	2
GKF-8001		405	1976	1977	2
Martonvasari 3 (MV 62-12)		406	1976	1977	2
Martonvasari 4 (MV 26-72)		407	1978	1979	2
Martonvasari 5		408	1979	1980	2
GK-Tiszataj		409	1979	1980	2
Martonvasari 6		410	1980	1981	2
Martonvasari 7		411	1982	1983	2
MV 22-77		412	1982	1983	2
Rashid	Iran	2401	1975	1976	2
San Pastore	Italy	501	1969	1970	3
Strampelli		502	1971	1973	3
Victor I		503	1972	1973	2
Marimp 3		504	1972	1974	3
Demar 4		505	1974	1975	2
Sieve		506	1975	.	1
Flavio		507	1976	1977	2
Irnerio		508	1980	1981	2
Saliente		509	1983	1984	2

VARIETY	COUNTRY OF ORIGIN	PERMANENT TREATMENT CODE	YEARS GROWN FIRST	LAST	TOTAL
Hokuei	Japan	1501	1971	1973	3
Kitakami-komugi		1502	1975	1976	2
Hachiman-komugi		1503	1979	1980	2
Horoshiri-komugi		1504	1982	1983	2
INIA 66	Mexico	601	1969	1970	2
Lerma Rojo 64		602	1969	1978	10
Super X		603	1979	.	.
Felix	Netherlands	701	1969	1971	3
Clarion		702	1972	1974	3
Manella		703	1972	1974	3
Lely		704	1975	1976	2
Clement		705	1979	1980	2
Bastion		706	1980	1981	2
Kopara	New Zealand	2801	1980	1981	2
Takahe		2802	1981	1982	2
Jana	Poland	2701	1980	1981	2
Grana		2702	1982	1983	2
LT 176-73 (triticale)		2703	1983	1984	2
Dacia	Romania	1801	1972	1974	3
Moldova		1802	1972	1974	3
Favorit		1803	1974	1975	2
F26-70		1804	1977	.	1
F53-70		1805	1977	1978	2
F54-70		1806	1977	1978	2
Iulia		1807	1977	1978	2
Lovrin 24		1808	1979	1980	2
Doina (F80-73)		1809	1979	1980	2
Lovrin 32		1810	1982	1983	2
F29-76		1811	1982	1983	2
Yung Kwang	South Korea	801	1969	1971	3
Chokwang		802	1981	1982	2

VARIETY	COUNTRY OF ORIGIN	PERMANENT TREATMENT CODE	YEARS GROWN FIRST	LAST	TOTAL
Odin	Sweden	901	1969	1970	2
Starke		902	1971	1973	3
Zenith	Switzerland	1901	1972	1974	3
Arina		1902	1983	1984	2
Kirac 66	Turkey	2101	1972	1974	3
Bolal		2102	1974	1975	2
Lindon	USA, Colorado	1031	1977	1978	2
Benhur	USA, Indiana	1002	1969	1971	3
Purdue 4930A6-28-2-1		1009	1969	1970	2
Arthur (Purdue 5752A1-1P-2)		1010	1969	1971	3
Riley 67		1011	1969	1970	2
Oasis		1026	1976	1977	2
Downy (Purdue 6922A1-16)		1037	1979	1980	2
Parker	USA, Kansas	1008	1969	1971	3
Shawnee		1013	1969	1970	2
Sage		1027	1976	1977	2
Newton		1034	1978	1979	2
Stadler	USA, Missouri	1014	1969	1970	2
Gage	USA, Nebraska	1004	1969	1970	2
Lancer		1006	1969	1970	2
NB 67730		1007	1969	1970	2
Scout 66		1012	1969	1971	3
Centurk		1019	1969	1973	4
CI 15074 (NB 68513)		1020	1971	1973	3
Winter Triticale		1022	1971	.	1
Lancota		1023	1972	1974	3
Sentinel		1025	1975	1976	2
NE 68719		1029	1976	1977	2
NE 73640		1030	1977	1978	2
NapHal/Atlas 66		1033	1978	1979	2
CI 13449/Centurk		1035	1978	1979	2
NE 7060		1036	1979	1980	2
NE 79Y90576		1041	1981	1982	2
NE 79Y95097		1042	1981	1982	2
Brule (NE 75414)		1043	1982	1983	2

VARIETY	COUNTRY OF ORIGIN	PERMANENT TREATMENT CODE	YEARS GROWN FIRST	LAST	TOTAL
Bounty Hybrid 100	USA, Commercial	1046	1983	1984	2
Bounty Hybrid 200		1047	1983	1984	2
Yorkstar	USA, New York	1018	1969	1971	3
Ticonderoga		1032	1978	1979	2
Houser		1038	1980	1981	2
Atlas 66	USA, No. Carolina	1001	1969	1981	13
Blueboy		1003	1969	1981	13
Blueboy II		1024	1974	1975	2
Triumph 64	USA, Oklahoma	1017	1969	1971	3
Stephens	USA, Oregon	1044	1982	1983	2
Sturdy	USA, Texas	1015	1969	1971	3
TAM W-102 (TX 62A4793-7)		1021	1970	1973	4
TX 71A562-6		1039	1980	1981	2
TAM W-105		1040	1980	1981	2
Gaines	USA, Washington	1005	1969	1970	2
WA 5829		1028	1976	1977	2
Daws		1045	1982	1983	2
Timwin	USA, Wisconsin	1016	1969	1971	3
Bezostaya 1	USSR	1201	1969	.	.
Karlik 1 (Dwarf Bezostaya)		1202	1974	1975	2
Aurora		1203	1974	1975	2
Kavkaz		1204	1974	1975	2
Odesskaya 51		1205	1976	1977	2
Priboy		1206	1976	1977	2
Krasnodarskaya 39		1207	1977	1978	2
Mironovskaya 808		1208	1977	1978	2
Odessa 4		1209	1979	1980	2

VARIETY	COUNTRY OF ORIGIN	PERMANENT TREATMENT CODE	YEARS GROWN FIRST	LAST	TOTAL
Heine VII	West Germany	301	1969	1971	3
Caribo		302	1972	1974	3
Diplomat		303	1972	1974	3
Jubilar		304	1974	1975	2
Kormoran		305	1974	1975	2
Disponent		306	1978	1979	2
Absolvent		307	1978	1979	2
Backa	Yugoslavia	1601	1971	1973	3
Sava (NS 611)		1602	1971	1973	3
NS 732		1603	1971	1974	2
Zlatna dolina (Zg 5994-66)		1604	1972	1974	3
Sanja (Zg 5996-66)		1605	1974	1975	2
Dunav 1		1606	1975	1976	2
Biserka		1607	1975	1976	2
Zg 887-73		1608	1977	1978	2
Moslavka (Zg 4240-73)		1609	1977	1978	2
Zg 4293-73		1610	1977	1978	2
Zlatoklasa (Zg 4364-73)		1611	1977	1978	2
Partizanka		1612	1978	1979	2
NSR-1		1613	1979	1980	2
Balkan (NS 2630-1)		1614	1981	1982	2
Jugoslavija (NS 2699)		1615	1981	1982	2
Sutjeska (NS 18-30)		1616	1982	1983	2
Orovcanka		1617	1982	1983	2
NS 15-89A		1618	1983	1984	2