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RESULTS OF THE SECOND INTERNATIONAL WINTER WHEAT PERFORMANCE NURSERY

J. E. Stroike, et al

Nebraska University

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The data presented in this research bulletin #248 was derived from winter wheat grown in 1970 at 38 sites in 23 countries. Four of the sites were in the southern hemisphere. The same 39 varieties evaluated in the first nursery were grown in the second nursery. Twenty-eight varieties were winter wheats; two were spring wheats. Data on grain yield, test weight, maturity, plant height, lodging, shattering, winter survival, diseases, grain protein content and lysine content for 1970 are reported.

Bezostaia again was the most productive variety over all reporting sites. It exhibited an unusually wide range of adaptation. Western European varieties as a group exhibited highly specific adaptation to the environments for which they were developed. Heine VII had the broadest adaptation among the Western European varieties. Hard red winter wheat varieties from the USA and Bezostaia produced the highest test weight grain in the second nursery. Atlas 66, Purdue 4930 A6-28-2-1 and NB 67730 produced grain with significantly higher protein content than other varieties of comparable productivity.

Phenotypic expression of the high protein trait over diverse production environments was excellent. Lysine expressed as percent of protein was negatively correlated with protein. Varietal differences in maturity, plant height, lodging, disease resistance and other agronomic traits are discussed.

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

SUMMARY

The Second International Winter Wheat Performance Nursery was grown in 1970 at 38 sites in 23 countries. Four of the sites were in the southern hemisphere. Data were reported from 36 sites. The same 30 varieties evaluated in the First International Winter Wheat Performance Nursery were grown in this Second International Winter Wheat Performance Nursery. Twenty-eight varieties were winter wheats; two were spring wheats. Data on grain yield, test weight, maturity, plant height, lodging, shattering, winter survival, diseases, grain protein content and lysine content for 1970 are reported. Two-year mean data summaries also are reported.

Bezostaia again was the most productive variety over all reporting sites. As in the First International Winter Wheat Performance Nursery, it exhibited an unusually wide range of adaptation. Western European varieties as a group exhibited highly specific adaptation to the environments for which they were developed. Heine VII had the broadest adaptation among the Western European varieties. Hard red winter varieties from the USA and Bezostaia produced the highest test weight grain in the Second International Winter Wheat Performance Nursery. Atlas 66, Purdue 4930A6-28-2-1, and NB 67730 produced grain with significantly higher protein content than other varieties of comparable productivity.

Phenotypic expression of the high protein trait over diverse production environments was excellent. Lysine expressed as percent of protein was negatively correlated with protein. Varietal differences in maturity, plant height, lodging, disease resistance and other agronomic traits are discussed.

Results of the Second International Winter Wheat Performance Nursery

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

This is the second report of results from an International Winter Wheat Performance Nursery (IWWPN) organized in 1968 by the Nebraska Agricultural Experiment Station and the Agricultural Research Service, U.S. Department of Agriculture, under a contract with the Agency for International Development, U.S. Department of State. Results of the first IWWPN were published in 1971 in Nebraska Research Bulletin 245.

The IWWPN provides a unique opportunity to study adaptation of winter wheat varieties in an international array of production environments. Varieties that possess superior productivity potential and broad adaptation already have been detected and are being utilized as recipient genotypes for new useful genes in breeding programs. The IWWPN also has afforded the opportunity to assess the contribution of environment to the level and variability of protein and lysine in winter wheat.

PROCEDURES

Nursery size was restricted to 30 entries grown in 4 replications. Basic plot size was six rows. Nursery seed was provided to each cooperator in the approximate quantity requested. Each cooperator was encouraged to adjust row length and row spacing to achieve a seeding rate most compatible with local practice.

Note-recording books in duplicate accompanied the seed shipment to each nursery site. One completed book was returned to Lincoln, Nebr., following harvest. A 10-gram seed sample from each harvested plot was returned to Lincoln for protein and lysine analyses.

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VARIETIES

Varieties are retained in the nursery for at least two years. Therefore, the composition of the 2nd IWWPN was identical to that of the 1st IWWPN. Pedigree and other information on varieties in the nursery appeared in Nebraska Research Bulletin 245. All possess the winter habit of growth except Lerma Rojo 64 and INIA 66. These spring varieties were included to provide comparative performance data on spring and winter varieties from autumn plantings in regions with mild winters.

Some cooperators included local winter varieties in the nursery planting. These were placed at the end of replications. The performance of such varieties has been included herein from all sites reporting performance data for the additional varieties. Centurk and Tamwheat 102 were substituted for Felix and Heine VII in nurseries sent to South American countries in June, 1969.

NURSERY SITES

The 2nd IWWPN was grown at 38 sites in 23 countries. Four of the sites were in the southern hemisphere countries of Argentina, Brazil and Chile. The southern hemisphere sites have presented some logistical problems due to dates of planting and harvest that differ from northern hemisphere sites by about six months. Initially, shipments of nursery seed were made to the southern sites six months before the northern hemisphere sites. This proved to be unworkable because the date of shipment preceded the Arizona harvest of variety quarantine seed increases that provide seed for the nursery. Substitutions for two varieties in the 2nd IWWPN at South American sites were necessary for lack of seed.

The decision was made to delay nursery seed shipments to South American countries until six months after northern hemisphere shipments. Consistent with this decision, a second seed shipment of the 2nd IWWPN was made to sites in Argentina, Brazil and Chile in January, 1970 for seeding in June, 1970. Data are reported from 1970 harvest of the 2nd IWWPN grown at Pergamino and Bordenave, Argentina, and from 1971 harvest of the 2nd IWWPN grown at Bordenave, Argentina, and Temuco, Chile.

Data were received from all sites except Pullman, Wash., where hail destroyed the nursery and Damodar, India where the nursery was lost from drought.

The 2nd IWWPN was grown at the following sites:

USA
Davis, Calif.
Pullman, Wash.
Ft. Collins, Colo.
Stillwater, Okla.
Lincoln, Nebr.
Rowan County, N.C.
Ithaca, N.Y.

Algeria
El-Harrach

England
Cambridge

Netherlands
Wageningen

Sweden
Svalof

Finland
Jokioinen

West Germany
Monsheim
Weihenstephan

Austria
Vienna

Switzerland
Zurich

Italy
Milano
Rieti

Yugoslavia
Novi Sad
Zagreb

Hungary
Martonvasar

Romania
Fundulea

Bulgaria
Tolbukhin

Turkey
Ankara
Eskisehir

Brazil
Rocha Farm

Iraq
Sulaimaniya

Iran
Karaj
Mashad

Afghanistan
Kabul
Mazar-i-Sharif

India
Shalimar
Damodar

Korea
Suwon

Japan
Sapporo

Argentina
Pergamino (1970)
Bordenave (1970)
Bordenave (1971)

Chile
Temuco (1971)

NURSERY MANAGEMENT

Details of nursery management at each test site are summarized on Pages 12 to 88. The information includes dates of seeding and harvest, precipitation, irrigation, fertilization, diseases and other pests, and general description of production conditions.

Thirty-two nurseries received fertilizer. Irrigation water was applied to only five nurseries. In terms of the number of times reported, leaf rust was the most prevalent disease followed in order by stripe rust, stem rust and mildew. Eight diseases were identified. Among other hazards identified by cooperators, damage from birds was most frequently listed (nine times). Four different insect species were reported as problems.

DATA SUMMARIZATION AND STATISTICAL TREATMENT

Data were reported by cooperators as follows:

Yield of grain:—Weight of clean grain produced by the central rows of each plot. Unit of measurement = quintals per hectare (1 quintal = 100 kilograms).

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 reported as number of days from Jan. 1. Date ripe = date of physiological maturity reported as number of days from Jan. 1.

Plant height:—Average height of plants in a plot, 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.

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

Analyses of variance were completed for traits for which data were reported from two or more replications at a nursery site. Means, coefficients of variation, and standard errors are reported for analyzable traits as a part of the individual nursery site data for the 2nd IWWPN.

An in-depth analysis of combined data from the 1st and 2nd IWWPNs involving computation of variety performance stability parameters has been completed. The results of this study will be reported separately.

RESULTS AND DISCUSSION

Yield and other agronomic and grain quality data are reported for individual 2nd IWWPN sites in Tables 1–36. Second IWWPN data are assembled and summarized by individual traits over all nursery sites in Tables 37–52.

Two-year means for yield and other data from individual nursery sites appear in Tables 53–69. Two-year means for individual traits are assembled and summarized over nursery sites in Tables 70–79.

Yield Data

The number of reporting nursery sites in 1970 increased to 32 from the 19 sites in 1969. The nursery mean yield over all sites in 1970 was 30.9 q/ha (Table 37). This was a decrease of 2.8 q/ha from

the 1969 nursery mean. Individual site nursery means were widely different. The lowest was only 4.3 q/ha at Jokioinen, Finland, to 62.0 q/ha at the irrigated high elevation site in Kabul, Afghanistan. Twenty-seven sites reported nursery mean yields that exceeded 20 q/ha and 19 sites reported yields in excess of 30 q/ha.

The performance of Bezostaia again was outstanding (Table 37). Its mean yield of 39.9 q/ha in 1970 compared with its 19-site mean of 43.0 in 1969. Some insight into the high mean performance of Bezostaia can be gained from the summary of "yield" rankings found in Table 38. Bezostaia ranked first at seven sites, second at five sites, third at four sites, fourth at three sites and fifth at two sites. Its poorest nursery yield ranking of 17th occurred at Fundulea, Romania, and Tolbukhin, Bulgaria. Clearly, the ability of this variety to yield well in widely different environments accounts for its superior international performance.

Two soft red winter wheats from the United States, Timwin and Arthur, were the next most productive varieties on the average in 1970. Blueboy, which ranked second in 1969, performed relatively poorly in 1970 due to poor seed germination and emergence. Blueboy seed with high germination was obtained for the 3rd IWWPN.

Five hard red winter varieties developed in Central United States were the next most productive, all the yields ranging from 35.4 to 33.0 q/ha They were Scout 66 (Nebraska), Parker (Kansas), Gage (Nebraska), Lancer (Nebraska) and Sturdy (Texas).

High specificity of adaptation of the Western European varieties such as Cappelle Desprez (France), Felix (Netherlands) and Odin (Sweden) and the US variety Gaines (Washington) is indicated by their excellent performance at some reporting sites and very poor performance at others (Tables 37 and 38). All yielded well at the Western European sites but poorly elsewhere. Heine VII (Germany) exhibited considerably broader adaptation than other West European varieties. This is reflected in its excellent performance at several widely dispersed sites and high international mean performance.

Sixteen sites reported yields in both 1969 and 1970. This does not include Bordenave, Argentina in the southern hemisphere which also reported yield data in both years. The Bordenave data were not made a part of the summary due to time of reporting. Two-year mean yields are summarized in Table 70. Bezostaia with a two-year mean yield of 44.5 q/ha at 16 sites was 5.7 q/ha higher yielding than second ranked Timwin. Arthur, Sturdy, Parker, Scout 66 and Stadler—all with two-year mean yields above 37 q/ha—also ranked well. The lowest individual site two-year nursery mean yield of 13 q/ha was reported from Sulaimaniya, Iraq. Two-year nursery mean yield exceeded 40 q/ha at four sites and was above 50 q/ha at three sites.

Protein and Lysine Content

Atlas 66, Purdue 4930A6-28-2-1 and NB 67730 produced grain with the highest mean protein content in 1970 as they did in 1969 (Tables 40 and 72). All possess genes for high protein from the South American variety Frondoso. They exceeded the fourth highest variety Cappelle Desprez by 1.2 to 3.3 percentage points on the average at 25 reporting sites in 1970. Mean protein content for all varieties at these 25 sites was 15.3%.

Since high grain protein content may reflect low yield in some production situations critical protein comparisons should be restricted to varieties with somewhat comparable yields. Two groups of varieties with similar yields are compared for their 1970 protein content in the following tabulation:

Variety	$\bar{X}$ Yield	$\bar{X}$ Plant height	$\bar{X}$ Protein content
	(q/ha)	(cm)	(%)
Group 1			
Atlas 66	27.4	105	19.3
Purdue 4930A6-28-2-1	27.4	104	18.3
NB 67730	28.6	108	17.2
Bankuti 1201	28.5	110	15.8
Benhur	30.1	95	15.7
Blueboy	28.5	88	14.6
San Pastore	26.8	86	14.5
Heine VII	30.1	93	14.4
Gaines	26.3	74	13.7
Group 2			
Fertodi 293	32.2	106	15.3
Arthur	34.9	93	15.1
Gage	32.5	100	15.1
Sturdy	32.3	78	15.1
Parker	33.8	94	15.0
Scout 66	34.7	98	14.8
Lancer	32.5	102	14.4

The three varieties possessing the "Frondoso" protein genes were substantially higher in grain protein content than comparably yielding varieties. None was as tall growing as Bankuti 1201. Protein content varied less than one percentage point among the second group of varieties, all of which were higher yielding on the average than Group 1 varieties. Again, both tall and short statured varieties were represented in the group. Several had higher protein content than lower yielding varieties in Group 1.

Lysine determinations were made on seed samples from 28 nursery sites in 1970 (Table 41). Lysine data were available from 11 of these sites in 1969 permitting computation of two-year mean lysine values for varieties (Table 73).

Comparison of variety rankings for protein (Table 40) and lysine (Table 41) in 1970 reveal the strong inverse relationship between level of protein and the lysine content of the protein which also was evident in 1969. The three high protein varieties ranked among the lowest in lysine content whereas low protein varieties like Yorkstar and Gaines produced the highest lysine levels in their protein. However, the range in lysine variation was not large (2.71 to 3.03%). Cappelle Desprez exhibited the highest combination of mean protein and lysine (16.0% protein and 2.88% lysine).

Test Weight

Varieties that produced grain with the highest test weight on the average in 1970 are as follows. Their two-year test weight averages and ranks also are shown.

Variety	Test weight		
	1970 Mean (kg/hl)	1969–70 Mean (kg/hl)	Rank
	(25 sites)	(7 sites)	
Triumph 64	80.4	80.2	3
Parker	80.4	81.0	1
Bezostaia	80.0	80.3	2
Winalta	79.6	79.4	6
Shawnee	79.5	80.0	4
Scout 66	79.3	79.4	6
Lancer	79.3	79.2	8

As a group, the hard red winter varieties from Central United States exhibit excellent and stable test weight as does Bezostaia.

Maturity

The range in mean data of flowering among 28 winter varieties in the 2nd IWWPN was 19 days (Table 42). On a two-year basis the range was 18 days (Table 74). The 1970 and 1969–70 rankings of varieties for date of flowering were highly similar with Triumph 64, Benhur, San Pastore, Arthur and Sturdy the earliest on the average and Odin, Felix, Cappelle Desprez, Gaines and Heine VII the latest. Varieties flowered the earliest at Stillwater, Okla.; El-Harrach, Algeria, and Davis, Calif. The latest flowering occurred at Jokiomen, Finland, and Svalof, Sweden.

The range in ripening date among varieties was less than that of flowering in 1970. Only 12 days separated the earliest and latest ripening varieties (Table 43) while on a two-year basis there were 14 days between the earliest and latest ripening varieties (Table 75). The earliest and latest flowering varieties also were the earliest and latest to

ripen. respectively. The late maturity of the Western European varieties Odin, Felix, Cappelle Desprez and Heine VII suggests their strong sensitivity to photoperiod compared to Southern US varieties like Triumph 64 and Sturdy.

Plant Height

Not all short statured varieties evaluated in the 1st and 2nd IWWPNs were high yielding nor were all taller growing varieties low yielding. The short statured Gaines, Felix, San Pastore and Cappelle Desprez were among the least productive varieties over all sites whereas other short varieties like Bezostaia, Sturdy, Timwin and Arthur were among the more productive varieties tested (Tables 37 and 44). Scout 66, Parker and Gage were the most productive of the intermediate to moderately tall varieties.

In general, the varieties exhibited good stability of relative height over testing sites. Tallest mean height of varieties was recorded at Kabul, Afghanistan, and Rieti, Italy. Average height of varieties was shortest at Jokioinen, Finland; Eskisehir, Turkey and Mashad, Iran. On a two-year basis tallest mean nursery height was recorded also at Kabul, Afghanistan, and the shortest at Svalof, Sweden (Table 76).

Lodging

High correlation of lodging with plant height is evident from data in Tables 44 and 45. In general, short statured varieties like Cappelle Desprez, Blueboy, Gaines and Sturdy lodged less than taller growing varieties like Scout 66, NB 67730 and Bankuti 1201. Twenty-four nursery sites reported lodging in 1970. Severest lodging was reported from Weihenstephan, West Germany, and Vienna, Austria, where all varieties lodged to some degree. At nine nursery sites from which lodging was reported in both 1969 and 1970 Felix, Sturdy and Gaines in that order lodged the least (Table 77). Bankuti 1201, NB 67730 and Scout 66 had the highest two-year lodging values.

Shattering

Moderate to heavy shattering occurred at only four test sites in 1970 (Table 46). Thirteen sites reported shattering of some varieties. Scout 66, Gaines and Sturdy, all with less than 3% shattering at 12 sites, were the most resistant. Severest shattering occurred in Purdue 4930A6-28-2-1, San Pastore and Arthur, all of which had 12-station average shattering values in excess of 16%. Since shattering is recorded on border rows two weeks after harvest of yield rows, it is not believed to have been a factor in recorded varietal yield differences.

Winter Survival

Severest winterkilling occurred at Sapporo, Japan, and Jokioinen, Finland, in 1970, although some winter loss of stands was reported from 16 different nursery sites (Table 47). The highest winter survival was recorded for Bezostaia. Twenty-four varieties had mean survivals at the 16 reporting stations higher than 70%. San Pastore, Atlas 66 and Blueboy had the lowest mean survivals, although none was below 65%. Forty-four percent mean survivals were recorded for the spring wheat varieties INIA 66 and Lerma Rojo 64, indicating that the winter at the 16 reporting sites was not severe. Stadler had slightly the best two-year mean winter survival at nine nursery sites at which differential killing occurred in both 1969 and 1970 (Table 79). Atlas 66 and San Pastore survived the least on a two-year basis.

Diseases

Varieties with the lowest severity readings for stripe rust, leaf rust, stem rust and mildew in 1970 appear in the following tabulation:

Stripe rust		Leaf rust		Stem rust		Mildew	
Variety	$\bar{x}$ Sev. (%)	Variety	$\bar{x}$ Sev. (%)	Variety	$\bar{x}$ Sev. (%)	Variety	$\bar{x}$ Sev. (%)
(12 sites)		(18 sites)		(13 sites)		(12 sites)	
Cap. Desp.	3	Sturdy	5	Timwin	2	Arthur	8
Sturdy	4	P. 28-2-1	6	Lancer	4	Odin	18
Fert. 293	4	Riley 67	7	Atlas 66	4	Lancer	20
Felix	5	NB 67730	7	P. 28-2-1	5	Scout 66	22
Odin	5	Atlas 66	7	Arthur	6	Gage	24
Heine VII	5	Benhur	8	Shawnee	7	P. 28-2-1	25
Lancer	6	Timwin	9	NB 67730	8	Fert. 293	26

As a group the Western European varieties were most resistant to stripe rust. Sturdy and Lancer were best among the US varieties. Varieties from the US also were the most resistant, based on mean severity readings, to leaf rust, stem rust and mildew. The high protein experimental lines Purdue 4930A6-28-2-1 and NB 67730 were among the eight varieties with the lowest mean severity readings for each of these latter three diseases. Odin and Fertodi 293 were among the most resistant varieties to mildew although neither was highly resistant on the average. Arthur, with a mean of 8%, was substantially the most resistant to mildew on the average. Bezostaia, while not among the eight most resistant varieties to each disease as it was in 1969, ranked 9th for stripe rust, 13th for leaf rust, 9th for stem rust and 17th for mildew.

SUPPLEMENTAL INFORMATION FROM INDIVIDUAL NURSERY SITES

UNITED STATES

California

Cooperators: J. A. Rupert; C. O. Qualset
Date of planting: Dec. 1, 1969
Precipitation during cycle of test: None reported
Amount of irrigation applied: Two applications in spring
Fertilizer used: N = 112 kg./ha.
General description of climatic conditions during test: Unusually warm spring.
Disease development: Heavy infection (natural) of stripe rust.
Insect, weed or pest problems: Heavy infestation of aphids.
Date of harvest: July 10, 1970
Area harvested for yield: 3 square meters
Dates when different notes were taken: None reported

Data in Table 1

Table 1. Agronomic, grain quality and disease data for the 30 cultivars in the "2nd International Winter Wheat Performance Nursery" grown at Davis, Calif., U.S., 1970.

Cultivar	Yield q/ha	Test weight[a] kg/hl	Protein %	Lysine % of protein	Date of flowering days from Jan. 1	Plant height cm.	Lodging %	Stripe rust Sev. %	Stripe rust Resp.
INIA 66	53.5	79.0	16.4	2.67		98	1	8	R
Lerma Rojo 64	42.5	75.5	17.0	2.68		113	24	5	R
Sturdy	32.5	74.2	16.9	2.74	121	110	0	5	R
Bezostaia	29.6	76.4	16.2	2.84	126	101	32	60	MS-S
Triumph 64	27.3	74.0	16.9	2.76	122	113	82	90	S
Lancer	22.6	75.5	15.8	2.78	135	116	23	25	R-MR
Timwin	20.2	68.2	18.1	2.76	133	100	3	85	S
Heine VII	19.3	70.0	17.5	2.70	148	93	66	5	R
Scout 66	18.5	72.9	16.8	2.77	128	111	75	90	S
San Pastore	18.4	67.5	18.4	2.77	120	104	23	8	R
Gage	18.1	71.0	17.5	2.83	132	115	13	40	MR-S
Cappelle Desprez	17.1	65.4	19.1	2.73	144	100	1	0	O
Fertodi 293	16.9	69.1	19.0	2.64	134	124	5	5	R
Blueboy	16.9	64.8	17.4	2.80	126	113	4	95	S
Gaines	16.6	68.0	16.9	2.83	139	85	3	45	MR-MS
Parker	16.0	70.8	18.7	2.76	126	123	5	55	MR-MS
Shawnee	16.0	72.5	17.3	2.72	128	118	54	45	S
Yung Kwang	15.3	63.7	17.9	2.76	131	108	27	85	S
Yorkstar	14.5	70.3	15.8	2.87	137	99	10	85	S
Winalta	13.6	74.6	16.4	2.77	137	114	35	40	MR
NB 67730	13.1	71.0	19.4	2.76	130	115	40	40	MR-S
Arthur	13.0	72.8	17.4	2.81	125	115	6	95	S
Benhur	12.9	72.5	17.3	2.77	126	115	55	90	S
Purdue 4930A6-28-2-1	12.4	73.5	19.8	2.76	128	131	10	70	S
Atlas 66	12.3	64.5	20.7	2.65	128	110	85	35	R-MS
Riley 67	10.4	73.3	18.9	2.74	130	105	45		MR-S
Bankuti 1201	9.7	70.0	18.1	2.72	136	126	8	35	MR-MS
Stadler	9.6	73.4	17.5	2.77	132	113	35	90	S
Felix	5.9	66.0	19.9	2.81	154	78	69	0	O
Odin	4.3	.	20.1	2.81	153	78	48	0	O
Mean	18.3	71.1	17.8	2.76	132.4	108	29.5	46.2	
Coefficient of variation (%)	26.4	..	2.9	2.42	1.0	4.8	87.9		
Standard error	2.4	.	0.3	0.03	0.7	2.6	12.9		

[a] One rep only.

UNITED STATES

Colorado

Cooperator: J. R. Welsh

Date of planting: Sept. 20, 1969

Precipitation during cycle of test: Not reported

Amount of irrigation applied: 102 mm.

Fertilizer used: None

General description of climatic conditions during test: Normal

Disease development: No diseases except artificially induced stem rust infection.

Insect, weed or pest problems: None

Date of harvest: July 28, 1970

Area harvested for yield: 2 square meters

Dates when different notes were taken: Winter survival—May 11, 1970; Plant height—July 24, 1970; Lodging—July 24, 1970; Stem rust—July 24, 1970.

Data in Table 2

Table 2. Agronomic, grain quality and disease data for the 30 cultivars in the "2nd International Winter Wheat Performance Nursery" grown at Fort Collins, Colo., U.S., 1970.

Cultivar	Yield q/ha	Test weight[a] kg/hl	Protein %	Lysine % of protein	Date of flowering days from Jan. 1	Plant height cm.	Lodging %	Shattering %	Winter survival %	Stem rust Sev. %	Stem rust Resp
Scout 66	60.5	80.4	16.6	2.66	159	110	48	0.00	98	5	R-MS
Lancer	60.0	80.8	15.6	2.60	164	112	43	0.00	93	3	R-MR
Shawnee	59.5	81.1	14.9	2.72	163	117	11	0.00	98	40	MR-S
Bezostaia	59.2	80.1	13.6	2.89	161	99	4	0.00	100	87	S
Parker	58.3	81.5	15.8	2.74	159	101	0	0.00	100	93	S
Timwin	58.0	77.8	16.4	2.75	164	90	0	0.05	78	0	O-R
Gage	55.7	79.3	17.0	2.70	163	109	9	0.00	88	21	MS-S
Sturdy	55.5	78.2	16.7	2.64	159	84	0	0.00	95	36	MS-S
Fertodi 293	54.6	78.8	16.5	2.72	164	119	5	0.03	98	55	MS-S
Yung Kwang	54.4	76.5	15.8	2.69	161	106	9	0.03	94	67	MS-S
Arthur	53.9	79.1	16.6	2.86	160	105	11	5.95	93	1	R
Riley 67	50.4	77.7	17.0	2.73	162	106	9	1.00	90	7	R-S
San Pastore	50.4	76.0	16.0	2.89	160	86	0	0.35	90	45	S
Yorkstar	49.7	69.3	11.5	3.18	165	111	14	0.78	88	85	S
Bankuti 1201	49.7	79.9	16.6	2.71	164	124	18	0.03	85	67	S
Heine VII	49.4	73.8	12.9	2.84	172	114	0	0.00	95	96	S
Stadler	49.3	79.5	14.5	2.89	162	114	10	0.33	95	65	MS-S
Benhur	48.7	77.8	17.2	2.58	157	104	5	0.73	90	9	MR-S
Winalta	48.5	80.2	14.2	2.80	167	118	89	0.00	93	77	S
NB 67730	48.3	79.3	18.9	2.71	161	118	39	0.00	93	25	MR-S
Triumph 64	45.6	78.6	17.5	2.63	158	104	5	0.05	98	60	S
Atlas 66	44.4	75.9	19.7	2.57	165	122	28	0.03	90	17	MR-MS
Purdue 4930A6-28-2-1	44.2	77.4	19.5	2.75	159	113	9	6.53	95	7	R-S
Lerma Rojo 64	41.2	78.6	18.5	2.57	160	95	6	0.05	14	6	MS-S
Cappelle Desprez	39.5	68.9	14.2	2.77	172	104	1	0.08	73	81	S
Blueboy	37.0	69.1	14.6	2.83	167	98	6	0.00	25	43	S
Gaines	36.8	64.5	12.7	3.01	167	89	0	0.00	95	96	S
Odin	34.6	67.7	13.0	3.07	173	129	1	0.15	90	99	S
Felix	27.1	61.0	13.4	2.89	172	108	0	0.13	98	99	S
INIA 66	20.6	78.2	17.2	2.65	158	76	5	0.00	8	5	R-MR
Mean	48.2	76.2	15.8	2.77	163	106	13	0.54	84.4	46.6	
Coefficient of variation (%)	9.4		2.3	2.17	0.4	3.4	104.6	321.7	10.3		
Standard error	2.3		0.2	0.03	0.3	1.8	6.7	0.9	4.4		

[a] One rep only.

UNITED STATES

Oklahoma

Cooperators: E. L. Smith; L. H. Edwards

Date of planting: Sept. 30, 1969

Precipitation during cycle of test: 586 mm. (July, 1969-June, 1970)

Amount of irrigation applied: None

Fertilizer used: P_2O_5 = 33.6 kg./ha.; NH_4NO_3 = 33.6 kg./ha.

General description of climatic conditions during test: Generally satisfactory until mid-May when moisture deficiency and hot winds prevailed.

Disease development: Heavy leaf rust infection in spring.

Insect, weed or pest problems: Some bird damage on late maturing cultivars.

Date of harvest: June 5–16, 1970

Area harvested for yield: 1.5 square meters

Dates when different notes were taken: Heading dates—April 24–May 14, 1970; Plant height—May 28, 1970; Lodging—June 5–16, 1970; Leaf rust—May 11, 1970.

Data in Table 3

Table 3. Agronomic, grain quality and disease data for 29 cultivars in the "2nd International Winter Wheat Performance Nursery" grown at Stillwater, Okla., U.S., 1970.

Cultivar	Yield q/ha	Test weight kg/ha	Protein %	Lysine % of protein	Date of Flowering (Days from Jan 1)	Date of Ripening[a] (Days from Jan 1)	Lodging %	Leaf rust Sev %	Leaf rust Resp
Arthur	41.6	76.4	16.7	2.64	115	152	0	5	S-X
Scout 66	34.1	76.3	15.9	2.64	119	152	0	22	S
Riley 67	32.8	74.2	18.2	2.64	118	152	25	0	R
Triumph 64	32.6	79.2	15.5	2.65	116	152	0	30	S
Bezostaia	32.2	76.4	16.5	2.67	198	152	0	4	MR-X
Benhur	31.7	75.1	17.2	2.57	114	152	23	25	X
Sturdy	31.3	74.4	17.1	2.55	118	152	0	1	S-X
Parker	31.3	77.5	17.2	2.64	118	152	0	12	X
Stadler	31.2	75.9	17.2	2.63	120	152	23	3	S-X
Purdue 4930A6-28-2-1	30.3	75.9	20.8	2.56	120	152	5	10	X
Gage	29.6	74.0	17.7	2.56	120	152	0	1	R-X
Timwin	29.4	66.1	18.6	2.60	121	152	0	25	X
Lancer	27.2	75.8	16.2	2.74	123	152	0	27	S-X
NB 67730	26.8	71.9	20.9	2.44	120	152	0	16	S-X
Fertodi 293	25.4	72.4	18.0	2.60	122	152	0	20	S-X
San Pastore	25.3	69.9	17.6	2.56	115	152	23	40	S
Yorkstar	25.3	69.3	16.0	2.77	127	152	0	45	S
Shawnee	25.0	75.7	16.7	2.68	122	152	0	37	S
Winalta	24.8	78.1	15.3	2.69	127	152	0	25	S
Yung Kwang	24.7	67.6	18.3	2.56	122	152	25	42	S
Blueboy[b]	23.4	64.9	16.6	2.65	122	152	0	37	S-X
Bankuti 1201	20.7	76.9	17.9	2.59	126	152	0	20	S
Gaines	19.1	67.5	16.5	2.60	128	158	0	25	S-X
Atlas 66	18.8	70.2	20.6	2.52	122	152	60	1	S
Heine VII	15.3	69.1	18.3	2.55	129	163	0	27	S
Cappelle Desprez	11.0	63.1	20.4	2.60	132	164	0	18	S-X
Felix	6.7	66.0	19.5	2.63	142	163	0	30	S
Odin	2.7	.	20.8	2.75	140	167	0	52	S
Lerma Rojo 64[c]		..							
Mean	25.4	72.6	17.8	2.62	125.6	154	6.5	19.2	
Coefficient of variation (%)	12.7		3.3	2.23	23.4		78.0		
Standard error	1.6	.	0.3	0.03	14.7		2.5		

[a] One rep only.
[b] Poor emergence.
[c] 100% winterkilled.

UNITED STATES

Nebraska

Cooperators: V. A. Johnson; J. W. Schmidt

Date of planting: Sept. 23, 1969

Precipitation during cycle of test: 431 mm.

Amount of irrigation applied: None

Fertilizer used: N = 45 kg./ha.; P = 45 kg./ha.

General description of climatic conditions during test: Generally favorable except for somewhat dry conditions during winter months.

Disease development: Leaf rust was severe.

Insect, weed or pest problems: None

Date of harvest: July 9, 1970

Area harvested for yield: 1.5 square meters

Dates when different notes were taken: Winter survival—April 10, 1970; Leaf rust—June 15, 1970; Stem rust—June 23, 1970.

Data in Table 4

Table 4. Agronomic, grain quality and disease data for the 30 cultivars in the "2nd International Winter Wheat Performance Nursery" grown at Lincoln, Nebr., U.S., 1970.

Cultivar	Yield q/ha	Test weight kg/hl	Protein %	Lysine % of protein	Date of Flowering (Days from Jan 1)	Date of Ripening (Days from Jan 1)	Plant height cm	Lodging %	Winter survival %	Rust Leaf Sev. %	Rust Leaf Resp	Rust Stem Sev. (%)	Rust Stem Resp.
Parker	39.1	81.1	16.6	2.81	142	174	84	0.0	100	13	MR	7	MS-S
Bezostaia	38.1	79.7	15.0	2.86	144	175	81	0.0	100	1	MR	31	S
Scout 66	37.2	79.3	14.5	2.91	141	174	91	1.3	100	57	S	1	R-MR
Triumph 64	36.9	81.5	16.5	2.80	140	173	93	17.5	100	57	S	1	R-S
Gage	36.6	78.6	16.1	2.75	144	174	88	0.0	100	21	MS	1	MR-S
Riley 67	36.1	79.4	17.2	2.75	141	175	89	0.0	95	0	R	5	S
Lancer	35.0	80.0	14.6	2.95	144	174	87	0.0	100	45	S	1	MR
Timwin	35.2	73.4	16.9	2.73	143	175	76	1.3	100	7	MR	1	R-MR
Arthur	35.1	78.5	16.6	2.81	140	176	86	0.0	98	1	MR	0	R-MR
Benhur	34.7	79.4	17.4	2.75	139	176	94	0.0	95	3	MR	1	R-MR
Sturdy	34.6	77.5	17.3	2.68	141	173	72	0.0	98	1	R-MR	10	S
Stadler	33.8	80.5	16.0	2.78	142	176	93	1.3	100	5	MR	12	S
NB 67730	31.8	78.7	18.2	2.66	144	175	98	11.3	100	2	MR	0	R-MS
Shawnee	31.3	79.3	16.0	2.82	144	175	90	0.0	100	62	S	4	MR-S
Purdue 4930A6-28-2-1	31.0	79.9	19.6	2.74	143	176	96	0.0	99	10	MR	1	R-MR
Fertodi 293	30.5	77.3	16.9	2.68	144	175	94	0.0	98	52	S	27	S
Bankuti 1201	30.5	78.0	16.6	2.76	144	177	97	0.0	95	55	S	11	S
Yung Kwang	28.8	73.7	16.4	2.78	144	175	88	2.5	95	50	S	9	MR-S
Blueboy	28.5	73.0	16.3	2.78	144	178	79	0.0	96	3	R-MR	12	S
Winalta	28.2	79.3	15.8	2.80	148	177	95	0.0	100	45	S	7	S
Gaines	24.5	72.7	16.0	2.87	147	183	71	12.5	100	10	MR	18	S
Atlas 66	21.2	76.1	20.2	2.68	144	178	84	0.0	63	2	MR	1	MR-S
Yorkstar	21.0	69.1	14.1	3.04	144	179	92	1.3	96	60	S	35	S
Heine VII	20.2	53.5	16.6	2.76	153	180	81	1.3	83	47	[illegible]	9	S
San Pastore	19.8	75.3	17.7	2.78	139	175	70	0.0	78	30	S-S	5	MR-S
Cappelle Desprez	19.4	69.4	18.1	2.75	153	183	76	0.0	83	6	R-MR	4	S
Odin	13.8	66.8	17.8	2.86	154	184	93	0.0	96	60	S	15	S
Felix	8.3	65.1	18.2	2.83	154	183	71	0.0	80	67	S	32	S
Lerma Rojo 64									0				
INIA 60									0				
Mean	29.4	72.0	16.7	2.79	144	177	86	1.8	95	28		[illegible]	
Coefficient of variation (%)	9.8	15.7	2.0	2.53	0.3	0.4	3.4	167.1	3.7				
Standard error	1.4	5.6	0.2	0.04	0.2	0.3	1.4	1.5	1.8				

UNITED STATES

North Carolina

Cooperator: C. F. Murphy
Date of planting: Oct. 16, 1969
Precipitation during cycle of test: Not reported
Amount of irrigation applied: Not reported
Fertilizer used: N = 101 kg./ha.; P = 101 kg./ha.; K = 101 kg./ha.
General description of climatic conditions during test: Good
Disease development: None
Insect, weed or pest problems: None reported
Date of harvest: June 11, 1970
Area harvested for yield: 1.5 square meters
Dates when different notes were taken: None reported

Data in Table 5

Table 5. Agronomic and grain quality data for 30 cultivars in the "2nd International Winter Wheat Performance Nursery" grown at Rowan Co., N.C., U.S., 1970.

Cultivar	Yield q/ha	Test weight[a] kg/hl	Protein %	Lysine % of protein	Lodging %
Arthur	49.3	76.6	13.8	2.92	60
San Pastore	45.5	73.5	12.9	3.08	48
Bezostaia	44.0	76.5	13.6	2.89	13
Benhur	42.7	74.8	13.7	2.99	38
Riley 67	41.7	74.2	14.2	2.96	75
Timwin	41.4	72.4	14.6	2.98	45
Stadler	41.2	75.9	13.7	2.92	75
Parker	40.4	78.7	14.7	2.97	43
Sturdy	39.6	73.7	13.8	2.80	0
Blueboy	39.2	69.0	12.4	3.10	8
Yorkstar	38.8	69.5	12.6	3.17	75
Gaines	38.2	64.5	12.8	3.09	5
Yung Kwang	37.5	70.4	14.3	2.87	68
Purdue 4930A6-28-2-1	36.9	76.1	16.7	2.79	60
Heine VII	36.9	72.4	14.9	2.78	20
Gage	36.8	75.1	13.3	2.93	83
Scout 66	36.1	76.0	12.3	2.95	92
Shawnee	34.5	77.0	13.6	3.00	58
Triumph 64	32.4	76.2	15.6	2.87	60
Fertodi 293	31.9	73.8	14.4	2.83	78
Atlas 66	31.0	74.6	18.2	2.69	80
Bankuti 1201	30.9	77.0	15.0	2.83	83
Winalta	30.5	77.3	13.5	2.84	88
NB 67730	27.6	72.9	15.9	2.74	90
Felix	27.3	66.2	16.4	2.86	3
Cappelle Desprez	25.7	63.6	15.2	2.75	25
Lancer	25.2	73.8	13.8	2.96	95
Odin	21.6	60.6	17.0	2.81	23
Lerma Rojo 64[b]					
INIA 66[b]					
Mean	35.9	73.0	14.4	2.90	53.0
Coefficient of variation (%)	12.4		4.7	2.72	36.5
Standard error	2.2		0.3	0.04	9.7

[a] One rep only.
[b] 98% winterkilled.

.UNITED STATES

New York

Cooperator: Neal Jensen
Date of planting: Sept. 23, 1969
Precipitation during cycle of test: 817.6 mm. (Aug. 1, 1969–July 31, 1970)
Amount of irrigation applied: None
Fertilizer used: 10-20-20 = 336 kg./ha.
General description of climatic conditions during test: Normal year
Disease development: No problems
Insect, weed or pest problems: None
Date of harvest: July 30, 1970
Area harvested for yield: 1.5 square meters
Dates when different notes were taken: Winter survival—April 27, 1970

Data in Table 6

Table 6. Agronomic and grain quality data for the 30 cultivars in the "2nd International Winter Wheat Performance Nursery" grown at Ithaca, N.Y., U.S., 1970.

Cultivar	Yield q/ha	Test weight[a] kg/hl	Protein %	Lysine % of protein	Date of flowering[a] days from Jan. 1	Winter survival %
Lancer	37.1	78.6	10.3	3.36	155	80.0
Arthur	35.9	77.3	12.1	3.30	151	88.7
Scout 66	35.6	79.6	10.9	3.29	151	80.0
Yorkstar	33.5	74.1	10.0	3.54	157	82.7
Timwin	31.0	77.0	12.0	3.18	155	84.0
Gage	30.7	77.7	10.4	3.32	155	86.7
Blueboy	29.9	74.8	11.3	3.26	158	61.3
Fertodi 293	29.3	77.4	11.9	3.13	156	74.0
Bezostaia	29.2	79.2	11.0	3.23	155	91.3
Yung Kwang	28.9	76.5	12.3	3.03	154	50.0
Benhur	27.1	76.9	12.3	3.17	151	85.3
Purdue 4930A6-28-2-1	26.2	79.9	14.5	3.06	153	83.3
Felix	26.1	72.9	11.3	3.29	162	75.3
NB 67730	26.0	78.8	13.4	2.94	152	74.7
Shawnee	25.8	79.3	11.5	3.18	154	77.3
Parker	25.5	79.1	11.9	3.14	155	83.3
Bankuti 1201	25.0	79.7	12.8	2.98	157	55.3
Heine VII	24.3	73.5	11.9	3.11	161	60.0
Riley 67	24.0	76.9	11.8	3.29	155	82.7
Stadler	23.7	79.9	12.5	3.11	153	86.7
Odin	23.3	73.9	12.2	3.16	163	79.3
Winalta	22.7	79.2	11.6	3.12	157	82.0
Gaines	20.4	73.5	12.2	3.13	159	56.0
Sturdy	19.7	76.5	12.8	2.94	155	74.0
Triumph 64	19.6	78.6	12.5	3.06	149	84.0
Cappelle Desprez	8.4	67.9	16.6	2.69	160	13.3
San Pastore	6.5	74.1	14.6	2.99	152	6.0
Atlas 66	6.3	76.0	17.0	2.79	157	3.3
Lerma Rojo 64	.			..		0.0
INIA 66		..		...		0.0
Mean	25.1	76.7	12.4	3.14	155	69.3
Coefficient of variation (%)	15.8		5.4	2.57		10.6
Standard error	2.3		0.4	0.05		4.2

[a] One rep only.

ALGERIA

El-Harrach

Cooperator: T. Nezzal

Date of planting: Nov. 25, 1969

Precipitation during cycle of test: 461 mm.

Amount of irrigation applied: None reported

Fertilizer used: N = 57 units; P_2O_5 = 48 units

General description of climatic conditions during test: Above normal rainfall for this region.

Disease development: Vegetative growth was sparse with little tillering. Traces of leaf rust observed.

Insect, weed or pest problems: None reported

Date of harvest: July 22, 1970

Area harvested for yield: 3 square meters

Dates when different notes were taken: None reported

Data in Table 7

Table 7. Agronomic and disease data for the 30 cultivars in the "2nd International Winter Wheat Performance Nursery" grown at El-Harrach, Algeria, 1970.

Cultivar	Yield q/ha	Test weight kg/hl	Date of Flowering (Days from Jan. 1)	Date of Ripening (Days from Jan. 1)	Plant height cm	Lodging %	Leaf rust Sev %
Bezostaia	28.3	74.1	125	181	95	0.0	2.0
Benhur	26.6	75.0	125	178	94	2.5	0.3
Fertodi 293	25.8	77.5	131	176	96	0.5	1.3
Riley 67	25.0	76.8	127	176	94	0.0	9.0
Sturdy	24.1	78.9	121	173	83	0.0	0.3
Shawnee	24.1	69.8	135	176	94	0.0	15.0
Blueboy	23.3	70.3	125	176	81	0.0	6.8
Timwin	23.3	76.8	149	181	79	2.5	1.5
Lancer	23.3	77.8	149	181	89	0.0	1.5
Gage	22.5	75.6	134	176	91	0.5	0.5
Parker	22.5	80.0	127	176	95	20.0	0.0
Stadler	22.5	73.8	126	176	103	0.0	6.5
Arthur	22.5	77.8	125	176	96	0.0	0.3
Scout 66	22.5	78.0	147	179	99	40.0	0.3
Lerma Rojo 64	21.6	80.6	113	167	93	10.0	13.8
San Pastore	20.8	77.3	125	176	95	13.8	25.0
Atlas 66	20.8	75.5	125	176	96	0.3	1.8
Triumph 64	19.9	80.5	126	176	106	20.0	0.3
Yorkstar	19.1	66.6	147	181	90	0.0	21.3
Winalta	19.1	80.4	124	176	101	0.0	6.3
Purdue 4930A6-28-2-1	19.1	77.0	126	176	98	0.0	28.8
Heine VII	19.1	71.8	125	176	91	2.5	2.8
Yung Kwang	18.3	71.4	132	163	88	2.5	0.3
Gaines	15.8	73.8	147	181	83	0.0	9.3
Bankuti 1201	15.6	79.8	127	180	91	3.0	2.5
Cappelle Desprez	15.0	71.9	122	177	89	0.0	2.8
NB 67730	15.0	76.0	133	181	96	20.3	5.3
INIA 66	15.0	81.8	110	167	80	0.0	13.7
Felix	10.8	73.6	147	181	76	13.8	15.0
Odin	6.6	75.4	149	183	85	0.0	33.8
Mean	20.2	75.8	131	177	92	5.1	7.6
Coefficient of variation (%)	12.2	2.6	1.5	0.001	11.1	246.9	
Standard error	1.2	1.0	1.0	0.001	5.1	6.3	

ENGLAND

Cambridge

Cooperator: F. G. H. Lupton

Date of planting: Oct. 23, 1969

Precipitation during cycle of test: 508 mm.

Amount of irrigation applied: 76 mm. in June

Fertilizer used: Basic = 16 N–40 P_2O_5–32 K_2O; Top dressing = 60 N per acre

General description of climatic conditions during test: An unusually long winter followed by a very hot, dry summer.

Disease development: Severe attack of stripe rust induced by inoculated spreader rows nearby. Widespread natural infection of mildew.

Insect, weed or pest problems: Bird damage on some early cultivars.

Date of harvest: July 30, 1970

Area harvested for yield: 4.3 square meters

Dates when different notes were taken: Stripe rust—June 25, 1970; Mildew—June 25, 1970.

Data in Table 8

Table 8. Agronomic, grain quality and disease data for the 30 cultivars in the "2nd International Winter Wheat Performance Nursery" grown at Cambridge, England, 1970.

Cultivar	Yield q/ha	Test weight[a] kg/hl	Protein %	Lysine % of protein	Date of flowering[a] days from Jan. 1	Plant height cm.	Lodging %	1000 kernel wt gms	Stripe rust Sev. %	Stripe rust Resp.	Mildew Sev. %
Heine VII	47.0	76.7	11.4	3.20	162	93	0	42.8	1	MS	40
Gaines	45.5	82.2	10.6	3.35	157	74	0	40.1	5	MS	25
Cappelle Desprez	43.9	73.2	12.5	2.97	169	90	0	43.3	3	MR-MS	25
Lancer	41.5	84.7	12.1	3.07	157	101	23	41.6	1	R	8
Felix	41.5	75.0	12.9	3.03	165	81	0	39.9	1	R	25
Odin	41.5	70.0	12.3	3.07	163	103	0	44.7	1	R-MR	5
Bezostaia	41.0	84.2	12.3	3.11	154	93	14	44.9	10	MS	20
Fertodi 295	39.8	83.2	11.2	3.12	154	104	35	45.5	2	MR	10
Gage	37.9	83.8	12.3	3.06	153	99	6	38.3	15	MR-MS	5
Yorkstar	36.9	79.5	11.2	3.16	159	90	3	41.8	25	MS	15
Shawnee	35.7	83.8	13.2	3.00	153	106	3	40.2	50	MS	25
Blueboy	35.2	76.7	11.7	3.13	161	85	0	43.5	5	MR-MS	5
Scout 66	35.0	82.2	11.3	3.16	153	103	19	40.3	5	R-MR	10
Timwin	34.5	82.5	13.6	3.01	155	81	5	42.3	15	MS	15
Parker	33.9	85.8	10.9	3.21	153	94	0	40.0	15	MR-MS	8
Stadler	31.7	84.2	13.0	3.05	153	101	8	38.0	45	MS	35
Winalta	31.0	84.5	12.3	3.00	159	107	1	41.5	10	MR-MS	20
Atlas 66	30.5	82.7	13.5	2.93	154	107	5	45.0	4	MR-MS	15
Sturdy	30.3	82.7	12.7	3.04	150	73	0	44.9	1	R-MR	50
Riley 67	29.2	72.3	12.4	3.09	155	94	11	44.2	8	MR	10
Bankuti 1201	29.2	83.4	13.7	2.87	154	110	81	42.4	10	MS	30
Arthur	28.4	81.2	11.2	3.19	157	87	9	44.5	30	MS	0
NB 67730	26.7	83.0	14.2	2.79	152	110	29	43.8	20	MS	20
Yung Kwang	25.0	79.6	13.2	2.92	152	93	0	44.6	65	S	30
Purdue 4930A6-28-2-1	24.9	83.5	13.7	3.03	152	101	3	39.8	20	MS	25
Lerma Rojo 64	24.5	79.5	13.4	2.86	146	89	38	42.9	4	MR-MS	35
Triumph 64	20.3	83.0	13.8	2.96	149	98	21	43.4	10	MR	35
INIA 66	14.4	80.9	13.9	2.96	140	78	0	40.7	15	MR	35
Benhur	10.2	81.5	14.0	2.93	151	95	0	43.6	25	MR	20
San Pastore	3.9	75.5	13.7	2.94	147	86	0	38.4	18	MS-S	30
Mean	31.7	80.7	12.6	3.04	155	94	10	42.2	15		21
Coefficient of variation (%)	12.2		16.3	6.69		4.8	85.4	10.5			
Standard error	1.9		1.0	0.10		2.3	4.4	2.2			

[a] One rep only.

THE NETHERLANDS

Wageningen

Cooperators: A. C. Zeven; J. Sneep; H. Masselink

Date of planting: Oct. 15, 1969

Precipitation during cycle of test: 668.7 mm.

Amount of irrigation applied: None reported

Fertilizer used: N = 20 kg./ha.; P_2O_5 = 40 kg./ha.; K_2O = kg./ha.

General description of climatic conditions during test: Normal winter with much snow and ice. Lowest temperature = −18° C. Spring was cold and very wet; summer was rather dry and hot.

Disease development: Most cultivars were attacked by stripe rust and mildew, other diseases were not observed.

Insect, weed or pest problems: None

Date of harvest: According to date of ripeness

Area harvested for yield: 3.75 square meters

Dates when different notes were taken: Winter survival—March 16, 1970; Frost damage—March 16, 1970; Stripe rust—June 12, 1970; Mildew—June 12, 1970; Lodging—June 29, 1970.

Data in Table 9

Table 9. Agronomic, grain quality and disease data for the 30 cultivars in the "2nd International Winter Wheat Performance Nursery" grown at Wageningen, The Netherlands, 1970.

Cultivar	Yield q/ha	Test weight kg/hl	Protein %	Lysine % of protein	Date of Flowering (Days from Jan 1)	Date of Ripening (Days from Jan 1)	Plant height cm	Lodging %	Shattering %	Winter survival %	Frost damage 0–9	Stripe rust Resp.	Mildew Resp
Heine VII	44.4	83.4	13.0	2.89	162	212	98	0	10	85	0.8	MR-S	S
Yorkstar	41.0	81.3	13.0	2.99	160	210	100	48	58	74	1.8	S-VS	S
Bezostaia	40.3	87.8	14.1	2.75	159	211	96	6	10	89	0.3	R-MR	R-S
Cappelle Desprez	39.0	82.8	14.9	2.76	162	212	94	3	14	84	0.8	R	S-VS
Gaines	37.7	81.3	13.4	2.92	161	212	75	1	10	84	0.8	R-S	VS
Felix	37.2	81.9	12.9	2.95	163	216	86	0	18	75	1.8	R	VS
Lancer	37.1	87.7	15.7	2.69	160	210	106	78	10	79	1.5	R-S	S
Fertodi 293	37.1	85.2	17.1	2.63	159	210	110	64	0	81	1.3	S	S
Atlas 66	36.3	85.6	18.1	2.58	159	211	119	55	19	88	0.5	S	S
Riley 67	35.5	85.5	15.3	2.75	159	208	105	75	25	76	1.8	S	S-VS
Odin	35.5	81.8	14.0	2.84	166	214	112	1	0	88	0.5	R	R-S
Stadler	33.9	87.9	13.7	2.85	159	208	108	40	0	80	1.3	VS	S-VS
Blueboy	33.7	80.8	14.4	2.80	160	216	88	21	48	50	3.0	S-VS	S-VS
Bankuti 1201	32.4	83.8	16.9	2.68	160	208	119	83	5	80	1.0	R-S	S
Arthur	32.1	81.7	16.6	2.67	159	208	100	48	36	80	1.3	S-VS	R-VS
Timwin	32.0	83.4	15.1	2.83	160	208	87	53	33	73	1.8	S-VS	S
Gage	31.9	83.7	17.0	2.66	159	210	108	36	0	85	0.8	S-VS	S-VS
Yung Kwang	31.6	86.6	17.1	2.64	158	204	107	39	10	81	1.3	S-VS	S-VS
Winalta	31.5	87.1	14.7	2.73	160	208	111	64	48	76	1.5	S-VS	VS
Sturdy	30.4	86.9	15.9	2.62	156	205	82	1	8	81	1.3	R	VS
Shawnee	30.4	87.6	14.5	2.73	160	210	106	11	18	76	1.5	VS	VS
Benhur	30.4	84.5	17.7	2.59	157	208	99	10	0	78	1.5	S-VS	S
Parker	30.1	82.8	17.5	2.70	159	208	102	6	14	86	0.5	S-VS	S-VS
San Pastore	30.0	83.7	15.9	2.71	156	210	94	9	31	74	1.8	R-VS	VS
Scout 66	28.4	82.9	18.5	2.61	159	208	106	76	0	79	1.3	S	S
NB 67730	27.7	83.3	18.9	2.64	159	208	118	59	10	80	1.0	R-VS	S
Lerma Rojo 64	25.6	85.4	16.9	2.68	154	202	91	49	0	54	3.0	R-S	S-VS
Triumph 64	22.1	85.8	19.0	2.60	157	208	104	33	16	80	1.3	R-S	VS
Purdue 4930A6-28-2-1	21.7	84.4	22.0	2.40	158	208	113	19	54	84	1.0	S-VS	S
INIA 66	19.8	86.2	15.9	2.71	154	202	85	1	14	44	3.5	R	VS
Mean	32.6	84.4	16.0	2.72	159	209	101	32.9	17.2	77.4	1.4		
Coefficient of variation (%)	7.0	1.3	2.3	1.64	0.3	0.5	3.2	43.2	80.4	7.4	41.3		
Standard error	1.1	0.6	0.2	0.02	0.2	0.5	1.6	7.1	6.9	2.8	0.4		

SWEDEN

Svalof

Cooperator: Gösta Olsson

Date of planting: Oct. 8, 1969

Precipitation during cycle of test: 307 mm. (Sept. 1, 1969–Aug. 15, 1970)

Amount of irrigation applied: None

Fertilizer used: N = 90 kg./ha.; P = 72 kg./ha.; K = 72 kg./ha.

General description of climatic conditions during test: A long winter and late spring. Normal temperatures and precipitation during summer.

Disease development: Moderately severe attack of mildew. No rusts.

Insect, weed or pest problems: Some bird damage.

Date of harvest: Aug. 11–25, 1970 (dried on field before threshing)

Area harvested for yield: 1.25 square meters

Dates when different notes were taken: Winter survival—May 12, 1970; Mildew—July 9, 1970; Plant height—July 20, 1970; Lodging—Aug. 3, 1970

Data in Table 10

Table 10. Agronomic and grain quality data for 30 cultivars in the "2nd International Winter Wheat Performance Nursery" grown at Svalof, Sweden, 1970.

Cultivar	Yield q/ha	Test weight kg/hl	Protein %	Lysine % of protein	Date of Flowering (Days from Jan. 1)	Date of Ripening (Days from Jan. 1)	Plant height cm	Lodging %	Shattering %	Winter survival %	Mildew Sev. %
Odin	67.0	81.9	13.0	3.01	176	234	101	[illegible]	0	93	15
Timwin	62.8	81.1	15.4	2.88	171	226	77	1	4	100	47
Scout 66	62.6	79.7	16.4	2.75	169	222	89	28	0	100	28
Stadler	62.0	83.5	14.8	2.80	171	225	98	14	1	98	40
Bezostaia	62.0	82.7	14.5	2.84	172	228	81	3	0	100	40
Heine VII	61.8	79.9	12.7	3.00	175	230	83	1	0	84	55
Lancer	60.0	82.8	15.7	2.65	173	227	92	13	1	99	23
Fertodi 293	59.8	80.4	16.3	2.66	171	226	93	10	0	99	35
Arthur	57.0	78.1	17.0	2.72	170	225	85	5	2	100	2
Felix	56.4	79.8	13.3	2.92	176	231	78	0	0	79	58
Parker	55.8	82.2	16.2	2.73	170	223	84	5	0	100	65
Riley 67	55.0	81.8	16.6	2.73	171	226	88	13	2	100	35
Gaines	52.8	80.3	13.9	2.92	172	228	64	0	0	100	75
Yorkstar	52.0	78.6	15.8	2.80	172	228	86	2	4	91	40
Blueboy	49.8	80.0	15.8	2.77	174	235	77	4	2	95	40
Sturdy	49.0	80.4	15.2	2.79	169	223	72	0	0	96	90
Gage	48.2	78.8	17.3	2.72	170	225	90	15	0	95	20
Triumph 64	47.4	80.6	16.1	2.79	168	221	87	15	0	100	80
Shawnee	45.8	81.2	15.7	2.68	173	227	91	8	0	99	40
Winalta	43.8	80.1	16.6	2.67	173	228	95	33	0	98	55
Atlas 66	43.8	81.4	18.3	2.67	173	231	87	5	0	56	28
NB 67730	43.4	79.1	18.4	2.72	168	221	98	20	0	100	30
Cappelle Desprez	42.6	77.3	15.3	2.70	175	228	75	0	0	49	53
Bankuti 1201	41.6	78.9	18.2	2.75	172	229	103	30	0	94	38
Purdue 4930A6-28-2-1	39.4	78.3	21.6	2.44	168	223	90	5	2	99	30
Yung Kwang	38.0	79.1	17.8	2.71	168	221	81	23	0	95	89
Benhur[a]	10.8	81.3	17.3	2.62	168	223	87	5	0	98	23
San Pastore[a]	9.4	79.9	13.7	3.03	169	218	65	0	1	63	90
Lerma Rojo 64										0	
INIA 66										0	
Mean	49.3	80.3	16.0	2.77	171	226	86	9	0.6	92	45
Coefficient of variation (%)	13.8	0.5	3.5	2.89	0.2	0.2	3.5	26.0	62.0	4.7	
Standard error	3.4	0.2	0.3	0.04	0.2	0.2	1.5	1.2	0.2	2.1	

[a] Damaged by birds.

FINLAND

Jokioinen

Cooperator: Rolf Manner

Date of planting: Sept. 15, 1969

Precipitation during cycle of test: 545.2 mm.

Amount of irrigation applied: None

Fertilizer used: N = 150 kg./ha., P_2O_5 = 75 kg./ha.; K_2O = 100 kg./ha.

General description of climatic conditions during test: Severe winter. Very dry summer.

Disease development: Much *Fusarium* and *Thyphula* associated with severe winter.

Insect, weed or pest problems: Bird damage on cultivars with short straw and those thinned by winter.

Date of harvest: Aug. 10, 1970

Area harvested for yield: 2 square meters

Dates when different notes were taken: Winter survival—May 12, 1970; Flowering dates—June 20–24, 1970; Stripe rust—July 27, 1970; Ripening dates—Aug. 4–8, 1970; Plant height—Aug. 5, 1970; Lodging—Aug. 5, 1970; Shattering—Aug. 5, 1970.

Data in Table 11

Table 11. Agronomic, grain quality and disease data for the 30 cultivars in the "2nd International Winter Wheat Performance Nursery" grown at Jokioinen, Finland, 1970.

Cultivar	Yield q/ha	Protein %	Lysine % of protein	Date of Flowering (Days from Jan 1)	Date of Ripening (Days from Jan 1)	Plant height cm	Lodging[a] %	Shattering %	Winter survival %	Stripe rust Sev %
Felix	15.1	14.8	2.76	175	210	52	21	25	40	25
Bezostaia	13.1	14.3	2.90	173	218	57	41	60	64	9
Odin	12.3	14.9	2.88	175	220	58	34	41	45	8
Gaines	7.8	14.8	2.77	174	219	39	18	51	29	8
Stadler	6.6	14.7	2.79	172	216	58	48	69	58	23
Lancer	6.2	16.5	2.76	173	217	51	35	53	29	21
Parker	5.6	18.4	2.74	173	218	46	25	68	29	35
Triumph 64	5.5	16.3	2.72	172	215	44	38	73	47	11
Scout 66	5.3	18.2	2.70	172	216	46	16	51	25	10
Heine VII	5.1	14.8	2.75	175	219	46	19	13	15	24
Purdue 4930A6-28-2-1	5.1	19.6	2.68	172	214	53	31	74	55	31
Gage	4.8	17.3	2.70	172	216	48	48	75	43	11
Winalta	4.6	17.1	2.58	172	217	46	28	58	23	6
Sturdy	4.5	17.1	2.58	173	217	41	20	72	27	8
Riley 67	4.4	15.5	2.82	171	216	51	45	78	55	4
Timwin	4.1	17.2	2.72	173	216	44	34	76	46	23
NB 67730	2.9	18.3	2.68	172	217	51	45	60	20	8
Shawnee	2.9	17.2	2.63	172	217	49	28	36	11	9
Fertodi 293	2.5	17.7	2.64	173	217	49	21	48	17	36
Arthur	2.2	16.1	2.83	173	216	53	31	93	62	31
Yorkstar	2.2	14.8	2.89	173	217	47	44	75	40	33
Blueboy	2.1	17.1	2.63	175	220	49	30	43	11	8
Bankuti 1201	1.9	18.0	2.74	172	219	47	50	50	9	33
Benhur	1.2	15.5	2.72	171	216	43	40	94	58	30
Yung Kwang	1.1	17.1	2.65	174	219	44	43	40	8	20
Cappelle Desprez	0.4	15.2	2.82	175	219	48	25	25	1	10
San Pastore	0.0	.							0	
Atlas 66	0.0	.	.						0	
Lerma Rojo 64	0.0	..			.	.			0	
INIA 66	0.0	.							0	
Mean	4.3	16.5	2.73	173	217	50	33	58	28.7	18
Coefficient of variation (%)	95.0		.						35.7	
Standard error	2.0		.						5.1	

[a] Lodging caused by birds.

WEST GERMANY

Monsheim

Cooperator: Alfred Lein

Date of planting: Nov. 4, 1969

Precipitation during cycle of test: Normal

Amount of irrigation applied: None

Fertilizer used: P_2O_5 = 140 kg./ha.; K_2O = 400 kg./ha.; N = 80 kg./ha. (Febr. 12, 1970) plus 40 kg./ha. (June 8, 1970)

General description of climatic conditions during test: No winter damage, some lodging, no shattering, no sprouting.

Disease development: Some mildew, late leaf rust, no other rusts, no foot rot diseases.

Insect, weed or pest problems: No special problems

Date of harvest: Aug. 21, 1970

Area harvested for yield: 4.375 square meters

Dates when different notes were taken: Winter survival—March 3, 1970; Mildew—June 26, 1970; Lodging—June 29, 1970; Leaf rust—July 30, 1970.

Data in Table 12

Table 12. Agronomic, grain quality and disease data for the 30 cultivars in the "2nd International Winter Wheat Performance Nursery" grown at Monsheim, West Germany, 1970.

Cultivar	Yield q/ha	Protein[a] %	Lysine[a] % of protein	Date of Flowering[b] (Days from Jan 1)	Date of Ripening[b] (Days from Jan 1)	Lodging[a] %	Winter survival[b] %	Leaf rust[a] Sev. %	Mildew[a] Sev. %
Bezostaia	53.8	14.5	2.75	121	167	20	90	30	65
Odin	52.4	14.6	2.84	136	171	10	60	30	25
Cappelle Desprez	49.1	14.7	2.87	129	169	10	80	30	50
Felix	49.1	13.5	3.03	131	171	10	70	30	65
Heine VII	47.1	14.3	2.79	129	169	5	80	30	85
Parker	45.6	14.8	2.84	118	167	10	80	0	75
San Pastore	43.7	13.6	2.94	119	166	5	80	0	85
Sturdy	43.6	13.9	2.85	116	166	10	80	0	95
Arthur	43.0	16.0	2.79	117	166	63	80	0	15
Triumph 64	42.6	15.0	2.79	114	166	15	90	0	85
Yung Kwang	42.3	17.3	2.73	119	167	20	90	0	85
Scout 66	41.9	16.4	2.71	119	166	85	80	0	25
Lerma Rojo 64	41.6	15.0	2.74	114	165	20	80	0	95
Timwin	41.5	15.6	2.84	121	166	15	80	20	25
Stadler	40.9	15.4	2.83	121	167	25	80	0	50
Blueboy	39.9	16.8	2.78	126	169	5	80	20	35
Fertodi 293	38.8	16.9	2.79	121	166	68	90	0	25
INIA 66	38.4	13.8	2.79	109	165	10	90	0	95
Gage	38.3	16.7	2.76	119	168	15	90	20	25
Lancer	38.0	15.9	2.80	121	167	63	80	0	25
Benhur	37.6	17.6	2.68	118	166	5	80	0	35
Riley 67	36.6	16.1	2.83	119	166	40	80	0	65
Winalta	32.6	16.6	2.78	123	168	33	80	0	65
NB 67730	32.5	17.3	2.61	119	166	15	90	0	25
Bankuti 1201	32.4	17.6	2.66	122	167	50	80	0	65
Purdue 4930A6-28-2-1	30.3	19.7	2.64	119	166	25	80	0	35
Yorkstar	28.7	16.6	2.81	126	169	10	80	40	35
Shawnee	28.2	16.4	2.73	121	169	5	80	10	35
Atlas 66	26.8	20.7	2.61	122	168	68	80	20	25
Gaines	24.7	13.9	2.96	126	169	5	80	0	95
Mean	39.4	15.9	2.78	121	167	25	81	9	54
Coefficient of variation (%)	12.0	3.0	2.19			65.7			
Standard error	3.3	0.3	0.04			11.4		.	.

[a] Two reps only.
[b] One rep only.

WEST GERMANY

Weihenstephan

Cooperator: G. Fischbeck

Date of planting: Oct. 10, 1969

Precipitation during cycle of test: 794 mm.

Amount of irrigation applied: None

Fertilizer used: N = 45 kg./ha.; P_2O_5 = 80 kg./ha.; K_2O= 160 kg./ha.

General description of climatic conditions during test: Long duration of snow cover, late spring, precipitation above average, temperatures about average.

Disease development: High infestation of foot rots.

Insect, weed or pest problems: None reported

Date of harvest: July 29–Aug. 13, 1970

Area harvested for yield: 1.65 square meters

Dates when different notes were taken: Winter survival—March 24, 1970; Mildew—June 10, 1970; Leaf rust—July 14, 1970; Plant height—July 16, 1970; Lodging—July 29, 1970.

Data in Table 13

Table 13. Agronomic, grain quality and disease data for the 30 cultivars in the "2nd International Winter Wheat Performance Nursery" grown at Weihenstephan, West Germany, 1970.

Cultivar	Yield q/ha	Test weight[a] kg/hl	Protein %	Lysine % of protein	Date of Flowering (Days from Jan. 1)	Date of Ripening (Days from Jan. 1)	Plant height cm	Lodging %	Winter survival %	Leaf rust Sev %	Mildew Sev %
Heine VII	51.5	74.3	11.7	2.99	167	220	89	51	68	18	31
Cappelle Desprez	49.8	75.9	12.3	2.90	168	222	85	18	63	6	12
Gaines	46.3	73.4	11.2	3.15	165	219	71	54	88	4	31
Felix	44.0	74.8	12.3	3.00	168	222	86	63	83	10	34
San Pastore	42.1	76.3	12.4	3.03	157	207	87	65	54	25	19
Timwin	40.3	78.0	12.9	3.09	163	214	78	79	85	3	9
Gage	38.4	77.6	13.5	2.92	158	211	92	84	90	1	19
Yorkstar	38.3	70.7	12.7	3.17	164	217	93	70	85	8	12
Yung Kwang	38.1	76.7	15.5	2.79	157	207	93	83	68	11	37
Bezostaia	37.6	78.8	13.5	2.93	162	213	85	80	85	1	31
Fertodi 293	36.9	78.9	13.0	2.90	160	227	99	75	63	0	22
Blueboy	36.2	75.7	13.2	2.91	164	217	82	33	73	0	28
Odin	36.1	74.8	12.0	3.10	171	222	109	51	80	11	9
Sturdy	34.7	78.3	13.1	2.92	158	207	74	82	85	3	31
Parker	34.6	79.2	13.9	2.96	159	212	85	92	85	4	47
Riley 67	32.8	75.4	13.9	2.99	160	212	96	91	85	1	28
Bankuti 1201	31.3	79.6	15.1	2.78	161	212	101	71	65	4	22
Winalta	30.1	76.8	13.5	2.93	163	217	98	63	90	15	40
Atlas 66	29.9	75.9	16.4	2.72	161	212	98	92	60	0	9
Arthur	29.9	76.1	14.7	2.83	158	207	91	86	85	0	6
Benhur	29.4	78.1	14.1	2.85	157	207	93	74	88	0	16
Purdue 4930A6-28-2-1	28.1	76.5	17.1	2.74	158	211	102	85	90	0	3
Triumph 64	27.0	78.1	14.8	2.84	156	207	94	96	88	8	40
Lancer	26.4	79.8	13.2	2.95	161	212	93	83	73	5	6
Shawnee	26.4	78.7	12.8	2.97	160	212	90	92	80	4	44
Stadler	26.2	78.3	13.9	2.94	159	212	97	96	85	4	37
Scout 66	25.6	77.1	15.7	2.78	157	207	92	71	85	0	6
NB 67730	23.0	75.5	16.7	2.75	157	207	103	99	88	0	9
Lerma Rojo 64	19.2	80.1	16.0	2.65	154	205	74	26	25	0	37
INIA 66	11.3	79.6	16.0	2.60	154	205	68	20	20	2	19
Mean	33.4	77.0	13.9	2.90	161	213	90	71	75	5	23
Coefficient of variation (%)	19.0		5.5	2.83	0.4	2.6	6.3	26.5	9.9		
Standard error	3.2		0.4	0.04	0.3	2.8	2.8	9.4	3.7		

[a] One rep only.

AUSTRIA

Vienna

Cooperators: R. Hron; H. Fössleitner

Date of planting: Oct. 7, 1969

Precipitation during cycle of test: 577 mm. (Aug., 1969–July, 1970)

Amount of irrigation applied: None

Fertilizer used: Preplanting = N–42 kg./ha.; P_2O_5–168 kg./ha.; K_2O–126 kg./ha. Early spring = N–78 kg./ha. (calcium ammonium nitrate)

General description of climatic conditions during test: High precipitation in winter and long snow cover, delayed vegetative growth in spring. Dry and cool May.

Disease development: Strong incidence of mildew. Leaf rust and stem rust were late to start. No incidence of stripe rust.

Insect, weed or pest problems: Bird damage to many cultivars.

Date of harvest: July 21–26, 1970

Area harvested for yield: 3 square meters

Dates when different notes were taken: Mildew–May 26, 1970; Leaf rust–June 24, 1970; Stem rust–July 16, 1970; Lodging–July 21, 1970.

Data in Table 14

Table 14. Agronomic, grain quality and disease data for the 29 cultivars in the "2nd International Winter Wheat Performance Nursery" and 1 local cultivar grown at Vienna, Austria, 1970.

Cultivar	Yield q/ha	Test weight[a] kg/hl	Protein %	Lysine % of protein	Date of Flowering (Days from Jan 1)	Date of Ripening[a] (Days from Jan 1)	Plant height cm	Lodging %	Rust Leaf[b] Sev. %	Rust Stem[b] Sev. %	Mildew Sev. %
Probstdorfer Extrem[c]	39.0	81.7			156	200	110	62.0	0.0	0.0	21.5
Lancer	38.3	81.5	16.2	2.72	154	203	106	62.0	12.0	12.0	15.5
Gaines	33.8	77.5	12.7	2.98	158	204	74	74.8	12.0	37.0	34.3
Scout 66	32.8	79.7	17.7	2.63	149	198	101	68.5	12.0	0.0	19.8
Fertodi 293	31.7	78.3	16.9	2.67	153	200	108	68.5	0.0	0.0	21.8
Cappelle Desprez	30.5	74.7	14.4	2.76	164	204	89	65.5	12.0	18.5	18.5
Heine VII	30.0	77.7	13.4	2.81	164	205	90	65.3	12.0	50.0	40.3
Winalta	30.0	81.7	15.8	2.63	157	201	109	68.5	0.0	0.0	52.8
Bezostaia	29.7	79.9	15.7	2.69	153	198	90	65.3	0.0	0.0	40.5
Parker	29.3	81.3	18.0	2.66	150	198	88	62.0	0.0	0.0	43.5
Gage	28.5	78.5	18.3	2.68	151	196	100	59.0	0.0	0.0	24.5
Blueboy	27.8	75.3	15.6	2.72	157	205	83	62.3	0.0	0.0	40.3
Stadler	27.4	80.9	16.0	2.75	154	198	104	62.3	0.0	37.0	62.0
Timwin	27.0	77.5	17.4	2.72	154	203	80	74.8	0.0	0.0	18.5
Yorkstar	26.0	76.1	12.7	2.97	159	205	96	71.8	12.0	50.0	43.8
Atlas 66	25.8	77.3	20.2	2.51	157	202	105	65.3	0.0	0.0	21.5
Felix	25.0	74.9	13.1	2.97	165	206	86	62.3	12.0	37.0	34.0
Riley 67	25.0	78.7	16.3	2.82	152	197	96	65.5	0.0	12.0	31.0
Yung Kwang	24.7	78.9	18.5	2.51	150	197	90	65.3	25.0	0.0	53.0
Sturdy	24.6	78.9	16.4	2.64	148	196	71	62.3	12.0	0.0	55.8
Bankuti 1201	23.9	80.5	18.4	2.64	153	199	115	68.5	12.0	0.0	59.0
Triumph 64	23.6	79.5	18.0	2.63	147	195	89	56.0	12.0	0.0	56.0
NB 67730	23.6	78.7	20.0	2.66	151	196	108	68.5	0.0	0.0	59.0
Odin	23.0	73.3	13.2	2.97	165	206	108	56.0	12.0	37.0	28.0
Shawnee	22.8	79.3	17.9	2.66	153	204	106	59.0	0.0	0.0	53.0
Benhur	16.8	78.9	18.8	2.58	149	197	96	56.0	12.0	0.0	27.8
Arthur	15.4	78.5	18.5	2.63	149	197	85	53.0	0.0	0.0	12.5
Purdue 4930A6-28-2-1	13.4	76.7	23.3	2.48	152	195	99	53.0	0.0	0.0	12.0
Lerma Rojo 64	13.4	78.5	18.4	2.63	148	197	81	65.5	0.0	0.0	71.8
San Pastore	8.3	75.5	16.3	2.78	150	194	76	46.8	12.0	0.0	43.3
Mean	25.7	78.4	16.8	2.71	154	200	95	63.2	5.8	9.4	36.6
Coefficient of variation (%)	9.8		2.7	2.40	0.7		5.7	13.2			
Standard error	1.2		0.2	0.03	0.5		2.7	4.2			

[a] One rep only. [b] Two reps only. [c] Local cultivar.

SWITZERLAND

Zurich

Cooperators: G. Popow; F. Weilenmann

Date of planting: Oct. 21, 1969

Precipitation during cycle of test: 964.3 mm.

Amount of irrigation applied: None

Fertilizer used: N = 60 kg./ha.; P_2O_5 = 80 kg./ha.; K_2O = 240 kg./ha.

General description of climatic conditions during test: Winter was severe with much snow. Spring was unusually late. Summer was normal.

Disease development: Unusually severe attack of leaf rust. Normal incidence and severity of other diseases.

Insect, weed or pest problems: None reported

Date of harvest: July 22–Aug. 12, 1970

Area harvested for yield: 3 square meters

Dates when different notes were taken: Frost damage—April 15, 1970; Stripe rust—June 15, 1970; Mildew—June 15, 1970; Leaf rust—July 10, 1970; Plant height—July 22, 1970; Lodging—July 22, 1970; Weakness of rachis—Aug. 20, 1970.

Data in Table 15

Table 15. Agronomic, grain quality and disease data for the 30 cultivars in the "2nd International Winter Wheat Performance Nursery" grown at Zurich, Switzerland, 1970.

Cultivar	Yield q/ha	Test weight kg/hl	Protein %	Lysine % of protein	Date of Flowering (Days from Jan 1)	Date of Ripening (Days from Jan 1)	Plant height cm	Lodging %	Frost damage 0-9	Rust Stripe Sev %	Rust Stripe Resp	Rust Leaf Sev %	Rust Leaf Resp	Mildew Sev %	Mildew Resp	Weakness of rachis %
Bezostaia	45.0	80.6	12.1	2.99	168	202	95	18	1.0	11	R-MS	0	O-R	17	MR-MS	15
San Pastore	43.4	77.9	11.1	3.20	166	200	91	9	1.5	7	O-MR	10	MS	55	S	14
Yorkstar	42.8	73.5	10.6	3.22	172	209	101	13	1.5	17	O-S	1	O-R	15	MS	25
Heine VII	39.5	72.8	11.5	3.08	174	211	91	0	2.0	0	O	8	MR-MS	19	R-MS	4
Arthur	39.1	79.2	12.4	3.03	167	200	98	28	1.5	20	O-MS	0	O	5	R-MR	16
Fertodi 293	38.8	80.5	12.8	2.81	170	203	108	36	2.5	0	O-R	0	O	12	MR-MS	4
Stadler	36.6	80.4	11.6	3.18	169	199	106	25	2.0	15	R-MS	0	O	40	MR-S	8
Atlas 66	36.4	78.9	16.3	2.70	170	208	101	72	1.0	1	O-MR	0	O	13	R-MS	18
Scout 66	35.8	79.1	13.5	2.90	167	201	100	75	1.5	0	O-R	0	O	20	MR-MS	6
Blueboy	35.3	69.0	13.6	2.77	172	212	88	9	6.0	5	O-MR	0	O-R	22	MS	14
Cappelle Desprez	34.6	72.3	14.3	2.79	172	212	93	0	3.0	2	O-R	6	R-MR	11	R-MS	10
Felix	34.5	67.9	12.7	2.89	176	215	90	0	3.0	1	O-R	5	MR	30	MS-S	3
Riley 67	33.8	80.2	12.3	3.06	168	202	100	25	2.0	8	R-MS	0	O	20	MS-S	21
Purdue 1930A6-28-2-1	33.7	79.3	16.3	2.71	166	199	113	21	1.0	15	R-MS	0	O	30	MS-S	10
Lancer	33.5	81.5	12.4	2.89	171	201	104	45	2.5	4	R-MR	0	O	8	MR	11
Bankuti 1201	33.3	80.6	14.3	2.86	169	206	116	75	2.5	6	O-MR	1	O-R	30	MR-S	5
Gage	32.8	80.1	12.9	2.89	169	199	103	40	2.0	5	O-MR	0	O	21	MR-S	9
Timwin	32.6	74.6	13.3	3.00	170	204	80	3	3.0	16	R-MS	0	O	32	MS-S	15
Parker	32.6	80.3	12.7	3.07	169	197	93	13	2.5	38	O-S	0	O	25	MS	8
Gaines	32.2	72.0	12.5	2.94	173	205	75	3	1.5	1	O-MR	0	O	25	MR-S	10
Yung Kwang	31.9	75.1	12.4	2.97	166	193	93	50	2.5	38	MR-S	2	O-MR	42	MS-S	4
Odin	31.5	71.0	12.2	3.02	179	218	120	0	2.0	0	O-R	3	R	10	MR-MS	5
NB 67730	31.1	79.1	15.0	2.79	166	196	114	70	1.5	20	O-MS	1	O-MR	12	MR	8
Winalta	30.5	78.6	11.9	2.98	172	209	109	45	1.5	20	O-S	7	MR-MS	20	MS-S	5
Shawnee	29.1	79.6	11.7	3.27	171	204	108	38	2.5	11	O-MS	0	O	35	MS-S	5
Triumph 61	28.1	79.6	13.1	3.01	165	196	98	80	1.5	11	R-MS	0	O	52	S	6
Benhur	27.0	78.5	13.4	2.85	165	199	96	6	2.0	17	R-MS	0	O	26	MR-S	9
Lerma Rojo 64	24.8	74.7	14.3	2.94	163	191	81	9	4.5	2	O-MR	0	O	67	MS-S	9
INIA 66	21.4	75.5	14.1	2.97	162	193	73	1	1.0	1	O-R	0	O	15	MR-S	19
Sturdy	21.9	74.3	13.8	2.85	166	191	73	0	3.0	5	O-MR	0	O	70	MS-S	9
Mean	33.6	77.0	13.0	2.95	169	203	97	27	2.5	10		15		27.6		10
Coefficient of variation (%)	9.9	2.1	3.8	3.06	0.5	0.6	3.7	51.8	49.0							
Standard error	1.7	0.8	0.3	0.05	0.5	0.6	1.8	7.0	0.6							

ITALY

Milano

Cooperator: M. C. Scalfati

Date of planting: Nov. 3–4, 1969

Precipitation during cycle of test: 410 mm.

Amount of irrigation applied: None reported

Fertilizer used: 92 N- 106 P–106 K

General description of climatic conditions during test: Severe lodging in June during ripening.

Disease development: Attacks of leaf rust, stem rust and mildew occurred. Also a trace of *Fusarium roseum* present.

Insect, weed or pest problems: None reported

Date of harvest: July 18–21, 1970

Area harvested for yield: 1.8 square meters

Dates when different notes were taken: None reported

Data in Table 16

Table 16. Agronomic, grain quality and disease data for the 30 cultivars in the "2nd International Winter Wheat Performance Nursery" grown at Milano, Italy, 1970.

Cultivar	Yield q/ha	Test weight kg/hl	Protein %	Lysine % of protein	Date of Flowering (Days from Jan. 1)	Date of Ripening (Days from Jan. 1)	Plant height cm.	Lodging %	Winter survival %	Frost damage 0–9	Rust Leaf Sev %	Rust Leaf Resp	Rust Stem Sev. %	Rust Stem Resp.	Mildew %
Yung Kwang	67.6	78.6	14.8	2.77	146	189	112	73	96	2.0	60	R-MS	18	MR	67
Shawnee	64.8	82.1	12.8	2.86	148	187	118	58	96	3.0	6	R	0	O	42
San Pastore	64.7	79.0	12.6	2.91	143	185	98	8	93	2.8	82	MS-S	57	S	42
Arthur	64.7	81.0	14.5	2.84	146	190	110	68	93	3.8	33	R-MR	4	R	0
Timwin	62.8	76.4	14.0	2.82	148	189	82	50	95	3.0	26	MR	5	R	12
Lerma Rojo 64	62.4	80.9	15.2	2.68	138	182	89	43	95	3.0	0	O	5	O-R	60
Fertodi 293	59.6	78.9	14.0	2.82	147	187	119	73	94	3.8	5	R	16	R	7
Parker	59.7	82.6	14.4	2.76	146	188	102	53	94	3.0	21	MR	45	MS	52
Stadler	58.0	78.8	12.6	2.97	147	189	115	55	98	3.0	75	S	75	S	57
Bezostaia	57.9	82.1	13.5	2.76	146	188	93	28	95	4.0	0	O	0	O	18
Yorkstar	57.7	72.7	12.6	2.99	151	187	105	45	95	3.5	42	MR	42	MR	18
Triumph 64	55.9	82.1	15.4	2.64	144	188	112	48	97	2.5	6	R	30	MS	52
Sturdy	55.6	78.7	14.8	2.80	144	189	74	13	97	2.5	7	O-R	2	O-R	57
Benhur	55.6	81.2	15.1	2.68	143	189	111	54	90	3.5	12	R	55	MS	6
Blueboy[a]	54.0	72.3	14.0	2.84	152	192	91	0	93	3.8	2	O-R	72	MR	30
Purdue 4930A6-28-2-1	53.1	81.7	16.6	2.68	146	188	123	50	95	2.0	1	O-R	0	O	2
Heine VI	52.8	73.4	14.7	2.74	155	190	109	10	94	3.0	79	S	47	MR	17
Scout 66	52.3	81.5	14.0	2.80	146	190	108	60	95	2.8	7	R	5	R	7
INIA 66	51.6	81.2	14.7	2.66	136	181	73	0	95	3.8	0	O	8	O-S	0
Bankuti 1201	50.9	81.2	15.3	2.74	148	189	124	63	94	3.0	57	MS	72	S	32
Gage	50.8	80.0	14.5	2.76	148	188	111	40	95	2.5	25	O-MR	30	MR	5
Cappelle Desprez	50.2	72.7	16.2	2.72	156	194	96	26	95	2.3	15	R-MR	40	MS	3
Riley 67	49.8	77.1	14.0	2.80	147	188	105	51	98	3.5	40	MS-S	70	MS-S	30
Atlas 66	45.9	77.0	18.8	2.57	147	191	126	23	94	2.0	5	R	9	R	7
Lancer	44.1	79.0	14.4	2.77	149	187	114	40	96	2.8	20	MR	16	R	0
Felix	43.7	71.4	13.2	2.91	156	189	93	0	95	3.0	94	S	94	S	50
Gaines	41.7	69.8	12.6	3.03	151	187	73	1	96	1.5	35	R	85	MS	77
Winalta	40.7	81.0	14.7	2.80	151	192	110	38	95	2.3	60	MS-S	36	MS	55
NB 67730	37.2	78.9	17.0	2.66	146	187	119	30	96	1.5	2	O-R	20	MR	7
Odin	35.5	71.4	15.1	2.79	159	194	122	38	97	3.0	10	R	77	S	0
Mean	53.4	78.2	14.5	2.79	148	189	104	37.8	95	2.9	28		35		27
Coefficient of variation (%)	9.5	1.5	5.3	2.54	0.3	0.3	2.7	55.2	2.6	14.2					
Standard error	2.5	0.6	0.4	0.04	0.2	0.3	1.4	10.4	1.2	0.2					

[a] Irregular emergence and very few seedings in all reps.

ITALY

Rieti

Cooperators: G. Zitelli; Udo de Cillis

Date of planting: Nov. 26, 1969

Precipitation during cycle of test: 680 mm.

Amount of irrigation applied: None reported

Fertilizer used: 10-10-10 = 500 kg./ha.; NH_4NO_3 = 200 kg./ha.

General description of climatic conditions during test: Mild winter with sufficient snow cover produced no relevant damage; late frost in early May caused damage.

Disease development: Not reported

Insect, weed or pest problems: None reported

Date of harvest: July 13–17, 1970

Area harvested for yield: 3 square meters

Dates when different notes were taken: Not reported

Data in Table 17

Table 17. Agronomic, grain quality and disease data for the 30 cultivars in the "2nd International Winter Wheat Performance Nursery" grown at Rieti, Italy, 1970.

Cultivar	Yield q/ha	Test weight kg/hl	Protein %	Lysine % of protein	Date of Flowering (Days from Jan 1)	Date of Ripening (Days from Jan 1)	Plant height cm	Lodging %	Shattering %	Winter survival %	Rust: Stripe Sev. %	Rust: Stripe Resp	Rust: Leaf Sev. %	Rust: Leaf Resp	Rust: Stem Sev. %	Rust: Stem Resp	Mildew Sev. %
Sturdy	50.9	78.6	13.9	2 82	137	187	93	0	17	96	0	O	0	O	74	O-S	74
Bezostaia	50.7	81.7	14.3	2 71	143	190	109	13	43	98	0	O	0	O	10	S	20
Arthur	49 9	79.6	14 7	2 81	141	190	118	50	60	100	45	O-S	27	MR-VS	24	O-S	0
Yung Kwang	46.7	71 9	15.4	2 81	143	190	113	36	28	96	60	MS	80	MS	80	S	75
Benhur	45.3	80.2	14.1	2.73	139	188	112	25	43	95	30	MR	30	MR	90	S	20
Shawnee	45 3	81.5	12.3	2 94	144	190	119	0	25	99	80	MS	0	O	0	O	40
Timwin	44 5	75 0	15.1	2.90	144	190	89	13	29	97	30	MR	0	O	0	O	0
Fertodi 293	43.7	74.5	15.8	2.75	119	192	127	25	23	99	0	O	20	MR	99	S	40
Lerma Rojo 64	42.2	79.0	15.1	2.72	130	184	88	0	21	97	0	O	0	O	0	O	75
Purdue 4930A6-28-2-1	41.5	80 8	17.9	2.60	144	189	128	38	63	100	80	MS	0	O	30	MR	0
Atlas 66	40 7	78.6	18.9	2.52	146	192	128	50	41	100	0	O	0	O	10	S	0
Parker	38 9	79.5	13 9	2.90	140	187	110	50	26	99	0	O	80	MS	99	S	75
Scout 66	38.5	79.6	15 3	2 66	142	189	115	87	20	98	0	O	60	MS	60	MS	0
Triumph 64	37.1	80.5	16.2	2 71	136	187	115	62	25	100	30	MS	60	MR	80	S	40
Lancer	36.7	79.3	13 8	2 82	150	192	126	50	20	98	0	O	0	O	0	O	0
Blueboy	36 6	70.1	13 6	2.90	150	198	113	0	36	95	0	O	0	O	60	S	50
Gage	34 8	78 0	15.7	2 69	144	190	118	75	25	97	0	O	0	O	99	S	0
NB 67730	33 3	77.7	18.8	2.57	142	189	128	87	21	100	0	O	0	O	30	MR	75
San Pastore	32 3	74.2	13.4	2 87	137	182	102	0	50	99	0	O	99	VS	99	S	0
Winalta	30.5	78.7	13.4	2 87	151	191	121	25	13	99	0	O	99	VS	30	S	75
INIA 66	30.1	79.2	16.5	2.58	126	184	80	0	30	98	0	O	0	O	0	O	50
Bankuti 1201	27.5	75.5	15 0	2 73	146	188	125	75	19	100	0	O	80	MS	99	VS	50
Cappelle Desprez	24.4	66.1	16 6	2.70	158	193	88	0	30	100	0	O	60	MS	99	S	50
Riley 67	23.5	66 3	12.7	3 12	143	185	115	50	34	100	0	O	30	MR	99	VS	40
Heine VII	19.7	65 0	14 0	2 85	156	193	116	0	30	100	0	O	99	VS	99	S	0
Stadler	18 8	65 0	12.2	3.20	142	180	128	13	25	98	0	O	45	O-MS	74	O-VS	15
Felix	12 6	48 8	15.9	2.79	160	193	108	0	21	100	0	O	99	VS	99	S	0
Yorkstar	12.1	65.0	11 1	3.35	151	188	113	0	34	94	30	MR	99	VS	99	S	20
Gaines	11.1	65.0	15.2	2 91	151	186	80	0	19	99	0	O	0	O	99	VS	20
Odin	9.9	65.0	15.5	2.86	161	192	128	0	24	100	0	O	80	MS	99	VS	0
Mean	33.7	74.0	14 8	2 81	145	189	111.8	27.4	29.7	98.3	13		38		61		30
Coefficient of variation (%)	19.0	8.3	3.9	2.04	0.9	0 8	4.1	83.6	30 1	3.0							
standard error	3.2	3.1	0.4	0.04	0.7	0 7	2.3	16.2	4.5	1.5							

Table 17. (Continued)

Cultivar	Septoria Sev. %	Septoria Resp.	Shrinking %	Head fertility Seeds/Head	Spikelet fertility Seeds/Spikelet	Sterile spikelets %	1000 Kernel Wt. gms.
Sturdy	0	O	5.7	34.4	2.3	9.0	35.6
Bezostaia	40	MS	2.7	36.6	2.0	7.5	44.9
Arthur	99	S	2.7	33.1	2.0	9.2	41.5
Yung Kwang	0	O	7.6	38.7	2.2	10.1	40.3
Benhur	60	MS	0.9	42.0	2.3	8.8	36.5
Shawnee	0	O	2.2	37.0	2.1	12.3	36.9
Timwin	0	O	9.6	36.6	2.2	9.9	33.8
Fertodi 293	60	MS	2.7	27.9	1.7	15.6	34.9
Lerma Rojo 64	90	S	4.8	34.7	2.4	13.4	43.3
Purdue 4930A6-28-2-1	56	MS	1.1	34.6	2.1	12.9	35.5
Atlas 56	0	O	6.1	32.9	1.9	12.2	38.4
Parker	0	O	3.8	30.7	2.0	13.9	30.0
Scout 66	40	MS	3.1	28.6	1.9	13.7	39.5
Triumph 64	40	MS	4.2	25.9	1.9	17.4	38.8
Lancer	0	O	5.8	28.9	1.8	13.3	35.1
Blueboy	0	O	10.8	40.2	2.1	5.6	33.3
Gage	60	MR	4.6	32.6	2.0	12.0	34.7
NB 67730	30	MS	6.6	31.1	2.1	15.9	34.9
San Pastore	0	O	4.7	34.8	2.3	12.2	35.1
Winalta	0	O	6.0	33.2	2.1	13.5	33.1
INIA 66	80	S	5.0	31.9	2.5	17.8	42.7
Bankuti 1201	50	MS	4.0	30.3	2.0	15.1	32.5
Cappelle Desprez	0	O	36.8	29.8	1.9	21.0	31.3
Riley 67	0	O	14.9	38.0	2.2	10.9	23.7
Heine VII	0	O	12.2	34.1	1.9	19.6	28.6
Stadler	0	O	70.4	42.6	2.3	9.8	22.7
Felix	30	MS	56.5	31.2	1.7	20.5	20.6
Yorkstar	0	O	24.0	41.1	2.2	11.6	18.3
Gaines	50	MS	90.2	31.5	2.0	15.4	22.7
Odin	50	MS	77.4	44.7	2.1	17.1	16.6
Mean	28		16.2	34.3	2.1	13.2	33.2
Coefficient of variation (%)							7.1
Standard error							1.2

YUGOSLAVIA

Novi Sad

Cooperator: Slavko Borojević
Date of planting: Nov. 3, 1969
Precipitation during cycle of test: 665.2 mm.
Amount of irrigation applied: 62.5 mm.
Fertilizer used: 1150 kg./ha. of 119.5 N–92 P_2O_5–77 K_2O
General description of climatic conditions during test: Long cold spring, rainy summer.
Disease development: Favorable conditions for disease development.
Insect, weed or pest problems: None
Date of harvest: July 22, 1970
Area harvested for yield: 2 square meters
Dates when different notes were taken: None reported

Data in Table 18

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Table 18. Agronomic, grain quality and disease data for the 30 cultivars in the "2nd International Winter Wheat Performance Nursery" grown at Novi Sad, Yugoslavia, 1970.

Cultivar	Yield q/ha	Test weight kg/hl	Protein %	Lysine % of protein	Date of Flowering (Days from Jan. 1)	Date of Ripening (Days from Jan. 1)	Plant height cm.	Lodging %	Rust Leaf Sev. %	Rust Leaf Resp	Rust Stem Sev. %	Rust Stem Resp	Mildew %
Arthur	58.1	76.6	16.4	2.77	147	191	98	25	21	MS-X	0	O	0
Benhur	52.6	77.2	17.1	2.71	145	190	100	8	10	O-S	3	O-S	50
Timwin	52.4	73.0	16.2	2 89	152	192	90	62	24	R-X	0	O	50
Atlas 66	51.5	73.4	18.9	2.71	154	195	114	70	42	O-X	0	O	40
Gage	50.3	74.9	15.6	2.90	155	192	113	94	55	R	0	O	30
Parker	49.1	78.4	14 6	2.97	149	192	104	20	42	MS-S	0	O	50
Yung Kwang	48.5	72.2	14.2	2 94	148	190	105	67	94	S	0	O	30
Bankuti 1201	48.3	75.7	16.9	2.70	152	196	120	99	60	S	0	O	20
Stadler	48.1	76.3	14.8	2.85	150	191	118	63	5	O-S	55	O-S	50
Riley 67	48.0	72.8	15.2	2 99	150	192	112	94	0	O	27	S	50
Shawnee	46.5	77.1	15.3	2.79	154	191	124	80	84	S	0	O	50
Scout 66	46.5	75.3	16.5	2.75	149	192	103	75	25	MS-X	0	O	40
Fertodi 293	45 6	71.8	16.0	2.70	154	190	116	99	80	S	0	O	20
Bezostaia	45.3	75.2	16.0	2 82	150	192	95	15	30	MS-S	0	O	50
Purdue 4930A6-28-2-1	45 0	77.4	20.5	2 65	147	191	119	38	10	O-X	0	O	30
Triumph 64	44.6	76.6	16.4	2.77	145	189	102	75	75	S	0	O	60
NB 67730	43.8	74.7	18.2	2 66	149	192	120	94	31	R-X	0	O	10
Sturdy	42.3	74.6	15.2	2.79	148	190	81	0	17	R-MR	0	O	70
San Pastore	40.6	70.5	15.7	2.82	147	184	92	18	70	R-S	0	O	50
Lerma Rojo 64	40.3	73.7	18.1	2.64	140	183	88	58	17	R-S	0	O	50
INIA 66	38.1	76.3	16 6	2.70	140	183	77	0	0	O	0	O	90
Lancer	35.4	73.9	16.3	2.86	154	194	110	92	30	O-MS	0	O	20
Blueboy	35.0	67.4	15.3	2.97	159	196	104	0	99	S	0	O	30
Gaines	34.9	62.5	16.0	3 01	158	192	85	0	74	S	0	O	30
Yorkstar	34.8	65.1	15.2	2.99	158	195	105	75	94	S	0	O	20
Winalta	31.0	73.6	14.4	2.93	158	194	120	94	84	S	0	O	80
Cappelle Desprez	30 6	65.5	18.2	2.85	164	197	92	3	70	S	0	O	20
Heine VII	29.9	59.3	17.6	2.71	159	195	100	10	94	S	0	O	30
Odin	28.8	62.2	16.8	2.89	164	197	119	0	99	S	0	O	20
Felix	18.0	56.7	17.2	2.93	162	195	94	0	99	S	0	O	50
Mean	42.1	72.0	16.4	2.82	152	192	104	48	51		3		40
Coefficient of variation (%)	12.4	1.6	1.4	1.99	0.0	0.3	5.0	33.1					
Standard error	2.6	0.8	0.1	0.03	0.0	0.3	2.6	7.9					

YUGOSLAVIA

Zagreb

Cooperators: Josip Potocanac; Petar Javor

Date of planting: Nov. 15, 1969

Precipitation during cycle of test: Not reported

Amount of irrigation applied: Not reported

Fertilizer used: N = 140 kg./ha.; P_2O_5 (superphosphate) = 120 kg./ha.; K_2O (potassium salt) = 120 kg./ha.

General description of climatic conditions during test: Moderately continental

Disease development: Normal attack of powdery mildew, heavy attack of leaf rust and moderate attack of stem rust.

Insect, weed or pest problems: Standard

Date of harvest: July 24, 1970

Area harvested for yield: 3 square meters

Dates when different notes were taken: Shattering—Aug. 4, 1970; Lodging—July 2, 1970; Winter survival—March 31, 1970; Leaf rust—June 24, 1970; Stem rust—July 10, 1970; Mildew—June 16, 1970.

Data in Table 19

Table 19. Agronomic, grain quality and disease data for the 30 cultivars in the "2nd International Winter Wheat Performance Nursery" and 2 local cultivars grown at Zagreb, Yugoslavia, 1970.

Cultivar	Yield q/ha	Test weight kg/hl	Protein %	Lysine % of protein	Date of Flowering[a] (Days from Jan 1)	Date of Ripening[a] (Days from Jan 1)	Lodging[a] %	Shattering[a] %
Zg-5994/66[b]	47.9	75.2	12.8	2.95	154	184	0	5.6
Timwin	45.3	75.0	15.3	2.89	158	184	70	1.3
Bezostaia	45.0	76.7	13.4	2.90	153	186	0	0.3
Mura[b]	42.0	73.1	15.0	2.93	153	183	0	2.5
Yung Kwang	41.9	73.3	13.2	2.93	153	184	0	3.4
INIA 66	41.7	74.7	14.7	2.75	147	180	0	0.7
Gage	38.7	76.1	15.0	2.78	158	184	90	0.3
Parker	38.3	77.2	14.0	2.93	155	187	10	0.1
Atlas 66	36.8	74.9	18.3	2.66	156	186	85	0.4
Arthur	36.5	72.8	15.4	2.82	153	182	50	5.5
Lerma Rojo 64	36.4	72.9	15.2	2.81	148	181	0	0.1
Benhur	35.9	75.9	16.0	2.65	152	182	0	5.3
San Pastore	34.7	70.1	11.9	3.02	151	181	0	8.7
Riley 67	34.4	72.0	12.1	3.13	156	184	85	0.4
Fertodi 293	33.5	73.3	13.8	3.02	158	188	15	1.4
Shawnee	33.0	78.5	13.9	2.90	158	188	10	1.4
Scout 66	32.5	76.5	14.9	2.77	156	184	95	0.1
Bankuti 1201	31.8	76.6	15.3	2.79	157	190	95	0.2
Stadler	31.4	74.8	11.6	3.20	156	186	30	3.5
Purdue 4930A6-28-2-1	30.3	76.7	19.8	2.62	154	182	5	15.6
NB 67730	30.3	76.6	17.4	2.67	156	184	100	0.1
Triumph 64	29.9	77.3	14.7	2.83	152	181	85	0.0
Cappelle Desprez	29.5	64.9	15.6	2.80	164	192	0	2.4
Sturdy	29.3	71.6	14.1	2.84	152	183	0	0.2
Yorkstar	28.6	63.4	10.1	3.51	159	189	10	4.7
Lancer	27.3	75.0	13.9	3.00	158	188	90	0.2
Heine VII	26.5	67.3	13.9	2.64	163	191	0	0.9
Blueboy	25.8	63.0	13.1	3.01	159	190	0	3.3
Winalta	24.5	73.8	12.7	2.93	157	188	80	0.2
Felix	16.4	61.8	13.9	2.93	164	191	0	0.7
Odin	14.6	62.3	14.7	2.88	168	195	0	2.0
Gaines	14.4	53.6	13.3	3.10	160	190	0	0.2
Mean	32.6	72.0	14.4	2.90	156	186	31	2.2
Coefficient of variation (%)	14.8	2.8	5.1	2.99				
Standard error	2.4	1.0	0.4	0.04				

[a] One rep only. [b] Local cultivars.

Table 19. (Continued).

Cultivar	Winter Survival %	Rust				Mildew[a] Sev. %	Heading date[a] days from Jan. 1	Rachis break[a] %	Straw breaking after ripening[a] %
		Leaf[a]		Stem[a]					
		Sev. %	Resp.	Sev. %	Resp.				
Zg-5994/66[b]	86	5	MR	60	MS	25	147	5.0	2
Timwin	87	0	R	1	R	99	152	15.0	25
Bezostaia	95	40	MR	10	MR	99	149	15.0	0
Mura[b]	90	65	S	10	R	5	147	25.0	10
Yung Kwang	91	99	S	2	R	65	148	52.6	5
INIA 66	89	5	R	0	O	99	136	5.0	0
Gage	90	0	R	25	MR	40	149	26.3	0
Parker	92	2	MR	80	S	99	148	55.0	0
Atlas 66	92	25	MR	10	MR	65	150	15.0	80
Arthur	90	25	MR	25	MR	40	147	55.0	0
Lerma Rojo 64	90	40	MR	0	O	99	139	14.3	0
Benhur	89	1	R	25	MS	65	145	5.0	0
San Pastore	89	99	S	20	O	99	145	15.0	10
Riley 67	90	5	R	90	S	99	150	30.0	0
Fertodi 293	89	65	S	25	MR	25	150	33.3	2
Shawnee	92	5	R	1	R	65	150	26.3	5
Scout 66	89	40	S	25	MR	10	148	30.0	0
Bankuti 1201	91	40	MS	10	S	65	151	31.6	10
Stadler	90	5	R	80	S	99	150	42.1	0
Purdue 4930A6-28-2-1	89	5	R	10	MS	40	148	5.0	2
NB 67730	91	5	R	10	MS	40	147	38.1	10
Triumph 64	91	30	S	5	MR	99	144	40.0	5
Cappelle Desprez	92	25	R	25	S	40	161	14.3	40
Sturdy	92	1	R	40	MS	99	147	8.7	0
Yorkstar	92	100	S	95	S	25	155	9.5	20
Lancer	90	40	MR	10	MR	40	152	16.7	0
Heine VII	93	99	S	60	S	65	159	30.0	80
Blueboy	67	30	S	60	S	65	154	20.0	2
Winalta	84	99	S	5	MR	80	155	25.0	0
Felix	90	80	S	25	MS	65	161	40.0	8
Odin	90	65	S	40	S	10	165	45.0	25
Gaines	91	65	S	80	S	65	155	45.0	90
Mean	89	41		30		63	150	26.1	14
Coefficient of variation (%)	3.7								
Standard error	1.6								

[a] One rep only. [b] Local cultivars.

HUNGARY

Martonvasár

Cooperator: S. Rajki

Date of planting: Oct. 30, 1969

Precipitation during cycle of test: 627 mm.

Amount of irrigation applied: None

Fertilizer used: N = 100kg./ha.; P_2O_5 = 42 kg./ha.; K_2O = 40 kg./ha.

General description of climatic conditions during test: Wetter and cooler than usual.

Disease development: Strong stem rust attack.

Insect, weed or pest problems: Fly attack in fall and spring.

Date of harvest: Early group July 22, 1970; remainder on July 31, 1970.

Area harvested for yield: 3 square meters

Dates when different notes were taken: Mildew—June 4, 1970; Stripe rust—July 8, 1970; Plant height—July 10, 1970; Lodging—July 13, 1970; Shattering—August 10, 1970.

Data in Table 20

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Table 20. Agronomic, grain quality and disease data for the 30 cultivars in the "2nd International Winter Wheat Performance Nursery" grown at Martonvasar, Hungary, 1970.

Cultivar	Yield q/ha	Test weight kg/hl	Protein %	Lysine % of protein	Date of Flowering (Days from Jan 1)	Date of Ripening (Days from Jan 1)	Plant height cm	Lodging %	Shattering[a] %	Stem rust Sev. %	Mildew Sev %
Scout 66	40.4	83.2	14.7	2.91	155	193	103	20	3	0	50
Gage	39.6	82.4	15.8	2.72	158	194	102	30	6	0	70
Heine VII	39.4	79.9	14.7	2.75	165	201	91	70	5	20	90
Yorkstar	39.2	78.3	13.7	2.85	161	200	94	35	4	40	60
Arthur	37.9	82.4	16.1	2.77	154	192	94	55	9	0	10
Bezostaia	37.7	84.7	14.3	2.81	156	195	89	70	3	0	80
Atlas 66	37.0	79.9	19.4	2.62	159	196	118	45	6	0	70
Stadler	36.1	83.1	15.2	2.81	158	196	105	50	4	20	90
Riley 67	36.1	80.5	15.5	2.76	158	192	102	35	4	0	100
Lancer	35.5	83.2	14.6	2.87	159	195	111	15	6	0	60
Fertodi 293	35.1	79.3	16.3	2.74	158	195	106	15	2	20	70
Benhur	34.8	82.6	16.8	2.64	152	191	100	65	8	20	90
NB 67730	33.4	81.8	18.4	2.57	156	193	116	20	0	10	70
Timwin	33.3	80.9	15.9	2.77	159	197	80	35	6	0	60
Barkuti 1201	33.3	84.5	16.3	2.66	159	196	121	20	0	40	80
Purdue 4930A6-28-2-1	32.5	81.9	20.3	2.62	155	193	110	60	14	0	60
Parker	32.0	85.1	15.0	2.81	155	192	95	60	5	0	90
Winalta	31.9	83.6	15.2	2.77	162	200	116	10	5	20	80
San Pastore	31.5	79.3	14.0	2.80	152	191	86	65	4	60	80
Felix	31.3	78.3	14.6	3.01	166	202	86	70	7	70	70
Shawnee	30.7	83.1	15.0	2.81	158	195	107	40	6	20	90
Cappelle Desprez	29.8	74.5	16.7	2.71	165	202	84	55	8	20	60
Gaines	29.2	77.1	14.1	2.93	161	199	71	60	0	20	70
Triumph 64	28.1	84.0	16.1	2.71	153	191	97	30	3	0	90
Yung Kwang	27.7	79.4	16.0	2.83	154	193	92	55	13	20	100
Sturdy	27.4	81.0	13.9	2.91	153	192	70	90	0	0	100
Lerma Rojo 64	26.7	83.2	16.3	2.63	147	190	85	40	3	20	100
Blueboy	23.2	76.1	17.4	2.70	162	199	72	70	10	50	60
Odin	18.4	73.1	15.8	2.82	168	205	99	65	12	80	50
INIA 66	.								.	.	
Mean	32.7	81.0	15.8	2.77	158	196	97	46.6	5.4	18	72
Coefficient of variation (%)	13.5	1.4	2.7	2.75	0.4	0.9	3.6	25.0			
Standard error	2.2	0.6	0.2	0.04	0.3	0.9	1.7	5.8			

[a] One rep only.

ROMANIA

Fundulea

Cooperators: T. E. Muresan; N. Eustatin; Gh Ittu

Date of planting: Oct. 10, 1969

Pricipitation during cycle of test: 693.7 mm. (Aug. 1, 1969 to July 1, 1970)

Amount of irrigation applied: 400 mm.

Fertilizer used: N = 100 kg./ha.; P_2O_5 = 50 kg./ha.

General description of climatic conditions during test: The autumn was excessively droughty; winter was mild; amount of spring precipitation greater than normal.

Disease development: Favorable conditions for development of both stem rust and *Fusarium graminearium*.

Insect, weed or pest problems: None

Date of harvest: July 8, 1970

Area harvested for yield: 3 square meters

Dates when different notes were taken: Winter survival—March 26, 1970; Stripe rust—June 10, 1970; Leaf rust—June 13, 1970; Stem rust—June 20, 1970; Plant height—June 20, 1970; *Fusarium graminearium*—June 25, 1970; Lodging—June 29, 1970.

Data in Table 21

Table 21. Agronomic, grain quality and disease data for the 30 cultivars in the "2nd International Winter Wheat Performance Nursery" and 4 local cultivars grown at Fundulea, Romania, 1970.

Cultivar	Yield q/ha	Test weight kg/hl	Protein %	Lysine % of protein	Date of Flowering (Days from Jan 1)	Date of Ripening (Days from Jan 1)	Plant height cm.	Lodging %	Shattering %	Frost damage 0–9	Rust: Stripe Sev %	Rust: Stripe Resp	Rust: Leaf Sev %	Rust: Leaf Resp	Rust: Stem Sev %	Rust: Stem Resp	Fusarium graminearum[a] %
Scout 66	45.6	81.6	14.4	2.80	139	181	114	65	0.3	0.8	0	O	27	S	0	O	2.0
Timwin	44.7	76.6	14.7	2.88	144	181	95	53	1.3	0.8	16	S	15	R-S	0	O	2.8
Arthur	44.2	80.0	15.2	2.77	138	179	106	11	1.0	1.0	10	S	11	R-S	0	O	6.5
Gage	43.2	79.5	14.4	2.84	141	181	118	25	0.6	0.5	2	S	22	MS-X	0	O	0.5
Stadler	43.0	81.7	14.6	2.92	141	178	120	11	0.5	0.0	32	S	8	R-MR	37	S	5.5
Riley 67	42.6	79.9	15.5	2.85	140	180	117	33	1.0	0.5	10	MS	0	O	13	S	0.3
Dacia[c]	42.3	76.9	16.4	2.82	139	182	100	8	0.3	0.0	0	O	18	MS-S	0	O	3.3
Lancer	42.1	81.[illegible]	14.0	2.91	146	184	123	53	0.3	0.5	0	O	14	MS-X	0	O	2.5
Excelsior[c]	41.5	78.[illegible]	15.0	2.74	136	178	99	0	0.2	0.0	0	O	35	S	0	O	9.3
Yung Kwang	41.3	77.0	14.1	2.90	139	181	105	13	0.8	0.0	15	S	87	S	0	O	3.8
Benhur	40.4	80.9	16.2	2.71	136	180	107	3	1.0	1.0	26	S	8	R-MR	0	O	17.5
Shawnee	40.1	80.8	12.9	2.96	142	182	126	8	0.5	0.5	0	O	90	S	0	O	4.0
Parker	40.0	80.8	14.8	2.81	139	182	108	25	0.9	0.3	27	S	12	R-S	0	O	3.0
Fertodi 293	39.7	77.2	14.1	2.93	145	181	125	48	0.4	0.3	0	O	67	S	0	O	1.8
NB 67730	39.3	79.9	16.3	2.69	138	181	121	73	0.4	0.3	0	O	32	MR-X	0	O	0.0
Triumph 64	38.8	81.6	15.5	2.77	134	177	107	63	0.9	0.3	6	S	72	S	0	O	0.8
Moldova[c]	38.4	78.2	17.5	2.69	136	180	101	15	1.3	0.0	0	O	18	MR-R	0	O	3.8
Favorit[c]	38.1	77.9	15.9	2.78	138	181	96	50	0.4	0.0	0	O	60	S	0	O	0.8
Sturdy	36.9	78.6	15.9	2.67	136	180	84	0	0.9	0.0	0	O	15	MR-X	2	O-S	3.3
San Pastore	36.5	76.3	13.3	2.86	136	176	95	0	1.9	1.3	0	O	77	S	0	O	0.5
Bezostaia	35.9	79.5	14.2	2.82	141	183	96	3	0.8	0.8	0	O	45	S	0	O	9.0
Bankuti 1201	34.8	80.9	15.3	2.72	146	182	130	43	0.4	0.5	0	O	47	MS S	0	O	0.0
Purdue 4930A6 28 2-1	34.7	80.1	17.5	2.68	141	181	118	3	0.4	0.8	7	S	17	MR-X	0	O	9.5
Winalta	34.2	81.0	13.8	2.83	149	182	128	50	0.4	0.5	11	MS	50	S	0	O	0.0
Yorkstar	31.8	71.6	11.3	3.30	148	183	115	18	0.4	1.3	6	S	90	S	0	O	1.5
Atlas 66	30.8	75.7	18.6	2.59	145	188	113	44	0.8	1.5	7	S	19	R-MR	0	O	0.8
Heine VII	24.1	71.1	15.3	2.73	123	185	109	1	0.1	1.3	0	O	82	S	0	O	1.0
Lerma Rojo 64	23.2	74.2	17.3	2.69	135	179	85	13	0.4	4.3	0	O	20	MS-S	0	O	16.3
Gaines	22.2	65.5	16.1	2.81	148	182	83	0	0.2	0.8	0	O	87	S-S	11	MS-S	6.3
Felix	21.0	71.6	13.8	2.96	157	186	105	0	0.3	1.0	0	O	57	O-S	0	O	0.8
Blueboy[b]	20.8	68.0	14.6	2.84	149	182	99	0	0.2	1.0	2	MS	90	S	0	O	6.3
Cappelle Desprez	19.7	65.3	18.1	2.62	157	185	99	0	0.3	1.0	0	O	30	MS-X	8	O-S	0.0
INIA 66	17.7	77.5	16.1	2.73	134	179	77	0	0.3	4.3	0	O	13	MR-X	0	O	25.0
Odin	11.8	63.0	15.9	2.73	127	187	127	0	0.5	0.8	0	O	75	S	5	S	0.0
Mean	34.7	76.8	15.1	2.81	141	181	107	21	0.6	0.9	5.2		41.5		2.2		4.4
Coefficient of variation (%)	13.4	1.8	2.7	2.48	0.3	0.0	3.7	76.1	74.9	48.6							
Standard error	2.3	0.7	0.2	0.03	0.2	0.0	2.0	8.3	0.2	0.2							

[a] Percent of contaminated heads
[b] Poor stand from poor seed germination
[c] Local cultivars

BULGARIA

Tolbukhin

Cooperators: B. Simeonov; G. Petrov

Date of planting: Dec. 6, 1969

Precipitation during cycle of test: 470 mm.

Amount of irrigation applied: None

Fertiiizer used: N (NH_4NO_3) = 100 kg./ha.; P_2O_5(Ca (H_2PO_4)$_2$) = 170 kg./ha.

General description of climatic conditions during test: Dry autumn; mild favorable winter; spring with light drought; wet summer.

Disease development: Rusts and mildew infections.

Insect, weed or pest problems: None

Date of harvest: July 2–21, 1970

Area harvested for yield: 3 square meters

Dates when different notes were taken: Mildew—June 15, 1970; Leaf rust—June 24, 1970; Stem rust—June 24, 1970; Plant height—June 12, 1970; Lodging—June 20, 1970.

Data in Table 22

Table 22. Agronomic and disease data for the 30 cultivars in the "2nd International Winter Wheat Performance Nursery" and one local cultivar grown at Tolbukhin, Bulgaria, 1970.

Cultivar	Yield q/ha	Test weight kg/hl	Date of Flowering (Days from Jan. 1)	Date of Ripening (Days from Jan. 1)	Plant height cm.	Lodging %	Shattering %	Rust Leaf Sev. %	Rust Leaf Resp	Rust Stem Sev. %	Rust Stem Resp.	Mildew Sev. %
Arthur	54.8	79.0	149	190	83	0	3.68	5	MR	0	O	5
Kavkaz[a]	52.5	78.9	159	195	100	0	0.98	0	O	0	O	0
Scout 66	51.5	79.6	155	190	93	75	0.00	25	MS	0	O	45
Atlas 66	48.9	77.6	160	195	96	16	1.68	1	R	0	O	50
Timwin	48.5	78.0	153	192	75	0	2.20	5	R	0	O	65
Gage	47.9	79.1	158	194	105	10	0.38	5	R	0	O	30
Lancer	47.3	78.9	160	194	109	65	0.43	5	R	0	O	30
Benhur	47.1	80.3	145	187	84	0	0.80	5	MR	0	O	40
Yung Kwang	45.6	76.5	152	189	97	3	0.25	65	MS	0	O	80
NB 67730	44.0	79.2	154	190	105	40	0.08	5	R	0	O	40
Parker	43.2	81.9	150	190	91	0	0.18	5	MR	0	O	30
Fertodi 293	42.3	76.5	158	192	101	20	0.23	80	MS	0	O	25
Riley 67	40.5	78.0	153	189	96	0	1.40	1	R	0	O	65
Purdue 4930A6-28-2-1	39.5	79.7	155	190	101	0	5.18	5	R	0	O	30
Bankuti 1201	38.5	78.3	158	192	104	58	0.13	25	MR-MS	0	O	65
San Pastore	36.1	76.4	147	184	74	0	1.28	65	MR-MS	0	O	65
Yorkstar	35.8	68.5	161	192	96	20	2.65	80	MS	25	MS	30
Bezostaia	34.3	79.0	153	191	76	0	0.20	65	MR-MS	0	O	60
Sturdy	33.9	79.0	146	187	70	0	0.65	5	R	0	O	80
Cappelle Desprez	33.4	64.8	171	201	95	0	1.75	5	R	0	O	15
Winalta	33.1	75.6	163	197	117	53	0.23	65	MS	0	O	[illegible]
Triumph 64	33.1	81.1	146	187	86	8	0.98	40	MS	0	O	80
Stadler	33.1	78.4	153	189	95	0	[illegible].53	5	R	1	R	65
Shawnee	32.8	78.5	159	193	108	0	0.18	65	MS	0	O	80
Lerma Rojo 64	27.4	78.1	139	183	79	0	0.20	10	MR	0	O	80
Heine VII	27.0	68.5	166	198	95	0	0.85	80	MS	0	O	65
INIA 66	26.8	79.9	138	182	68	0	0.15	1	R	0	O	80
Blueboy	25.7	67.1	167	199	91	0	1.45	65	MS	0	O	20
Gaines	21.5	65.3	162	194	75	0	0.10	65	MS	40	S	40
Felix	18.2	63.2	172	202	95	0	0.95	40	MR-MS	0	O	40
Odin	10.1	52.0	172	202	117	0	0.25	65	MS	0	O	40
Mean	37.2	75.4	156	192	93	12	0.97	31		2		49
Coefficient of variation (%)	13.7	0.4	0.1	0.0	0.0	130.2	91.02	.				
Standard error	2.5	0.1	0.05	0.0	0.0	8.0	0.44	.				

[a] Local cultivar

TURKEY

Ankara

Cooperators: Ahmet Demirlicakmak; H. P. H. Johnson
Date of planting: Oct. 10, 1969
Precipitation during cycle of test: 303 mm.
Amount of irrigation applied: None
Fertilizer used: N_{20}-P_{60} kg./ha.; diammonium phosphate used.
General description of climatic conditions during test: Fall and spring were very dry.
Disease development: None
Insect, weed or pest problems: None reported
Date of harvest: Aug. 7, 1970
Area harvested for yield: 3 square meters
Dates when different notes were taken: None reported

Data in Table 23

Table 23. Agronomic and grain quality data for the 30 cultivars in the "2nd International Winter Wheat Performance Nursery" grown at Ankara, Turkey, 1970.

Cultivar	Yield q/ha	Test weight[a] kg/hl	Protein %	Lysine % of protein	Date of Flowering[a] (Days from Jan 1)	Date of Ripening[a] (Days from Jan 1)	Plant height[a] cm	Winter survival[a] %
Yorkstar	46.8	75.3	11.5	3.24	154	189	98	99
Bezostaia	44.0	82.5	13.1	2.96	150	189	93	99
Shawnee	43.1	82.1	13.4	2.87	155	189	111	99
Timwin	42.7	80.1	13.6	2.88	154	189	92	99
Scout 66	42.3	83.0	13.0	2.89	156	189	103	99
Bankuti 1201	40.1	78.6	15.1	2.81	154	189	110	99
Lancer	39.0	82.4	11.9	2.97	157	189	111	99
Arthur	38.9	83.1	13.5	2.89	151	189	91	99
NB 67730	38.4	82.4	15.4	2.72	153	189	106	99
Gage	38.4	81.2	14.0	2.90	153	189	104	99
Stadler	37.7	79.6	12.8	3.01	154	189	93	99
Yung Kwang	35.8	78.2	15.0	2.70	150	189	83	99
Lerma Rojo 64	35.6	82.0	16.2	2.72	142	189	84	96
Riley 67	35.1	82.5	13.7	2.91	155	189	101	99
Parker	34.8	84.9	14.2	2.78	149	189	74	99
Fertodi 293	34.6	81.2	15.9	2.73	154	189	100	99
Triumph 64	34.0	85.1	14.4	2.75	145	189	99	99
Sturdy	33.6	82.2	15.9	2.70	150	189	68	99
San Pastore	32.7	81.6	13.7	2.82	154	189	77	99
Benhur	32.6	82.7	13.8	2.75	150	189	86	99
Purdue 4930A6-28-2-1	31.4	81.1	15.6	2.72	154	189	98	99
Gaines	31.2	81.1	10.8	3.25	157	208	73	99
Winalta	31.0	84.5	14.2	2.83	156	208	111	99
Blueboy	30.7	78.1	13.6	2.89	153	208	91	99
Felix	26.2	77.9	14.7	2.78	161	208	84	99
Heine VII	26.1	79.4	14.0	2.78	156	208	95	99
Atlas 66	25.9	79.1	19.0	2.69	156	208	107	99
Odin	25.0	78.4	15.2	2.87	165	208	105	99
Cappelle Desprez	23.6	75.7	16.7	2.66	160	208	81	99
INIA 66	15.5	82.4	15.8	2.66	143	189	61	85
Mean	34.2	81.0	14.3	2.84	153	194	93	98
Coefficient of variation (%)	11.7		7.4	3.4				
Standard error	2.0		0.5	0.05				

[a] One rep only

TURKEY

Eskisehir

Cooperators: Rifat Gerek: Huseyin Kutluk; H. P. H. Johnson

Date of planting: Dec. 4, 1969

Pricipitation during cycle of test: 177.8 mm. (Sept. 1, 1969–Aug. 31, 1970).

Amount of irrigation applied: None

Fertilizer used: None

General description of climatic conditions during test: Unfavorable and dry fall; very mild and rainy winter; very dry and cool spring; early summer.

Disease development: Late stripe rust development; very little leaf rust; no stem rust.

Insect, weed or pest problems: 2,4-D herbicide applied twice

Date of harvest: July 30, 1970

Area harvested for yield: 3 square meters

Dates when different notes were taken: Frost damage—March 1, 1970; Flowering dates—May 15–June 30, 1970; Ripening dates—June 1–July 25, 1970; Plant height—July 20, 1970; Lodging—July 20, 1970; Shattering—Aug. 1, 1970; Stripe rust—June 15, 1970; Leaf rust—June 20, 1970; Stem rust—June 30, 1970.

Data in Table 24

Table 24. Agronomic, grain quality and disease data for the 30 cultivars in the "2nd International Winter Wheat Performance Nursery" grown at Eskisehir, Turkey, 1970.

Cultivar	Yield q/ha	Protein %	Lysine % of protein	Date of Flowering (Days from Jan. 1)	Date of Ripening (Days from Jan. 1)	Plant height cm.	Lodging %	Frost damage 0–9	Rust: Stripe Sev. %	Rust: Stripe Resp.	Rust: Leaf Sev. %	Rust: Leaf Resp.
Heine VII	26.6	14.4	2.80	161	202	66	0.0	1.0	1	R	1	MS
Lerma Rojo 64	20.1	16.7	2 69	142	185	60	0 0	3.0	1	R	1	MR
Parker	19.6	13.8	2.86	147	194	61	0.0	0.3	10	R-MR	1	MR
Bezostaia	19.6	12.9	2.96	151	194	65	0.0	0.0	1	R	1	R
NB 67730	17.2	15.8	2.70	152	195	85	5 0	0.0	8	MS	1	R
Triumph 64	17.0	15.6	2.73	143	188	55	0.0	1.0	1	R	1	R
Yorkstar	17.0	12.1	3 05	157	196	74	0.0	2.0	89	S	1	R
Gaines	16.8	11.2	3.19	159	198	45	0 0	0.0	75	MS-S	1	MS
Bankuti 1201	16 6	15.5	2.80	158	202	71	3.8	1.0	3	MR	1	MR
Timwin	16.5	14.7	2.83	154	198	51	0.0	1.0	7	S	1	R
Lancer	16.2	12.5	2.92	156	195	73	3.5	0.0	1	R	0	MS
San Pastore	16.0	14.5	2.86	143	187	68	0.0	2.0	1	R	0	MR
Winalta	16.0	14.2	2 80	161	199	78	4.3	0.0	1	R	1	R
Stadler	16.0	13.8	2.97	151	191	75	4.5	1.0	75	S	1	R
Cappelle Desprez	15.9	15.3	2.74	167	205	73	0.0	1.0	1	R	0	O
Atlas 66	15.8	16.7	2.76	154	195	95	0.0	2.0	75	S	1	R
Shawnee	15.8	14.2	2.81	154	197	78	4.5	0 0	80	S	1	R
Blueboy	14.6	14.3	2.87	155	204	51	0 0	2.0	8	S	0	MR-MS
Scout 66	14.5	13.0	3 04	149	191	75	0.0	1.0	1	R	1	MR
Arthur	14.4	13.0	3.02	145	190	65	0 0	1.0	45	MS	1	R
Gage	13.8	13.6	2.85	156	204	61	4.0	1.0	10	S	1	R
Fertodi 293	12.8	13.3	2.85	157	194	81	3.5	1 0	1	R	1	MR
Benhur	12.7	14.6	2.84	144	191	54	0 0	1.0	45	MS	1	R
Yung Kwang	12.2	14.5	2.81	150	193	56	0 0	1 0	8	S	1	R
Riley 67	11.9	12.6	3.01	152	193	56	0.0	1.0	8	MS-S	1	MR-MS
Felix	11.0	17.0	2.75	173	190	75	0.0	1.0	1	R	1	MR
INIA 66	10.8	15.8	2.69	139	184	56	0.0	4.0	1	R	1	R
Sturdy	10.6	15.6	2.70	151	192	49	0.0	1.0	1	R	1	R
Purdue 4930A6-28-2-1	10.6	17.3	2.72	151	194	75	4 0	1.0	45	S	1	R
Odin	10.5	16.1	2.86	181	195	65	4.0	1.0	1	R	1	MS
Mean	15.3	14.5	2.85	154	194	66	1.4	1.1	20		0.9	
Coefficient of variation (%)	27.3	5.3	2.85	1.2	0.64	3.7	45.4	8.5				
Standard error	2.1	0.4	0.04	0.9	0.62	1.2	0.3	0.05				

IRAQ

Sulaimaniya

Cooperators: C. L. Pan; Izzeddin Al-Salihi)

Date of planting: Oct. 30, 1969

Precipitation during cycle of test: 510 mm.

Amount of irrigation applied: None

Fertilizer used: Compound (20-20-0) = 200 kg./ha. before planting; ammonium sulfate (20% N) = 200 kg./ha. in February.

General description of climatic conditions during test: Climatic conditions normal. No frost during season.

Disease development: Leaf rust and stripe rust only.

Insect, weed or pest problems: Birds were a problem, primarily with early cultivars.

Date of harvest: June 25, 1970 .

Area harvested for yield: 6 square meters

Dates when different notes were taken: Flowering dates—April and May, 1970; Ripening dates—May and June, 1970; Plant height—May and June, 1970; Diseases—April, 1970.

Data in Table 25

Table 25. Agronomic and disease data for the 30 cultivars in the "2nd International Winter Wheat Performance Nursery" grown at Sulaimaniya, Iraq, 1970.

Cultivar	Yield q/ha	Test weight gms/unit	Date of Flowering (Days from Jan 1)	Date of Ripening (Days from Jan 1)	Plant height cm	Rust: Stripe Resp.	Rust: Leaf Resp.	Rust: Stem Resp.
Bezostaia	17.1	89.3	116	145	111	O-VR	O-O	O-O
Lerma Rojo 64	15.9	89.3	99	139	101	MR-MR	O-VR	O-O
Sturdy	14.9	80.0	113	146	90	O-O	O-O	O-O
Scout 66	14.6	88.0	118	146	130	O-MR	O-VR	O-O
INIA 66	14.1	89.3	90	139	93	O-S	O-O	O-O
San Pastore	13.7	82.5	110	144	101	O-O	VR-MR	O-VR
Heine VII	12.6	89.8	120	154	101	O-O	VR-MS	O-MS
Triumph 64	12.1	89.5	110	142	108	VS-VS	O-S	O-O
Parker	12.0	83.8	113	143	109	O-MS	O-VR	O-O
Blueboy	11.9	79.3	116	146	110	O-MS	VR-MR	O-VR
Lancer	11.7	83.8	121	151	120	O-VR	O-VR	O-O
Shawnee	11.6	90.0	117	147	99	MS-VS	O-O	O-MR
NB 67730	10.0	84.3	118	148	133	R-MS	O-MR	O-MR
Fertodi 293	9.3	78.8	120	149	130	R-MR	VR-VR	O-O
Winalta	9.2	90.0	121	151	131	O-MS	VR-MR	O-O
Arthur	8.9	80.0	111	143	104	VS-VS	O-O	O-O
Gage	8.6	84.8	117	145	115	MS-VS	O-VS	O-O
Timwin	8.6	73.3	120	146	93	VS-VS	O-MS	O-VR
Riley 67	8.4	90.8	112	143	119	MS-VS	O-VR	O-VR
Benhur	8.4	84.0	110	142	103	VS-VS	O-O	O-MS
Cappelle Desprez	8.1	70.5	137	163	93	O-MR	O-VR	O-O
Felix	7.3	70.5	132	160	85	O-O	MR-VS	O-MS
Atlas 66	7.3	80.0	115	144	143	MS-VS	O-O	O-VS
Yorkstar	6.8	79.5	119	148	100	VS-VS	O-VS	MR-VS
Yung Kwang	6.6	74.3	118	148	115	VS-VS	O-VS	O-MS
Gaines	6.6	74.8	121	152	81	VS-VS	O-O	O-VS
Odin	5.9	69.5	141	171	103	O-O	VR-MR	O-O
Stadler	5.7	83.8	113	144	120	VS-VS	O-O	O-VS
Bankuti 1201	4.8	79.5	120	150	130	MR-MS	VR-MR	O-O
Purdue 4930A6-28-2-1	4.7	78.3	116	146	101	VS-VS	O-MS	O-VS
Mean	9.9	82.0	117	148	109			
Coefficient of variation (%)	11.1	3.5	3.4	1.6	6.3			
Standard error	0.5	1.5	2.0	1.2	3.4			

IRAN

Karaj

Cooperators: H. C. Thorpe; M. A. Vahabian; T. Mahlooji

Date of planting: Oct. 9, 1969

Precipitation during cycle of test: 170 mm.

Amount of irrigation applied: Not reported

Fertilizer used: N (urea) = 120 kg./ha.; P_2O_5 (ammonium phosphate)–70 kg./ha.

General description of climatic conditions during test: Exceptionally hot in early spring causing early heading (~ 20 days earlier than normal).

Disease development: No infections occurred.

Insect, weed or pest problems: Weeding done three times but still some damage.

Date of harvest: July 1, 1970

Area harvested for yield: 3 square meters

Dates when different notes were taken: Plant height—shortly before harvest; Lodging—shortly before harvest; Winter survival—April 10, 1970; Stripe rust—June 1, 1970.

Data in Table 26

Table 26. Agronomic, grain quality and disease data for the 30 cultivars in the "2nd International Winter Wheat Performance Nursery" and 2 local cultivars grown at Karaj, Iran, 1970.

Cultivar	Yield q/ha	1000 Kernel wt gms	Protein %	Lysine % of protein	Date of flowering days from Jan. 1	Plant height cm.	Winter survival %	Stripe rust	
								Sev. %	Resp.
Timwin	31.3	39.0	11.8	3.07	115	75	93	1	MS
1-44-1392[a]	30.8	39.3			103	94	95	3	O-S
Gaines	30.0	33.3	10.1	3.32	118	73	95	5	MS-S
Omid[a]	29.6	51.3			110	99	98	5	O-S
Bezostaia	28.2	45.8	10.7	3.16	106	83	97	0	O
Yorkstar	26.9	41.3	11.1	3.23	117	93	96	3	S
Triumph 64	26.0	38.8	10.8	3.11	104	83	95	0	O
Yung Kwang	25.6	41.5	12.2	3.02	111	85	96	3	S
NB 67730	25.2	38.3	11.7	3.18	105	94	98	0	O
Scout 66	25.0	42.3	10.7	3.15	105	79	97	0	O
Lerma Rojo 64	25.0	40.8	12.3	3.02	101	70	94	0	O
Fertodi 293	24.9	37.0	10.5	3.21	108	95	99	0	O
Lancer	24.4	38.3	11.2	3.08	112	89	89	0	O
Gage	24.0	39.0	10.8	3.22	109	83	92	0	O
Atlas 66	21.0	36.5	14.7	2.80	105	86	98	0	O
Stadler	23.5	37.8	12.4	3.06	109	91	92	0	O
Shawnee	23.3	36.8	11.4	3.08	118	88	87	0	O
Winalta	22.9	40.3	11.8	3.02	117	95	84	0	O
Bankuti 1201	22.9	43.8	11.3	3.08	103	98	98	1	S
Heine VII	22.9	37.8	11.1	3.13	117	85	98	0	O
Riley 67	22.2	39.8	11.3	3.19	109	88	90	0	O
Cappelle Desprez	21.8	37.5	12.3	3.05	114	86	98	0	O
Parker	21.4	40.8	13.8	2.87	111	79	87	0	O
Felix	21.1	39.0	14.1	2.89	126	74	87	0	O
Arthur	20.5	39.0	11.5	3.16	111	72	95	0	O
San Pastore	20.5	41.3	10.5	3.25	108	71	95	0	O
Benhur	20.1	37.5	11.8	3.26	106	74	99	0	O
Blueboy	18.5	34.8	11.4	3.13	115	75	76	1	MS
Sturdy	18.4	38.3	13.0	2.89	115	73	88	0	O
Purdue 4930A6-28-2-1	17.5	38.3	13.1	3.00	109	85	95	0	O
Odin	16.7	30.0	13.5	3.10	133	91	76	0	O
INIA 66	16.1	40.5	13.0	2.97	99	56	83	0	O
Mean	23.0	38.8	11.8	3.09	111	82	92	0.7	
Coefficient of variation (%)	17.4	8.7	13.3	5.73	6.5	11.7	10.8		
Standard error	2.0	1.7	0.8	0.09	3.6	4.8	5.0		

[a] Local cultivars

IRAN

Mashad

Cooperators: H. C. Thorpe; A. Bahador

Date of planting: Dec. 1, 1969

Precipitation during cycle of test: 173.5 mm.

Amount of irrigation applied: 3 applications (amount not reported)

Fertilizer used: N (urea) = 120 kg./ha.; P_2O_5 (ammonium phosphate) = 60 kg./ha.

General description of climatic conditions during test: About normal

Disease development: Normal

Insect, weed or pest problems: Bird damage (about 20%) to early cultivars

Date of harvest: July 1, 1970

Area harvested for yield: 3 square meters

Dates when different notes were taken: Stripe rust—May 12, 1970; Lodging—June 1, 1970.

Data in Table 27

Table 27. Agronomic, grain quality and disease data for the 29 cultivars in the "2nd International Winter Wheat Performance Nursery" and 1 local cultivar grown at Mashad, Iran, 1970.

Cultivar	Yield q/ha	Protein %	Lysine % of protein	Date of Flowering (Days from Jan 1)	Date of Ripening (Days from Jan 1)	Plant height cm.	Lodging %	Shattering %	1000 Kernel wt.	Stripe rust Sev. %	Stripe rust Resp.
Arthur	43.3	17.3	2.69	127	173	68	0.5	0.75	35.4	4	S
Shawnee	42.7	17.9	2.62	132	173	70	0.5	1.00	36.0	5	S
Blueboy	37.8	15.9	2.76	124	173	69	0.5	1.00	33.9	6	S
Benhur	34.4	16.7	2.74	132	173	59	0.0	1.25	35.7	5	S
Winalta	34.2	15.8	2.81	132	173	75	1.0	1.25	33.8	15	S
Firoozeh[a]	33.3	15.3	2.75	131	173	77	0.0	0.50	35.3	5	S
Lancer	31.4	16.4	2.76	129	173	66	0.3	1.00	33.6	10	S
Yung Kwang	31.3	15.7	2.78	123	173	71	0.0	1.00	33.5	13	S
Parker	31.2	15.4	2.71	129	173	73	1.3	0.50	36.0	11	S
Cappelle Desprez	30.7	16.6	2.90	129	173	46	0.0	2.00	34.9	0	O
Riley 67	30.7	16.1	2.72	127	173	72	0.0	0.50	36.5	9	S
Triumph 64	30.3	17.4	2.68	132	173	72	0.0	0.75	36.1	9	S
Timwin	30.3	15.4	2.79	132	173	68	0.5	0.75	36.0	1	S
INIA 66	30.3	15.9	2.76	134	173	66	1.0	1.25	34.7	4	S
Sturdy	30.1	17.5	2.73	126	173	80	0.0	2.00	32.8	10	S
Bezostaia	29.7	17.7	2.66	128	173	72	0.0	1.50	33.9	5	S
Bankuti 1201	29.1	15.7	2.66	126	173	63	0.0	1.25	35.0	8	S
Yorkstar	29.0	16.4	2.66	131	173	74	0.3	1.00	36.5	10	S
Stadler	28.5	16.6	2.63	133	173	68	1.0	0.25	36.1	8	S
Scout 66	27.0	16.8	2.70	129	173	50	0.3	1.25	35.7	10	S
NB 67730	26.9	16.4	2.73	130	173	68	0.0	2.25	33.4	8	S
Gage	26.2	16.3	2.75	130	173	68	0.3	2.00	34.1	9	S
San Pastore	25.9	18.3	2.65	132	173	68	0.0	0.50	35.6	4	S
Purdue 4930A6-28-2-1	24.9	16.3	2.70	130	173	66	1.0	1.50	37.6	4	S
Felix	23.9	18.1	2.69	131	173	57	0.0	1.50	35.9	9	S
Gaines	23.1	17.9	2.77	138	173	58	0.0	1.50	35.0	1	S
Heine VII	22.7	17.1	2.69	126	173	67	1.0	2.00	37.0	5	S
Odin	20.9	17.9	2.79	132	173	57	0.3	0.75	33.1	3	S
Atlas 66	20.3	17.0	2.87	126	173	51	0.0	1.25	35.8	1	S
Fertodi 293	17.2	17.2	2.60	127	173	66	0.3	0.75	34.3	6	S
Mean	29.2	16.7	2.72	129	173	66	0.3	1.16	35.1	6.6	
Coefficient of variation (%)	29.2	11.4	4.28	3.5	0	17.8	273.6	105.82	11.0		
Standard error	4.2	1.0	0.06	2.2	0	5.8	0.5	0.6	1.9		

[a] Local cultivar.

AFGHANISTAN

Kabul

Cooperators: Mir Mohammed Ayub; Ghulam Hassan; E. V. Staker

Date of planting: Sept. 25, 1969

Precipitation during cycle of test: Very little snow and practically no rain during spring and summer.

Amount of irrigation applied: 3–4 inches in each of seven applications.

Fertilizer used: N (urea–46% N) = 120 kg./ha.; P_2O_5 (superphosphate–18% P_2O_5) = 100 kg./ha.; K_2O (potassium chloride–60% K_2O) = 50 kg./ha.

General description of climatic conditions during test: One of the driest seasons on record. Summer temperatures also higher than usual.

Disease development: Because of very dry spring and summer, the incidence and severity of diseases were considerably less than normal.

Insect, weed or pest problems: Minimal

Date of harvest: June 14–July 9, 1970

Area harvested for yield: 3 square meters

Dates when different notes were taken: Frost damage–March 5, 1970; Shattering–July 10, 1970; Stripe rust–May 20, 1970; Leaf rust–June 9, 1970; Stem rust–June 9, 1970; Irrigations–Sept. 29, 1969, Oct. 9, 1969, April 4, 1970, April 26, 1970, May 14, 1970, May 27, 1970, June 6, 1970.

Data in Table 28

Table 28. Agronomic, grain quality and disease data for the 30 cultivars in the "2nd International Winter Wheat Performance Nursery" grown at Kabul, Afghanistan, 1970.

Cultivar	Yield q/ha	Test weight kg/hl	Protein %	Lysine % of protein	Date of Flowering (Days from Jan 1)	Date of Ripening (Days from Jan 1)	Plant height cm	Lodging %	Shattering %	Winter survival %	Rust Stripe Sev %	Rust Leaf Sev %	Rust Stem Sev %
Bezostaia	78.5	84.7	14.8	2.94	133	171	126	6	6	65.0	3	0	0
Scout 66	76.0	85.5	15.7	2.73	126	166	123	28	0	75 0	0	0	0
Yorkstar	73.1	79.5	15.3	2 93	137	173	124	5	19	70.0	45	0	36
Lerma Rojo 64	72.3	85.1	15 0	2 80	117	163	103	10	1	57.5	0	2	7
Timwin	71.8	79.8	17 0	2.74	136	176	103	35	4	70.0	8	0	0
San Pastore	70 1	83.3	15.9	2 81	126	168	118	21	58	65 0	3	0	6
INIA 66	67.6	85.7	14.4	2.76	113	165	86	0	5	47.5	0	0	0
Arthur	67.1	83 3	16.3	2 88	128	167	120	6	57	65 0	20	1	0
Sturdy	66.7	82.9	16.1	2 67	132	173	96	0	1	70 0	0	3	10
Shawnee	66 6	84.7	16.2	2.79	131	171	124	23	4	82.5	0	0	0
Parker	63.3	85.4	17.5	2.70	128	170	114	11	46	65 0	16	2	8
Blueboy	62.7	78.5	16.3	2 78	138	178	106	0	0	72.5	8	0	6
Heine VII	62.0	80.2	17.2	2.73	140	181	117	0	0	67.5	0	0	30
Gage	61.7	83.5	17.1	2 68	128	170	119	10	55	77.5	2	0	0
Stadler	61.2	84 0	16.4	2.79	131	170	136	46	23	72.5	2	0	21
Fertodi 293	61.0	82.4	18.0	2 71	132	171	126	6	9	72.5	5	1	2
Yung Kwang	60.8	78.6	17.8	2.69	134	175	115	18	1	65.0	35	0	2
Bankuti 1201	60.7	84.2	16.9	2 72	129	169	136	24	21	76 0	15	0	0
Lancer	59.6	83.9	16.6	2.74	133	172	116	34	8	75.0	0	0	0
Riley 67	59.5	84.5	16 8	2.79	131	167	122	23	45	67.5	16	0	15
Triumph 64	59.0	85.7	17.0	2.77	126	169	125	38	44	75.0	15	0	0
NB 67730	58 8	82.5	19.5	2.80	129	168	132	45	12	92 0	3	0	0
Benhur	57.5	83.2	16.5	2.76	126	169	132	25	24	70.0	50	1	5
Gaines	56.5	79.4	15.4	2 85	140	177	83	0	0	70 0	55	0	8
Felix	56.1	78.4	18 7	2.73	148	187	116	0	12	65 0	0	8	12
Atlas 66	54 0	80.6	19.5	2.69	128	169	127	19	1	65 0	3	0	0
Purdue 4930A6-28-2-1	51.6	82.4	20.4	2.72	128	167	134	19	30	70 0	0	0	0
Cappelle Desprez	49.4	77.9	17.5	2 67	144	178	100	0	11	77.5	6	0	2
Winalta	48.9	84.5	16.5	2.76	137	173	129	20	15	80.0	49	0	0
Odin	47.3	76.8	17.5	2.82	147	188	121	5	6	70 0	0	1	10
Mean	62.0	82.4	16.8	2.76	132	172	117	16	17	70 4	12	0 6	6
Coefficient of variation (%)	9.1	0.9	4.5	2.35	1.2	1.7	6.5	110 8	56.1	8.9			
Standard error	2.8	0.4	0 4	0.03	0.8	1.4	3 8	8 8	4.8	3 1			

AFGHANISTAN

Mazar-i-Sharif

Cooperators: Mir Mohammed Ayub; A. Iyar; C. K. Magee; E. V. Staker

Date of planting: Oct. 21, 1969

Precipitation during cycle of test: 151.4 mm.

Amount of irrigation applied: Six applications at 76 mm. each, totaling 457 mm.

Fertilizer used: N (urea—46%) = 120 kg./ha.; P_2O_5 (superphosphate—18% P_2O_5) = 100 kg./ha.; K_2O (potassium chloride—60% K_2O) = 50 kg./ha.

General description of climatic conditions during test: Very mild winter with low temperature of only 22° F. Summer of 1970 was dry.

Disease development: Stripe rust infected most cultivars. A few were heavily infected with leaf rust. No stem rust on any cultivar.

Insect, weed or pest problems: One spraying for stinkbugs.

Date of harvest: May 28–June 16, 1970.

Area harvested for yield: 3 square meters.

Dates when different notes were taken: Stripe rust—April 22, 1970; Leaf rust—May 19, 1970; Plant height—May 19, 1970; Lodging—May 19, 1970; Shattering—June 13–27, 1970.

Data in Table 29

Table 29. Agronomic, grain quality and disease data for the 30 cultivars in the "2nd International Winter Wheat Performance Nursery" grown at Mazar-i-Sharif, Afghanistan, 1970.

Cultivar	Yield q/ha	Protein %	Lysine % of protein	Date of Flowering (Days from Jan. 1)	Date of Ripening (Days from Jan. 1)	Plant height cm	Lodging %	Shattering %	Rust Stripe Sev. %	Rust Leaf Sev. %
Bezostaia	61.0	15.0	2.88	110	143	104	6	0	16	1
Sturdy	58.5	15.0	2.70	112	144	97	0	1	0	1
Lerma Rojo 64	56.8	14.6	2.82	95	139	98	5	0	2	0
Blueboy	54.5	15.4	2.79	112	146	103	0	1	85	38
INIA 66	52.2	15.5	2.74	94	139	91	1	0	0	0
Scout 66	49.7	15.0	2.86	112	142	110	24	0	0	2
Timwin	49.2	14.5	2.90	114	146	97	5	0	68	0
Parker	48.9	15.8	2.78	109	141	113	6	2	32	0
Triumph 64	47.7	15.5	2.72	105	142	111	89	0	79	3
Fertodi 293	47.5	17.3	2.77	115	146	120	1	11	0	1
NB 67730	45.7	17.4	2.78	115	144	120	13	0	8	0
Bankuti 1201	43.8	15.8	2.83	117	146	129	1	11	33	3
Shawnee	42.2	15.0	2.82	114	146	113	3	1	36	0
Arthur	41.2	15.0	2.97	106	141	108	33	15	76	1
Heine VII	40.8	16.5	2.81	127	157	105	0	4	0	13
Lancer	40.5	15.9	2.76	121	148	110	21	3	2	1
Gage	39.5	14.6	2.89	117	145	109	2	9	65	0
San Pastore	38.9	15.0	2.97	106	139	110	26	69	0	22
Yorkstar	37.4	15.1	2.92	120	149	103	0	12	93	5
Benhur	32.4	14.6	2.92	105	140	109	8	1	98	0
Winalta	31.8	16.4	2.75	121	148	115	3	1	85	4
Atlas 66	31.2	19.1	2.72	112	143	112	23	5	56	3
Gaines	30.6	15.3	2.89	121	150	81	0	0	99	0
Felix	29.7	18.1	2.78	129	157	98	0	2	1	52
Cappelle Desprez	28.9	18.0	2.62	128	156	98	0	2	0	1
Riley 67	28.3	16.3	2.78	108	144	108	16	16	84	0
Stadler	25.3	13.4	3.05	107	145	113	3	20	99	0
Purdue 4930A6-28-2 1	20.7	17.6	2.85	113	145	116	1	44	93	0
Odin	19.4	19.6	2.91	134	161	101	0	0	0	10
Yung Kwang	17.9	15.7	2.78	117	148	92	1	41	99	0
Mean	39.7	15.9	2.82	114	146	106	9.6	9.1	44	5
Coefficient of variation (%)	12.9	7.8	3.71	0.0	0.9	3.7	161.8	112.3		
Standard error	2.6	0.6	0.05	0.0	0.6	1.9	7.8	5.1		

INDIA

Shalimar, Kashmir

Cooperators: S.P. Kohli; H. S. Mannd; D. Singh

Date of planting: Nov. 7, 1969.

Pricipitation during cycle of test: Nil

Amount of irrigation applied: Nil

Fertilizer used: N (ammonium sulphate) = 70 kg./ha.; P_2O_5 (superphosphate) = 40 kg./ha.; K_2O (murate of potash) = 40 kg./ha.

General description of climatic conditions during test: Severe drought throughout the period.

Disease development: Rust on some cultivars.

Insect, weed or pest problems: Bird problems. Weeding and hoeing done in April.

Date of harvest: June, 1970

Area harvested for yield: 3 square meters

Dates when different notes were taken: Winter survival—March 15, 1970; Diseases—June 6–23, 1970; Flowering dates—April 17–May 26, 1970; Ripening dates—May 31–June 22, 1970; Shattering—June 15–July 7, 1970.

Data in Table 30

Table 30. Agronomic and disease data for the 30 cultivars in the "2nd International Winter Wheat Performance Nursery" grown at Shalimar, Kashmir, India, 1970.

Cultivar	Yield q/ha	Test weight kg/hl	Date of Flowering (Days from Jan 1)	Date of Ripening (Days from Jan 1)	Plant height cm	Shattering %	Frost damage 0–9	Rust Stripe Sev. %	Rust Leaf Sev. %	Rust Stem Sev. %	Weakness of rachis %
Parker	24.1	82.0	124	161	96	0.25	0.0	0	0	0	2.3
Yung Kwang	23.3	79.0	126	165	95	0.58	0 0	14	0	0	2.5
Triumph 64	21.6	82.0	119	157	103	0.33	0.0	0	0	0	1.5
Benhur	21.6	82.0	120	156	94	0.70	0.0	0	0	0	0.5
Lancer	21.5	80 0	133	164	101	0.53	0.0	0	0	0	2.3
INIA 66	21.2	85.0	107	151	80	0.63	0.0	0	0	0	0 8
Gage	21.2	80.0	128	164	103	0.35	0 0	0	0	0	1.3
Shawnee	20.4	81.5	129	164	109	0.48	0.0	0	0	0	1.0
Winalta	19.9	81.3	133	168	106	0.38	0.0	6	0	0	1.3
Lerma Rojo 64	19.5	82.0	112	153	90	0 63	0.0	0	0	0	2.8
Stadler	18.5	78.8	126	164	100	0.33	0.0	0	0	16	2.5
Riley 67	18.3	80.0	125	161	99	0.30	0.0	0	0	8	2.5
Bezostaia	17.6	79.5	124	163	83	0.55	0 0	0	0	0	3.8
Sturdy	16.6	80.0	121	160	66	0.35	0.0	0	0	0	0.8
Yorkstar	16.2	75.3	134	165	89	0.28	0.0	0	0	8	0.2
Atlas 66	16.2	80 0	126	165	106	0.30	0 0	0	0	0	2.0
Purdue 4930A6-28-2-1	16.2	80.0	128	164	104	0.38	0.0	0	0	0	2.2
Fertodi 293	15.4	80.0	131	165	100	0.33	0 0	0	0	1	2.4
Bankuti 1201	15.4	80 0	132	166	111	0.48	0.0	0	0	14	2.0
Timwin	15.4	81.0	134	164	71	0.25	0.0	0	0	0	0.5
Arthur	15.4	81.5	125	164	88	0.73	0.0	0	0	0	2 0
San Pastore	14.5	80 0	125	158	75	0.45	0.0	0	0	1	6.0
Scout 66	14.1	80.0	128	165	89	0.33	0.0	0	0	0	2 8
NB 67730	12.4	80.0	130	164	104	0.30	0.0	0	0	0	2.5
Blueboy	11.0	80.0	134	170	78	0.43	0.8	7	0	0	0.8
Gaines	10.6	80.0	134	168	66	0.35	0.0	0	0	11	1.8
Heine VII	10.2	80.0	136	171	79	0.60	0.0	0	13	0	1.0
Cappelle Desprez	9.1	73.S	134	169	75	0.28	0.0	0	0	6	3.0
Felix[a]	0.0	0.0	143		60	0.00	1.0	0	0	58	
Odin[a]	0.0	0.0	145		7)	0.00	1.0	0	0	56	
Mean	15.9	74.9	128	163	90	0.38	0.1	0.9	0 4	6 0	1.9
Coefficient of variation (%)	30.1	10.8	2.7	1.5	10.9	64.24	250 6				
Standard error	2.4	4.0	1.7	1.1	4.9	0.12	0.1				

[a] Cultivar did not mature.

KOREA

Suwon

Cooperators: Hyun Ok Choi; Dong Woo Ree

Date of planting: Oct. 16, 1969

Precipitation during cycle of test: 748.8 mm.

Amount of irrigation applied: None

Fertilizer used: Compost: 800 kg./ha.; urea: 152 kg./ha.; double-superphosphate: 90 kg./ha.; potassium chloride: 70 kg./ha.

General description of climatic conditions during test: Weather was good during early growing season but was severely cold and dry in later part of season. Generally unfavorable year.

Disease development: Septoria was major disease. Leaf rust and stem rust were severe; stripe rust was light.

Insect, weed or pest problems: Hand weeded two times.

Date of harvest: July 18, 1970

Area harvested for yield: 3 square meters

Dates when different notes were taken: Winter survival—March 14, 1970; Shattering—July 25, 1970; Stripe rust—June 10, 1970; Leaf rust—June 10, 1970; Stem rust—June 18, 1970; Septoria—June 25, 1970.

Data in Table 31

Table 31. Agronomic, grain quality and disease data for the 30 cultivars in the "2nd International Winter Wheat Performance Nursery" grown at Suwon, Korea, 1970.

Cultivar	Yield q/ha	Test weight kg/hl	Protein %	Lysine % of protein	Date of Flowering (Days from Jan 1)	Date of Ripening (Days from Jan 1)	Plant height cm.	Winter survival %	Rust: Stripe Sev %	Rust: Stripe Resp.	Rust: Leaf Sev. %	Rust: Leaf Resp.	Rust: Stem Sev. %	Rust: Stem Resp.	Septoria Sev. %
Bezostaia	48.1	69.0	15.3	2.73	141	183	70	93	23	MS	22	MS	15	MR-MS	30
Yung Kwang	47.2	64.6	19.6	2.54	142	185	77	91	21	R-MS	50	S	11	R-MS	45
Parker	45.3	69.1	17.6	2.70	140	183	67	91	25	MR-MS	27	M-S	18	MR-S	35
Scout 66	34.7	65.6	15.5	2.75	139	180	65	86	22	MR-MS	23	MR-MS	11	MR	30
Riley 67	34.4	63.1	18 6	2.71	142	183	71	86	25	MR-S	32	M-S	15	MR-MS	35
Stadler	33.7	61.2	16.6	2.71	140	181	73	84	23	MS-S	21	MR-S	12	MR	25
Sturdy	33.3	62.3	19.2	2.53	138	181	55	85	21	MR-S	30	MS-S	16	MS-S	30
Yorkstar	33.3	56.7	17.5	2.81	145	186	72	89	35	S	28	MS-S	11	MR	70
Purdue 4930A6-28-2-1	32.6	67.0	20.3	2.57	141	181	70	90	20	MS-S	23	MS-S	17	MR-MS	25
Benhur	31.3	65.6	17.1	2.69	138	179	71	84	22	MS-S	33	MS-S	21	MS	40
Arthur	31.2	62.4	17.8	2.61	139	178	64	85	36	S	31	MS-S	25	MS-S	35
NB 67730	30.4	66.1	19.0	2.55	141	184	79	85	30	MS-S	30	MR-MS	7	R-MR	35
Winalta	28.9	64.8	17.0	2.62	145	186	72	93	26	MR-MS	28	M-S	8	R-MS	35
Gage	26.3	65.5	17.7	2 61	143	183	68	81	17	MS-S	26	MS-S	31	MR-S	35
Atlas 66	25.9	56.3	22.6	2.56	147	192	77	73	10	R-MR	10	R-MR	7	R-MR	45
Triumph 64	25.8	68.8	16.0	2.72	139	180	64	76	32	MS-S	37	S	23	MS-S	45
Heine VII	25.6	56 0	21.0	2.73	155	194	70	71	45	S	30	S	13	MR-S	55
Fertodi 293	25.2	62.0	18.0	2.73	146	186	72	80	23	MS-S	18	MS-S	26	MS-S	30
Bankuti 1201	24.1	59.3	20.4	2.62	144	190	72	66	31	S	45	S	11	MR	55
Lancer	23.3	62.5	17.2	2.78	145	188	68	81	33	S	41	MS-S	12	R-MR	45
Gaines	21.3	55.8	17.7	2.72	146	188	56	78	32	S	57	S	53	S	50
Timwin	18.9	59.3	20.3	2.60	143	185	58	74	26	S	25	MS-S	21	MS-S	35
Shawnee	18.3	62.0	18.1	2.69	144	187	67	76	50	S	36	S	28	MS-S	40
Felix	9.3	58.5	24.7	2.84	159	187	71	66	45	S	67	S	32	S	65
Cappelle Desprez	8.9	55.5	22.9	2.84	159	199	69	79	35	MS-S	40	MS-S	8	R-MR	25
Blueboy	8.9	62.5	20.0	2 66	147	193	69	61	51	S	45	S	45	MS-S	40
Odin	8.2	62.8	19.2	2 62	159	197	81	56	52	S	37	S	30	S	65
San Pastore	8.0	67.6			142	185	56	60	45	S	38	S	46	S	50
Lerma Rojo 64								0							
INIA 66								0							
Mean	26.5	62.6	18.8	2 67	145	186	69	79	31		33		20		42
Coefficient of variation (%)	17.1	3.7	6.5	2.87	0.8	1.2	6.9	6.8							
Standard error	2.3	1.2	0.6	0.04	0.6	1.1	2.4	2.7							

JAPAN

Sapporo

Cooperators: T. Kumagai; H. Araki

Date of planting: Sept. 9, 1969

Precipitation during cycle of test: 577.5 mm. (excluding January–March, 1970)

Amount of irrigation applied: None

Fertilizer used: Ammonium sulphate = 31.4 gm./m^2; superphosphate = 45.3 gm./m^2; potassium sulphate = 4 gm./m^2; fused phosphate = 37.0 gm./m^2.

General description of climatic conditions during test: Winter disease development due to delayed snow melting in spring, caused severe winter-killing. Crop losses from winter diseases were heavy. Climatic conditions during May–July were generally favorable, although rainfall was limited.

Disease development: Winter disease infection was noteworthy. Rusts were found in early July. PCP was applied (1 kg./1000 m^2) on Nov. 11, 1969.

Insect, weed or pest problems: Small crop losses

Date of harvest: July 22–August 4, 1970

Area harvested for yield: 2.25 square meters

Dates when different notes were taken: None reported

Data in Table 32

Table 32. Agronomic, grain quality and disease data for 29 cultivars in the "2nd International Winter Wheat Performance Nursery" and 1 local cultivar grown at Sapporo, Japan, 1970.

Cultivar	Yield q/ha	Test weight[a] kg/hl	Protein %	Lysine % of protein	Date of Flowering (Days from Jan 1)	Date of Ripening (Days from Jan 1)	Plant height cm	Winter survival %	Rust Leaf Sev. %	Rust Stem Sev. %
Stadler	57.0	78.1	14.7	2.95	168	205	117	72.5	15	45
Timwin	51.8	77.5	15.9	2.75	170	206	94	57.5	0	0
Bezostaia	45.0	76.3	16.3	2.79	168	205	100	52.5	3	0
Hokuei[b]	40.2	76.0	15.8	2.65	168	209	107	45.0	35	15
Benhur	34.7	77.5	17.8	2.70	163	205	108	71.3	0	20
Riley 67	33.3	75.5	17.1	2.67	167	205	106	45.0	0	0
Triumph 64	32.7	79.0	18 0	2.67	163	203	101	37.5	13	3
Yorkstar	29.2	71.0	14.6	2.94	170	206	107	42.5	7	60
Winalta	26 8	.	17.0	2 65	170	209	108	31.3	28	20
Odin	21.5		16.0	2 80	178	216	125	36.3	7	0
Arthur	18.8	.	17.9	2.76	166	205	96	50.0	3	1
Sturdy	17.8		18.8	2.60	167	207	84	10.0	10	0
Purdue 4930A6-28-2-1	16.3	.	22.3	2.67	166	209	105	16.0	0	15
Scout 66	15.4		19.2	2.61	168	208	94	20.0	0	0
Felix	13.1		17.0	2.74	176	215	87	19.3	0	7
Lancer	10.1		18.1	2.73	168	209	99	11.5	0	0
Gaines	5.3	.	16.7	2.78	172	215	78	6.8	20	8
Yung Kwang	5.2		21.2	2 64	168	208	88	1.8	0	0
NB 67730	4.3	.	22.0	2.37	166	210	100	3.3	0	0
Shawnee	3.8		19.7	2.62	169	213	106	2.5	0	0
Gage	3.2	. .	20.3	2.55	168	212	92	1.3	13	0
Heine VII	3.2		19.0	2.59	175	215	90	2.0	13	33
Fertodi 293	3.0	.	20.1	2.76	169	213	96	4.8	0	0
Parker	2.5		19.2	2.69	167	211	88	6.0	3	0
Blueboy	2.2		18.9	2.80	169	215	88	2.3	0	13
Cappelle Desprez	0.0	.						0.0		
San Pastore	0.0	.						0.0		
Atlas 66	0.0	.						0.0		
Bankuti 1201	0.0	.						0.0		
Lerma Rojo 64	0.0	. .						0.0		
Mean	16.5	76.4	18.1	2.70	169	209	99	21.6	7	10
Coefficient of variation (%)	42.5	.						42.3		
Standard error	3.3	.						4.4		

[a] Insufficient seed for many cultivar test weights.
[b] Local cultivar.

ARGENTINA

Pergamino

Cooperators: José Rath; Hector Conta; Ernesto Florencio Godoy

Date of planting: June 16, 1969

Precipitation during cycle of test: 324.7 mm.

Amount of irrigation applied: None

Fertilizer used: None

General description of climatic conditions during test: Moisture during planting was good. A difficult dry period occurred during August, September and early October during which time the plants suffered an intense attack of the greenbug.

Disease development: Conditions not favorable for stem rust; severe leaf rust infection in November.

Insect, weed or pest problems: Greenbug and weed problems (preemergence herbicide applied June 6, 1969),

Date of harvest: Dec. 18 and 19, 1969

Area harvested for yield: 3 square meters

Dates when different notes were taken: It was noted that many cultivars were very late and some never reached full maturity.

Data in Table 33

Table 33. Agronomic, grain quality and disease data for the 30 cultivars in the "2nd International Winter Wheat Performance Nursery" and 2 local cultivars grown at Pergamino, Argentina, 1970.

Cultivar	Yield q/ha	Protein %	Lysine % of protein	Date of Flowering (Days from Jan 1)	Date of Ripening (Days from Jan 1)	Plant height cm.	Leaf rust Sev. %
Tamwheat 102	10.6	15.6	2.89	-	343	81	9
Gaines	7.8	15.0	2.90	315	348	60	5
Gage	7.0	18.1	2.72	306	345	80	4
Centurk	6.2	17.1	2.77	305	344	76	0
Triumph 64	6.1	16.6	2.77	306	344	84	81
Scout 66	5.9	16.5	2.81	305	344	85	53
Blueboy	5.9	17.0	2.79	299	344	78	90
NB 67730	5.1	19.3	2.71	305	345	95	19
Shawnee	4.9	17.9	2.81	304	346	93	73
Benhur	4.9	17.7	2.70	306	345	76	0
Parker	4.7	18.4	2.74	303	345	75	0
Sturdy	4.2	19.9	2.54	306	346	68	0
San Pastore	4.2	17.8	2.80	298	342	75	95
Stadler	4.1	17.4	2.81	315	349	80	0
Riley 67	3.4	18.8	2.74	315	348	74	0
Fertodi 293	3.4	18.4	2.67	310	346	81	78
Yorkstar	3.2	16.7	2.92	314	347	79	76
Timwin	3.1	18.5	2.81	319	350	64	5
Purdue 4930A6-28-2-1	3.0	21.7	2.71	310	345	83	33
Arthur	2.9	18.3	2.78	305	344	71	5
Bezostaia	2.1	17.9	2.79	307	344	66	9
Atlas 66	2.0	20.4	2.67	304	344	83	30
Yung Kwang	1.9	18.0	2.68	311	348	83	98
Klein Pluma[b]	1.8	16.8	2.75	295	336	83	40
Klein Sendero[b]	1.6	17.7	2.74	300	338	94	58
Winalta	1.5	16.2	2.84	317	349	83	95
Lancer	1.5	15.3	2.99	316	347	79	69
Cappelle Desprez	0.8	19.2	2.75	321		58	10
Bankuti 1201	0.8	18.1	2.79	314	348	85	10
Lerma Rojo 64[a]				251			
INIA 66[a]				251			
Odin[c]				....			65
Mean	3.9	17.8	2.77	304	345	78.3	37
Coefficient of variation (%)	35 2	3.1	2.32	0.5		6.4	
Standard error	0.7	0.3	0.03	0.7		2.5	..

[a] Damaged by Pulgon and invaded by weeds.
[b] Local cultivars.
[c] Did not flower.

ARGENTINA

Bordenave

Cooperators: S. E. Garbini; E. F. Godoy

Date of planting: June 9, 1969

Precipitation during cycle of test: 311.2 mm.

Amount of irrigation applied: None

Fertilizer used: None

General description of climatic conditions during test: Heavy frost in August and October; limited moisture in October.

Disease development: Moderate intensity of stripe, leaf, and stem rusts; moderate attack of *Septoria tritici*.

Insect, weed or pest problems: None

Date of harvest: Dec. 3, 1969 to January 5, 1970

Area harvested for yield: 3 square meters

Dates when different notes were taken: Plant height—Nov. 15 to Dec. 2, 1969; Lodging—Dec. 1, 1969 to Jan. 1, 1970; Shattering—Dec. 5, 1969 to Jan. 4, 1970; Stripe rust and leaf rust—Nov. 27, 1969; *Septoria tritici*—Nov. 28, 1969; Frost damage—Aug. 29, 1969; Drought—Nov. 8, 1969.

Data in Table 34

Table 34. Agronomic, grain quality and disease data for the 30 cultivars in the "2nd International Winter Wheat Performance Nursery" grown at Bordenave, Argentina, 1970 (seeded June 9, 1969).

Cultivar	Yield q/ha	Test weight kg/hl	Protein %	Lysine % of protein	Date of Flowering (Days from Jan. 1)	Date of Ripening (Days from Jan. 1)	Plant height cm.	Frost damage 0–9	Drought 0–9	Rust: Stripe Sev. %	Rust: Stripe Resp	Rust: Leaf Sev. %	Rust: Leaf Resp.	Septoria Sev. %
Blueboy	35.7	78 7	15.0	2.72	308	350	70	0	4	6	R-MR	13	MS-S	30
Tamwheat 102	33 8	82.4	14.1	2.93	307	349	83	0	3	52	S	1	O-R	22
Centurk	33.5	83.1	16.0	2 81	307	350	78	0	4	0	O-R	0	O-R	25
Stadler	33.3	82.6	15.3	2 97	307	351	90	0	3	11	MS	0	O-R	27
Benhur	31.8	82.1	15.1	2 86	303	349	81	0	3	42	S	0	O	25
Sturdy	31 0	82.6	16.1	2.76	301	349	70	0	3	0	O-R	1	O-MR	27
Arthur	31.0	80.8	15.3	2.93	302	349	74	0	4	50	S	0	O	22
Timwin	30.4	79 0	16.2	2.89	309	351	71	0	3	5	R-MR	4	O-MR	25
Shawnee	30.3	82 6	14.4	2.92	310	352	89	0	3	55	S	45	S	20
Parker	30.0	84.1	17.1	2.58	306	351	80	0	3	0	O-R	0	O	30
Yung Kwang	28.5	78.9	16.3	2.74	313	355	81	0	3	40	O-S	50	S	20
Riley 67	28.3	79 4	16 9	2.79	307	350	81	0	4	15	MR-MS	0	O	27
Scout 66	28 0	83.7	15.2	2.88	308	350	7	0	4	17	S	52	S	22
Gage	27.7	80.0	16.8	2 80	311	353	81	0	3	20	MS-S	0	O	27
Triumph 64	27.3	83.2	15.5	2 82	302	349	88	0	3	4	R-MR	25	MR-S	32
Yorkstar	27.1	75.4	12.5	3.26	314	355	80	0	3	60	S	30	S	16
San Pastore	26.3	77.6	16 0	2.90	298	348	78	1	5	45	S	32	S	27
Gaines	25 8	79.9	14.9	2.93	318	357	70	0	3	5	R-MR	0	O-R	20
Winalta	24.9	84.0	15.3	2.85	316	356	91	0	3	0	O	27	S	20
Fertodi 293	24.7	79.9	16.5	2 88	315	356	81	0	3	0	O	65	S	18
Bezostaia	24.2	81.9	15.2	2.85	307	350	79	0	4	13	MS	10	R-MR	22
NB 67730	24.0	82.3	17.9	2.71	309	352	93	0	4	8	R-MR	11	MS-S	18
Lerma Rojo 64	23.1	78.9	15.9	2.79	288	347	81	3	3	0	O	42	S	27
INIA 66	22.7	83.9	15.1	2 67	283	337	73	5	3	0	O	21	MS-S	27
Lancer	22.2	81.9	14.9	2.90	315	356	76	0	4	0	O	62	S	18
Atlas 66	22.1	79.5	20.0	2.62	312	354	95	1	3	2	O-R	12	MR-S	22
Purdue 4930A6-28-2-1	19.9	81.1	18.5	2.81	311	353	90	0	2	67	S	0	O	22
Cappelle Desprez	19.0	72.3	16 9	2.75	322	358	81	0	3	0	O-R	10	R-MR	20
Bankuti 1201	13.4	81.6	17.0	2.78	315	356	89	0	4	8	MS	40	S	20
Odin	4.9		20.0	2.93	328	366	85	0	4	0	O	65	S	18
Mean	26.2	80.8	16.0	2.83	308	352	81	0.3	3.4	18		21		23
Coefficient of variation (%)	13.7	1.1	5.0	3.36	0.5	0.3	7.4	57.7						
Standard error	1.8	0.5	0.4	0.05	0.8	0.6	3.0	0.1						....

ARGENTINA

Bordenave

Cooperators: S. E. Garbini; E. F. Godoy

Date of planting: June 30, 1970

Precipitation during cycle of test: 302.5 mm.

Amount of irrigation applied: None

Fertilizer used: None

General description of climatic conditions during test: Heavy frost and limited moisture from June–September; late frost in November; high temperatures in December.

Disease development: Moderate intensity of leaf rust; low to moderate intensity of *Septoria tritici.*

Insect, weed or pest problems: None

Date of harvest: Dec. 9, 1970 to Jan. 10, 1971

Area harvested for yield: 3 square meters

Dates when different notes were taken: Plant height—Oct. 24–Dec. 20, 1970; Leaf rust—Nov. 27, 1970; *Septoria tritici*—Nov. 27, 1970; Frost damage—Nov. 28, 1970; Lodging—Dec. 7, 1970–Jan. 9, 1971; Shattering—Dec. 8, 1970–Jan. 8, 1971.

Data in Table 35

Table 35. Agronomic, grain quality and disease data for the 30 cultivars in the "2nd International Winter Wheat Performance Nursery" grown at Bordenave, Argentina, 1971 (seeded June 30, 1970).

Cultivar	Yield q/ha	Test weight kg/hl	Protein %	Lysine % of protein	Date of Flowering (Days from Jan 1)	Date of Ripening (Days from Jan 1)	Plant height cm	Shattering %	Frost damage 0–9	Leaf rust Sev. %	Leaf rust Resp	Septoria Sev. %
San Pastore	29.2	76.7	15.9	2.89	299	347	83	25.0	4.5	58	S	33
Triumph 64	24.7	80.8	13.8	3.10	306	350	96	0.0	5.5	28	S	20
Parker	23.2	80.4	16.7	2.90	312	357	95	0.0	4.5	0	O	25
Bezostaia	21.3	82.7	15.2	2.85	312	354	79	0.0	5.0	23	MS-S	38
Gage	20.5	74.7	17.0	2.94	319	359	99	0.0	3.5	0	O	23
Timwin	19.4	73.7	17.5	2.88	310	353	71	0.0	4.0	7	R-MR	25
Yung Kwang	19.0	70.2	17.8	2.81	314	359	99	0.0	3.5	35	S	38
Benhur	18.3	77.6	17.5	2.89	307	353	88	12.5	4.5	0	O	35
Blueboy	17.9	71.9	16.9	2.90	318	360	74	0.0	3.0	15	MS-S	28
Gaines	17.7	73.9	16.9	2.95	325	362	61	0.0	2.0	0	O-R	25
Riley 67	17.3	74.8	17.2	2.89	311	353	88	21.9	4.0	0	O	25
Sturdy	17.2	76.0	17.7	2.83	304	356	71	0.0	3.5	2	O-R	33
Heine VII	16.7	74.4	19.0	2.72	330	364	80	0.0	2.0	48	S	28
Arthur	16.4	73.6	17.9	2.88	307	354	83	25.0	4.0	0	O-R	43
Purdue 4930A6-28-2-1	16.2	74.5	19.4	2.90	314	355	110	0.0	3.5	3	O-R	23
Scout 66	15.5	78.1	15.3	2.87	315	356	91	0.0	6.0	33	S	15
Shawnee	15.3	72.7	17.5	2.77	320	360	99	0.0	4.5	18	S	20
INIA 66	15.1	76.8	17.8	2.87	289	346	65	0.0	4.5	25	S	35
NB 67730	14.6	76.4	20.0	2.68	318	359	106	0.0	4.5	13	MS	20
Lancer	14.5	76.6	16.4	2.87	322	360	94	0.0	3.0	53	S	20
Fertodi 293	14.4	73.3	18.7	2.82	318	359	99	0.0	5.5	48	S	28
Atlas 66	14.1	70.9	21.0	2.77	314	360	105	0.0	5.0	8	MR-MS	18
Stadler	13.1	73.8	17.8	2.88	313	358	90	0.0	5.0	0	O	33
Lerma Rojo 64	12.9	75.0	18.1	2.91	289	346	73	0.0	4.0	25	S	35
Bankuti 1201	12.5	78.4	17.5	2.77	318	362	109	0.0	5.5	25	S	23
Yorkstar	12.0	71.1	18.2	2.97	328	363	66	0.0	2.5	33	MS-S	20
Cappelle Desprez	11.9	67.8	18.9	2.90	333	366	78	0.0	2.5	13	MS	13
Winalta	11.0	78.7	15.8	2.97	326	362	100	0.0	2.5	28	MS-S	20
Felix	3.9		20.4	2.98	340	374	69	0.0	2.0	30	S	23
Odin	3.7		20.3	2.96	337	370	79	0.0	3.5	73	S	20
Mean	16.0	75.2	17.7	2.88	315	358	87	2.8	3.9	21.5		26.2
Coefficient of variation (%)	18.9	2.1	5.6	3.5	0.9	0.7	8.5	40.6	27.1			
Standard error	1.5	0.8	0.5	0.05	1.4	1.3	3.7	0.6	0.5			

CHILE

Temuco

Cooperators: I. Ramirez; J. Acevedo

Date of planting: June 3, 1970

Precipitation during cycle of test: 1200–1500 mm. (annual rainfall)

Amount of irrigation applied: None

Fertilizer used: N (KNO_3) = 196 kg./ha.; P_2O_5 (soluble triphosphate) = 200 kg./ha.

General description of climatic conditions during test: Normal rainfall with some excess of precipitation near heading and ripening stages. Spring rather cool. Harvest delayed considerably because of late rains.

Disease development: Excellent stripe rust development; poor development of leaf rust, many cultivars escaped or could not be read for leaf rust because of heavy attack of stripe rust. Cultivars with 100% lodging mainly due to dead plants with broken straw resulting from 100% severity of stripe rust.

Insect, weed or pest problems: None reported

Date of harvest: Febr. 2, 1971 (Odin and Felix harvested Febr. 22, 1971)

Area harvested for yield: 3 square meters

Dates when different notes were taken: Stripe rust—Nov. 25, 1970; Plant height—Jan. 25, 1971; Lodging—Jan. 25, 1971; Flowering dates taken as days from Jan. 1, 1970; Ripening dates taken as days from Jan. 1, 1971.

Data in Table 36

Table 36. Agronomic, grain quality, and disease data for the 30 cultivars in the "2nd International Winter Wheat Performance Nursery" grown at Temuco, Chile, 1971.

Cultivar	Yield q/ha	Test weight kg/hl	Protein %	Lysine % of protein	Date of Flowering (1970)	Date of Ripening (1971)	Plant height cm.	Lodging %	Stripe rust Sev. %	Stripe rust Resp.
					Days from Jan. 1					
Heine VII	61.0	72.3	19.0	2.72	347	27	110	63	0	O
Blueboy	57.9	69.6	16.9	2.90	340	27	108	30	10	MS
Bezostaia	51.9	72.8	15.2	2.85	325	25	105	45	40	MS
Atlas 66	48 8	75.1	21.0	2.77	340	25	141	58	60	MS
Felix	48.3	71.0	20.4	2.98	347	48	109	13	5	MS
Odin	46.2	70.6	20.3	2.96	351	48	139	20	0	O
Fertodi 293	45.7	73.3	18.7	2 82	340	20	131	83	1	R
Gaines	38 3	61.8	16.9	2.95	340	28	90	10	70	MS
Lancer	38.1	71.0	16 4	2.87	336	21	135	80	20	MS
Cappelle Desprez	37.8	67.0	18.9	2.90	344	30	109	40	50	MS
Scout 66	34.2	63.7	15.3	2.87	330	21	124	68	20	MS
Sturdy	31.9	58.0	17.7	2.83	322	26	91	3	10	R
Lerma Rojo 64	28.9	65.2	18.1	2.91	312	10	96	45	70	MS
Riley 67	28.5	68.2	17.2	2 89	329	25	118	63	90	MS
Bankuti 1201	27.5	61.3	17.6	2.77	336	21	138	88	70	MS
Winalta	25.0	61.5	15.8	2.97	334	24	136	85	80	MS
INIA 66	23.7	73 0	17.8	2.87	310	10	86	19	90	MS
Gage	22.1	61.9	17.0	2.94	331	25	128	55	80	MS
Benhur	21.6	62.1	17.5	2.89	326	23	109	23	90	S
San Pastore	18 6	66.7	15.9	2 89	322	20	101	35	90	S
Yorkstar	16.3	53.0	18.2	2.97	336	27	108	35	90	S
NB 67730	15.7	57.1	20.0	2.68	330	20	134	60	80	MS
Purdue 4930A6-28-2-I	15.3	64.3	19.4	2.90	328	20	125	48	99	S
Timwin	13.8	60.2	17.6	2.89	327	27	90	11	90	S
Stadler	13.4	59.1	17.8	2.88	327	24	114	30	99	S
Shawnee	7.2	47.6	17.5	2.77	331	28	119	4	99	S
Arthur	5.8	45.1	17.9	2.88	323	21	109	21	99	S
Parker	5.3	47.7	16.7	2.90	327	26	110	25	90	S
Triumph 64	4.9	37.7	13.8	3.10	320	22	115	6	99	S
Yung Kwang	1.0		17.8	2.81	329		111	99	99	S
Mean	27.8	62.7	17.7	2.88	331	25	115	42.0	63	
Coefficient of variation (%)	14.0	4.0	5.6	3.47		5.3	3.7	28.3	.	
Standard error	1.9	1.3	0.5	0.05		0.7	2.1	5.9	.	

BRAZIL

Rocha Farm

Cooperators: A. M. Schlehuber; M. Rocha

Date of planting: July 23, 1970.

Precipitation during cycle of test: Not reported

Amount of irrigation applied: None

Fertilizer used: DAP 40-55-0 = 120 kg./ha. broadcast at planting

General description of climatic conditions during test: Rainy during July and August. Dry and colder than normal during September and October. Very rainy in January during harvest.

Disease development: Severe attack of leaf rust in August and September.

Insect, weed or pest problems: Bird damage of early cultivars before maturity.

Date of harvest: Jan. 25, 1971

Area harvested for yield: 3 square meters

Dates when different notes were taken: Data not reported due to extreme variability and questionable value.

Table 37. Summary of average "Yield" in quintals per hectare for cultivars grown in the "2nd International Winter Wheat Performance Nursery," 1970.

Cultivar	Davis, Calif. U S	Ft Collins, Colo U S	Stillwater, Okla U S	Lincoln, Nebr U S	Rowan Co., N C. U.S	Ithaca, N Y U S	El-Harrach, Algeria	Cambridge, England	Wageningen, Netherlands	Svalof, Sweden	Jokioinen, Finland
Bezostaia	29.6	59.2	32.2	38.1	44.0	29.2	28.3	41.0	40 3	62.0	13.1
Timwin	20.2	58.0	29.4	35.2	41.4	31.0	23.3	34.5	32.0	62.8	4.1
Arthur	13 0	53.9	41.6	35.1	49.3	35.9	22.5	28.4	32.1	57.0	2.2
Scout 66	18.5	60.5	34.1	37.2	36.1	35 6	22.5	35.0	28.4	62.6	5.3
Parker	16 0	58.3	31.3	39.1	40.4	25.5	22.5	33.9	30.1	55.8	5.6
Gage	18 1	55.7	29.6	36 6	36.8	30.7	22.5	37.9	31.9	48.2	4.8
Lancer	22.6	60.0	27.2	36.0	25.2	37.1	23.3	41.5	37.1	60.0	6.2
Sturdy	32.5	55.5	31.3	34 6	39.6	19.7	24.1	30.3	30.4	49.0	4.5
Stadler	9.6	49.3	31.2	33 8	41.2	23.7	22.5	31.7	33.9	62.0	6.6
Fertodi 293	16.9	54 6	25.4	30.5	31 9	29.3	25.8	39.8	37.1	59 8	2.5
Riley 67	10.4	50.4	32.8	36.1	41 7	24.0	25.0	29.2	35.5	53.0	4.4
Yorkstar	14.5	49.7	25.3	21 0	38 8	33.5	19 1	36.9	41.0	52.0	2.2
Yung Kwang	15.3	54.4	24.7	28 8	37.5	28.9	18 3	25 0	31.6	38.0	1.1
Shawnee	16 0	59.5	25.0	31.3	34.5	25.8	24.1	35.7	30.4	45.8	2.9
Triumph 64	27.3	45 6	32.6	36.9	32.4	19 6	19.9	20 3	22.1	47.4	5.5
Benhur	12.9	48.7	31.7	34.7	42.7	27.1	26 6	10.2	30.4	10.8[b]	1.2
Heine VII	19.3	49.4	15.3	20.2	36.9	24.3	19.1	47.0	44.4	61.8	5.1
NB 67730	13.1	48.3	26.8	31.8	27.6	26.0	15.0	26.7	27.7	43.4	2.9
Blueboy[a]	16.9	37.0	23 4	28.5	39.2	29.9	23.3	35.2	33.7	49.8	2.1
Bankuti 1201	9.7	49.7	20 7	30.5	30.9	25.0	15 8	29.2	32.4	41.6	1.9
Winalta	13.6	48.5	24 8	28.2	30.5	22.7	19.1	31.0	31.5	43.8	4.6
Purdue 4930A6-28-2-1	12.4	44.2	30.3	31.0	36.9	26.2	19.1	24.9	21.7	39.4	5.1
Atlas 66	12.3	44.4	18.8	21.2	31.0	6.3	20 8	30.5	36.3	43.8	0.0
San Pastore	18.4	50.4	25.3	19.8	45.5	6.5	20.8	3.9	30.0	9.4[b]	0.0
Gaines	16.6	36.8	19.1	24.5	38.2	20 4	15.8	45.5	37.7	52.8	7.8
Cappelle Desprez	17.1	39.5	11.0	19 4	25.7	8.4	15.0	43.9	43.9	42.6	0.4
Felix	5.9	27.1	6.7	8.3	27.3	26.1	10 8	41.5	37.2	56.4	15.1
Odin	4.3	34.6	2.7	13.8	21 6	23.3	6 6	41.5	35.5	67.0	12.3
Lerma Rojo 64	42.5	41.2					21.6	24.5	25.6		0.0
INIA 66	53.5	20.6					15.0	14.4	19.8		0.0
Mean	18.3	48.2	25.4	29.4	35.9	25.1	20.2	31.7	32.6	49.3	4.3

Table 37. (Continued)

Cultivar	Monsheim, W. Germany[c]	Weihenstephan, W. Germany	Vienna, Austria	Zurich, Switzerland	Milano, Italy	Rieti, Italy	Novi Sad, Yugoslavia	Zagreb, Yugoslavia	Martonvasar, Hungary	Fundulea, Romania	Tolbukhin, Bulgaria
Bezostaia	53.8	37.6	29.7	45.0	57.9	50.7	45.3	45.0	37.7	35.9	34.3
Timwin	41.5	40.3	27.0	32.6	62.8	44.5	52.4	45.3	33.3	44.7	48.5
Arthur	43.0	29.9	15.4	39.1	64.7	49.9	58.1	36.5	37.9	44.2	54.8
Scout 66	41.9	25.6	32.8	35.8	52.3	38.5	46.5	32.5	40.4	45.6	51.5
Parker	45.6	34.6	29.3	32.6	59.7	38.9	49.1	38.3	32.0	40.0	43.2
Gage	38.3	38.4	28.5	32.8	50.8	34.8	50.3	38.7	39.6	43.2	47.9
Lancer	38.0	26.4	38.3	33.5	44.1	36.7	35.4	27.3	35.5	42.1	47.3
Sturdy	43.6	34.7	24.6	21.9	55.6	50.9	42.3	29.3	27.4	36.9	33.9
Stadler	40.9	26.2	27.4	36.6	58.0	18.8	48.1	31.4	36.1	43.0	33.1
Fertodi 293	38.8	36.9	31.7	38.8	59.8	43.7	45.6	33.5	35.1	39.7	42.3
Riley 67	36.6	32.8	25.0	33.8	49.8	23.5	48.0	34.4	36.1	42.6	40.5
Yorkstar	28.7	38.3	26.0	42.8	57.7	12.1	34.8	28.6	39.2	31.8	35.8
Yung Kwang	42.3	38.1	24.7	31.9	67.6	46.7	48.5	41.9	27.7	41.3	45.6
Shawnee	28.2	26.4	22.8	29.1	64.8	45.3	46.5	33.0	30.7	40.1	32.8
Triumph 64	42.6	27.0	23.6	28.4	55.9	37.1	44.6	29.9	28.1	38.8	33.1
Benhur	37.6	29.4	16.8	27.0	55.6	45.3	52.6	35.9	34.8	40.4	47.1
Heine VII	47.1	51.5	30.0	39.5	52.8	19.7	29.9	26.5	39.4	24.1	27.0
NB 67730	32.5	[illegible]	23.6	31.1	37.2	33.3	43.8	30.3	33.4	39.3	44.0
Blueboy[a]	39.9	36.2	27.8	35.3	54.0	36.6	35.0	25.8	23.2	20.8	25.7
Bankuti 1201	32.4	31.3	23.9	33.3	50.9	27.5	48.3	31.8	33.3	34.8	38.5
Winalta	32.6	30.1	30.0	30.5	40.7	30.5	31.0	24.5	31.9	34.2	33.1
Purdue 4930A6-28-2-1	30.3	28.1	13.4	33.7	53.1	41.5	45.0	30.3	32.5	34.7	39.5
Atlas 66	26.8	29.9	25.8	36.4	45.9	40.7	51.5	36.8	37.0	30.8	48.9
San Pastore	43.7	42.1	8.5	43.4	64.7	32.3	40.6	34.7	31.5	36.5	36.1
Gaines	24.7	46.3	33.8	32.2	41.7	11.1	34.9	14.4	29.2	22.2	21.5
Cappelle Desprez	49.1	49.8	30.5	34.6	50.2	24.4	30.6	29.5	29.8	19.7	33.4
Felix	49.1	44.0	25.0	34.5	43.7	12.6	18.0	16.4	31.3	21.0	18.2
Odin	52.4	36.1	23.0	31.5	35.5	9.9	28.8	14.6	18.4	11.8	10.1
Lerma Rojo 64	41.6	19.2	13.4	24.8	62.4	42.2	40.3	36.4	26.7	23.2	27.4
INIA 66	38.4	11.3		24.4	51.6	30.1	38.1	41.7		17.7	26.8
Mean	39.4	33.4	25.4	33.6	53.4	33.7	42.1	32.6	32.7	34.7	37.2

Table 37. (Continued)

Cultivar	Ankara, Turkey	Eskisehir, Turkey	Sulaimaniya, Iraq	Karaj, Iran	Mashad, Iran	Kabul, Afghanistan	Mazar-i-Sharif, Afghanistan	Shalimar, Kashmir India	Suwon, Korea	Sapporo, Japan	Mean 32 locations
Bezostaia	44.0	19.6	17.1	28.2	29.7	78.5	61.0	17.6	48.1	45.0	39.9
Timwin	42.7	16.5	8.6	31.3	30.3	71.8	49.2	15.4	18.9	51.8	36.9
Arthur	38.9	14.4	8.9	20.5	43.3	67.1	41.2	15.4	31.2	18.8	35.7
Scout 66	42.3	14.5	14.6	25.0	27.0	76.0	49.7	14.1	34.7	15.4	35.4
Parker	34.8	19.6	12.0	21.4	31.2	63.3	48.9	24.1	45.3	2.5	34.6
Gage	38.4	13.8	8.6	24.0	26.2	61.7	39.5	21.2	26.3	3.2	33.1
Lancer	39.2	16.2	11.7	24.4	31.4	59.6	40.5	21.5	23.3	10.1	33.1
Sturdy	33.6	10.6	14.9	18.4	30.1	66.7	58.5	16.6	33.3	17.8	33.0
Stadler	37.7	16.0	5.7	23.5	28.5	61.2	25.3	18.5	33.7	57.0	32.9
Fertodi 293	34.6	12.8	9.3	24.9	17.2	61.0	47.5	15.4	25.2	3.0	32.9
Riley 67	35.1	11.9	8.4	22.2	30.7	59.5	28.3	18.3	34.4	33.3	32.1
Yorkstar	46.8	17.0	6.8	26.9	29.0	73.1	37.4	16.2	33.3	29.2	32.0
Yung Kwang	35.8	12.2	6.6	25.6	31.3	60.8	17.9	23.3	47.2	5.2	32.0
Shawnee	43.1	15.8	11.6	23.3	42.7	66.6	42.2	20.4	18.3	3.8	31.8
Triumph 64	34.0	17.0	12.1	26.0	30.3	59.0	47.7	21.6	25.8	32.7	31.4
Benhur	32.6	12.7	8.4	20.1	34.4	57.5	32.4	21.6	31.3	34.7	30.8
Heine VII	26.1	26.6	12.6	22.9	22.7	62.0	40.8	10.2	25.6	3.2	30.8
NB 67730	38.4	17.2	10.0	25.2	26.9	58.8	45.7	12.4	30.4	4.3	29.1
Blueboy[a]	30.7	14.6	11.9	18.5	37.8	62.7	54.5	11.0	8.9	2.2	29.2
Bankuti 1201	40.1	16.6	4.8	22.9	29.1	60.7	43.8	15.4	24.1	0.0	29.1
Winalta	31.0	16.0	9.2	22.9	34.2	48.9	31.8	19.9	28.9	26.8	28.6
Purdue 4930A6-28-2-1	31.4	10.6	4.7	17.5	24.9	51.6	20.7	16.2	32.6	16.3	28.1
Atlas 66	25.9	15.8	7.3	24.0	20.3	54.0	31.2	16.2	25.9	0.0	28.0
San Pastore	32.7	16.0	13.7	20.5	25.9	70.1	38.9	14.5	8.0	0.0	27.6
Gaines	31.2	16.8	6.6	30.0	23.1	56.5	30.6	10.6	21.3	5.3	26.8
Cappelle Desprez	23.6	15.9	8.1	21.8	30.7	49.4	28.9	9.1	8.9	0.0	26.2
Felix	26.2	11.0	7.3	21.1	23.9	56.1	29.7	0.0	9.3	13.1	24.2
Odin	25.0	10.5	5.9	16.7	20.9	47.3	19.4	0.0	8.2	21.5	22.2
Lerma Rojo 64	35.6	20.1	15.9	25.0		72.3	56.8	19.5		0.0	30.3[d]
INIA 66	15.5	10.8	14.1	16.1	30.3	67.6	52.2	21.2		.	27.3[e]
Mean	34.2	15.3	9.9	23.0	29.1	62.0	39.7	15.9	26.5	15.7	30.9

[a] Poor stands at many sites resulting from poor seed germination.
[b] Bird damage.
[c] Two reps only.
[d] Mean of 25 locations for which Bezostaia averaged 38.8 q/ha.
[e] Mean of 23 locations for which Bezostaia averaged 38.7 q/ha.

Table 38. Summary of "Yield" rankings for cultivars in the "2nd International Winter Wheat Performance Nursery," 1970.

Cultivar	Davis, Calif. U.S.	Ft. Collins, Colo. U.S	Stillwater, Okla U.S.	Lincoln, Nebr. U.S	Rowan Co., N.C. U.S.	Ithaca, N.Y. U.S.	El-Harrach, Algeria	Cambridge, England	Wagen-ingen, Nether-lands	Svalof, Sweden	Jokioinen, Finland
Bezostaia	4	4	5	2	3	9	1	7	3	5	2
Timwin	7	6	12	8	6	5	8	14	16	2	16
Arthur	22	11	1	9	1	2	13	22	15	9	20
Scout 66	9	1	2	3	17	3	14	13	25	3	9
Parker	16	5	8	1	8	16	11	15	23	11	7
Gage	11	7	11	5	16	6	10	9	17	17	12
Lancer	6	2	13	7	27	1	9	4	7	7	6
Sturdy	3	8	7	11	9	24	5	19	20	16	14
Stadler	28	17	9	12	7	20	12	16	12	4	5
Fertodi 293	13	9	15	16	20	8	3	8	8	8	19
Riley 67	26	12	3	6	5	19	4	20	10	12	15
Yorkstar	19	14	17	23	11	4	19	10	2	14	21
Yung Kwang	18	10	20	18	13	10	23	24	18	26	25
Shawnee	17	3	18	14	18	15	6	11	21	19	18
Triumph 64	5	21	4	4	19	25	18	27	28	18	8
Benhur	23	18	6	10	4	11	2	29	22	27	24
Heine VII	8	16	25	24	15	18	22	1	1	6	10
NB 67730	21	20	14	13	24	14	27	23	26	22	17
Blueboy[a]	14	26	21	19	10	7	7	12	13	15	22
Bankuti 1201	27	15	22	17	22	17	25	21	14	24	23
Winalta	20	19	19	20	23	22	20	17	19	20	13
Purdue 4930A6-28-2-1	24	23	10	15	14	12	21	25	29	25	11
Atlas 66	25	22	24	22	21	28	17	18	9	21	28
San Pastore	10	13	16	25	2	27	16	30	24	28	27
Gaines	15	27	23	21	12	23	24	2	5	13	4
Cappelle Desprez	12	25	26	26	26	26	26	3	4	23	26
Felix	29	29	27	28	25	13	29	5	6	10	1
Odin	30	28	28	27	28	21	30	6	11	1	3
Lerma Rojo 64	2	24	.				15	26	27	..	29
INIA 66	1	30	...	. .	..		28	28	30	.	30

Table 38. (Continued)

Cultivar	Monsheim, W. Germany	Weihenstephan, W. Germany	Vienna, Austria	Zurich, Switzerland	Milano, Italy	Rieti, Italy	Novi Sad, Yugoslavia	Zagreb, Yugoslavia	Martonvasar, Hungary	Fundulea, Romania	Tolbukhin, Bulgaria
Bezostaia	1	10	8	1	10	2	14	2	6	17	17
Timwin	14	6	13	18	5	7	3	1	14	2	4
Arthur	9	20	26	5	4	3	1	8	5	3	1
Scout 66	12	27	3	9	18	13	12	15	1	1	2
Parker	6	15	9	19	8	12	6	6	17	11	10
Gage	19	7	10	17	21	7	5	5	2	4	5
Lancer	20	24	1	15	25	15	22	24	10	7	6
Sturdy	8	14	19	30	13	1	18	22	26	15	18
Stadler	15	26	12	7	9	26	9	17	8	5	20
Fertodi 293	17	11	4	6	7	8	13	13	11	12	11
Riley 67	22	16	17	13	23	24	10	12	9	6	12
Yorkstar	27	8	14	3	11	28	25	23	4	21	16
Yung Kwang	11	9	18	21	1	4	7	3	25	8	8
Shawnee	28	25	24	25	2	6	11	14	21	10	23
Triumph 64	10	23	21	26	12	14	16	20	24	14	22
Benhur	21	21	25	27	14	5	2	10	12	9	7
Heine VII	5	1	6	4	17	25	28	25	3	23	25
NB 67730	24	28	22	23	29	18	17	19	13	13	9
Blueboy[a]	16	12	11	10	15	16	23	26	28	27	27
Bankuti 1201	25	17	20	16	20	22	8	16	15	18	14
Winalta	23	18	7	24	28	20	26	27	18	20	21
Purdue 4930A6-28-2-1	26	22	27	14	16	10	15	18	16	19	13
Atlas 66	29	19	15	8	24	11	4	7	7	22	3
San Pastore	7	5	29	2	3	19	19	11	19	16	15
Gaines	30	3	2	20	27	29	24	30	23	25	28
Cappelle Desprez	3	2	5	11	22	23	27	21	22	28	19
Felix	4	4	16	12	26	27	30	28	20	26	29
Odin	2	13	23	22	30	30	29	29	29	30	30
Lerma Rojo 64	13	29	28	28	6	9	20	9	27	24	24
INIA 66	18	30	...	29	19	21	21	4	..	29	26

Table 38. (Continued)

Cultivar	Ankara, Turkey	Eskisehir, Turkey	Sulaimaniva, Iraq	Karaj, Iran	Mashad, Iran	Kabul, Afghanistan	Mazar-i-Sharif, Afghanistan	Shalimar, Kashmir India	Suwon, Korea	Sapporo, Japan
Bezostaia	2	4	1	3	15	1	1	13	1	3
Timwin	4	10	18	1	12	5	7	20	22	2
Arthur	8	20	16	23	1	8	14	21	11	10
Scout 66	5	19	4	8	19	2	6	23	4	13
Parker	15	3	9	21	8	11	8	1	3	23
Gage	10	21	17	12	21	14	17	7	14	20
Lancer	7	11	11	11	6	19	16	5	20	15
Sturdy	18	28	3	27	14	9	2	14	7	11
Stadler	11	14	28	14	18	15	27	11	6	1
Fertodi 293	16	22	14	10	29	16	10	18	18	22
Riley 67	14	25	19	19	10	20	26	12	5	5
Yorkstar	1	7	24	4	17	3	19	15	8	7
Yung Kwang	12	24	25	6	7	17	30	2	2	17
Shawnee	3	17	12	15	2	10	13	8	23	19
Triumph 64	17	6	8	5	11	21	9	3	16	6
Benhur	20	23	20	25	4	23	20	4	10	4
Heine VII	26	1	7	18	26	13	15	27	17	21
NB 67730	9	5	13	7	20	22	11	24	12	18
Blueboy[a]	24	18	10	26	3	12	4	25	26	24
Bankuti 1201	6	9	29	17	16	18	12	19	19	28
Winalta	23	13	15	16	5	29	21	9	13	8
Purdue 4930A6-28-2-1	21	29	30	28	23	27	28	17	9	12
Atlas 66	27	16	23	13	28	26	22	16	15	27
San Pastore	19	12	6	24	22	6	18	22	28	26
Gaines	22	8	26	2	25	24	23	26	21	16
Cappelle Desprez	29	15	21	20	9	28	25	28	25	25
Felix	25	26	22	22	24	25	24	29	24	14
Odin	28	30	27	29	27	30	29	30	27	9
Lerma Rojo 64	13	2	2	9	..	4	3	10	.	29
INIA 66	30	27	5	30	13	7	5	6		

[a] Low seed germination resulted in poor stand at many sites.

Table 39. Summary of "Test Weight" (kg/hl) for cultivars grown in the "2nd International Winter Wheat Performance Nursery," 1970.

Cultivar	Davis Calif U S	Ft Collins, Colo[a] U S	Stillwater, Okla U S	Lincoln, Nebr U S	Rowan Co, N C.[a] U.S.	Ithaca, N Y.[a] U S	El-Harrach, Algeria	Cambridge, England[a]
Triumph 64	74.0	78 6	79.2	81.5	76.2	78 6	80 5	83.0
Parker	70 8	81.5	77.5	81.1	78 7	79.1	80.0	85.8
Bezostaia	76.4	80 1	76.4	79.7	76.5	79.2	74.1	84.2
Winalta	74.6	80.2	78 1	79 3	77.3	79.2	80.4	84.5
Shawnee	72.5	81.1	75.7	79.3	77.0	79.3	69 8	83.8
Scout 66	72.9	80.4	76 3	79.3	76.0	79 6	78 0	82.2
Lancer	75.5	80 8	75.8	80 0	73.8	78 6	77.8	84.7
Beniur	72.5	77.3	75.1	79.4	74.8	76.9	75 0	81.5
Purdue 4930A6-28-2-1	73.5	77.4	75.9	79.9	76.4	79.9	77.0	83.5
Bankuti 1201	70.0	79.9	76 9	78.0	77 0	79.7	79.8	83.4
Gage	71.0	79.3	74.0	78.6	75.1	77.7	75.6	83 8
Stadler	73.4	79.5	75.9	80.5	75.9	79.9	73.8	84.2
Arthur	72.8	79.1	76.4	78.5	76.6	77.3	77.8	81.2
NB 67730	71.0	79.3	71.9	78.7	72.9	78.8	76.0	83 0
Sturdy	74.2	78.2	74.4	77.5	73.7	76.5	78.9	82.7
Riley 67	73.3	77.7	74.2	79.4	74.2	76.9	76.8	72.3
Fertodi 293	69.1	78 8	72.4	77.3	73.8	77.4	77.5	83.2
Atlas 66	64.5	75.9	70.2	76.1	74.6	76 0	75.5	82.7
Timwin	68.2	77.8	66.1	73.4	72.4	77.0	76.8	82.5
Yung Kwang	63.7	76.5	67.6	73.7	70.4	76 5	71.4	79.6
San Pastore	67.5	76.0	69.9	75.3	75.5	74.1	77.3	75.5
Heine VII	70.0	73 8	69.1	53.5	72.4	73.5	71.8	76.7
Blueboy	64.8	69.1	64 9	73 0	69.0	74.8	70.3	76.7
Yorkstar	70.3	69.3	69 3	69.1	69.5	74.1	66.6	79.5
Gaines	68.0	64.5	67.5	72 7	64.5	73.3	73.8	82.2
Cappelle Desprez	65.4	68.9	63.1	69.4	63.6	67.9	71.9	73.2
Felix	66.0	61 0	66.0	65.1	66.2	72.9	73 6	75.0
Odin		67.7		66.8	60.6	73.9	75.4	70.0
Lerma Rojo 64	75.5	78 6					80.6	79.5
INIA 66	79.0	78.2					81 8	80.9
Mean	71.1	76.2	72.6	72.0	73.0	76.7	75.8	80.7

Table 35. (Continued)

Cultivar	Wageningen, Netherlands	Svalof, Sweden	Weihenstephan, W. Germany[a]	Vienna, Austria[a]	Zurich, Switzerland	Milano, Italy	Rieti, Italy	Novi Sad, Yugoslavia	Zagreb, Yugoslavia
Triumph 64	85.8	80.6	78.1	79.5	79.6	82.1	80.5	76 6	77.3
Parker	82.8	82.2	79.2	81.3	80.3	82.6	79.5	78.4	77.2
Bezostaia	87.8	82.7	78.8	79.9	80.6	82.1	81.7	75.2	76.7
Winalta	87.4	80.1	76.8	81.7	78.5	81.0	78.7	73 6	73.8
Shawnee	87.6	81.2	78.7	79.3	79.6	82.1	81.5	77.1	78.5
Scout 66	82.9	79.7	77.1	79.7	79.1	81.5	79 6	75.3	76.5
Lancer	87.7	82.8	79.8	81.5	81.5	79.0	79.3	73.9	75.0
Benhur	84.5	81.3	78.1	78.9	78.5	81.2	80.2	77.2	75.9
Purdue 4930A6-28-2-1	84.4	78.3	76.5	76 7	79.3	81.7	80.8	77.4	76.7
Bankuti 1201	83.8	78.9	79.6	80.5	80.6	81.2	75.5	75.7	76.6
Gage	83.7	78.8	77.6	78.5	80.1	80 0	78 0	74.9	76.1
Stadler	87.9	83.5	78.3	80.9	80.4	78.8	65.0	76 3	74.8
Arthur	81.7	78.1	76.1	78.5	79.2	81 0	79.6	76.6	72.8
NB 67730	83.3	79.1	75.5	78.7	79.1	78.9	77.7	74.7	76.6
Sturdy	86.9	80.4	78.3	78 9	74.3	78.7	78 6	74 6	71.6
Riley 67	85.5	81.8	75.4	78.7	80.2	77.1	66.3	72 8	72.0
Fertodi 293	85.2	80.4	78.9	78.3	80.5	78.9	74.5	71 8	73.3
Atlas 66	85.6	81.4	75.9	77.3	78.9	77.0	78.6	73.4	74.9
Timwin	83.4	81.1	78 0	77.5	74.6	76.4	75 0	73.0	73.0
Yung Kwang	86.6	79.1	76.7	78.9	75.1	78 6	71.9	72 2	73.3
San Pastore	83.7	79.9	76.3	75.5	77.9	79 0	74.2	70.5	70.1
Heine VII	83.4	79.9	74.3	77.7	72 8	73.4	65 0	59.3	67.3
Blueboy	80.8	80.0	75.7	75.3	69.0	72.3	70.1	67.4	63.0
Yorkstar	81.3	78 6	70.7	76.1	73.5	72.7	65.0	65.1	63.4
Gaines	81.3	80.3	73.4	70.5	72.0	69.8	65.0	62.5	53.6
Cappelle Desprez	82.8	77.3	75.9	74.7	72.3	72.7	66.1	65.5	64.9
Felix	81.9	79.8	74.8	74.9	67.9	71.4	48.8	56.7	61.8
Odin	81.8	81.9	74.8	73.3	74.0	71.4	65.0	62.2	62.3
Lerma Rojo 64	85.4		80.1	78.5	74.7	80.9	79.0	73.7	72.9
INIA 66	86.2		79.6		75.5	81.2	79.2	76.3	74.7
Mean	84.4	80.3	77.0	78.2	77.0	78.2	74.0	72.0	72.0

Table 39. (Continued)

Cultivar	Martonvasar, Hungary	Fundulea, Romania	Tolbukhin, Bulgaria	Ankara, Turkey[a]	Sulaimaniya, Iraq	Kabul, Afghanistan	Shalimar, Kashmir India	Suwon, Korea	Mean 25 locations
Triumph 64	84.0	81.6	81.1	85 1	89.5	85.7	82 0	68.8	80.4
Parker	85.1	80.8	81.9	84.9	83 8	85.4	82.0	69 1	80 4
Bezostaia	84.7	79.5	79 0	82.5	89.3	84.7	79.5	69.0	80.0
Winalta	83.6	81.0	75.6	84.5	90 0	84.5	81.3	64.8	79.6
Shawnee	83.1	80 8	78.5	82.1	90.0	84 7	81.5	62.0	79.5
Scout 66	83.2	81.6	79 6	83 0	88 0	85.5	80 0	65.6	79.3
Lancer	83.2	81.5	78.9	82.4	83.3	83.9	80.0	62.5	79.3
Benhur	82.6	80.9	80.3	82.7	84 0	83.2	82 0	65 6	78.8
Purdue 4930A6-28-2-1	81.9	80.1	79.7	81.1	78.3	82.4	80.0	67.0	78.6
Bankuti 1201	84.5	80.9	78 3	78 6	79.5	84.2	80 0	59.3	78.5
Gage	82.4	79.5	79.1	81.2	84.8	83.5	80 0	65.5	78.4
Stadler	83.1	81.7	78.4	79 6	83.8	84 0	78.8	61.2	78.4
Arthur	82.4	80.0	79.0	83.1	80.0	83.3	81.5	62.4	78.2
NB 67730	81.8	79.9	79.2	82 4	84.3	82.5	80 0	66.1	78.1
Sturdy	81.0	78.6	79 0	82.2	80 0	82.9	80.0	62.3	77.8
Riley 67	80.5	79.9	78 0	82.5	90.8	84.5	80 0	63.1	77.4
Fertodi 293	79.3	77.2	76.5	81.2	78 8	82 4	80.0	62.0	77.1
Atlas 66	79.9	75.7	77.6	79.1	80.0	80.6	80 0	56.3	76.3
Timwin	80.9	76.6	78.0	80.1	73.3	79.8	81.0	59 3	75.8
Yung Kwang	79.4	77.0	76.5	78.2	74.3	78 6	79 0	64.6	75.2
San Pastore	79 3	76.3	76.4	81.6	82.5	83.3	80.0	67.6	72.9
Heine VII	79.9	71.1	68.5	79.4	89 8	80 2	80.0	56 0	72.8
Blueboy	76.1	68.0	67.1	78.1	79.3	78.5	80.0	62.5	72.2
Yorkstar	78 3	71.6	68.5	75.3	79.5	79.5	75.3	56.7	72.0
Gaines	77.1	65.5	65.3	81.1	74.8	79.4	80.0	55.8	71.2
Cappelle Desprez	74.5	66.3	64 8	75.7	70.5	77.9	73 8	55.5	70.2
Felix	78.3	71.6	63.2	77.9	70.5	78.4		58.5	69.3[b]
Odin	73.1	63.0	52 0	73.4	69.5	76 8		62.8	66 8[c]
Lerma Rojo 64	83.2	74.2	78.1	82 0	89.3	85.1	82.0		79.6[d]
INIA 66		77.5	79.9	82.4	89.3	85.7	85.0		80.7[e]
Mean	81.0	76.8	75.4	81.0	82.0	82.4	80.2	62.6	76.5

[a] One rep only.
[b] Mean of 24 locations for which Triumph 64 averaged 80.3 kg/hl.
[c] Mean of 22 locations for which Triumph 64 averaged 80.7 kg/hl.
[d] Mean of 19 locations for which Triumph 64 averaged 81.3 kg/hl.
[e] Mean of 17 locations for which Triumph 64 averaged 81 3 kg/hl.

Table 40. Summary of percent "Grain Protein" for cultivars grown in the "2nd International Winter Wheat Performance Nursery," 1970.

Cultivar	Davis, Calif. U S	Ft. Collins, Colo U.S	Stillwater, Okla U S	Lincoln, Nebr. U.S	Rowan Co, N.C. U.S.	Ithaca, N.Y. U S	Cambridge, England	Wageningen, Netherlands	Svalof, Sweden	Jokioinen, Finland
Atlas 66	20.7	19.7	20.6	20.2	18.2	17.0	13.5	18.1	18.3	
Purdue 4930A6-28-2-1	19.8	19.5	20.8	19.6	16.7	14.5	13.7	22.0	21.6	19.6
NB 67730	19.4	18.9	20.9	18.2	15.9	13.4	14.2	18.9	18.4	18.3
Cappelle Desprez	19.1	14.2	20.4	18.1	15.2	16.6	12.5	14.9	15.3	15.2
Bankuti 1201	18.1	16.6	17.9	16.6	15.0	12.8	13.7	16.9	18.2	18.0
Benhur	17.3	17.2	17.2	17.4	13.7	12.3	14.0	17.7	17.3	15.5
Triumph 64	16.9	17.5	15.5	16.5	15.6	12.5	13.8	19.0	16.1	16.3
Yung Kwang	17.9	15.8	18.3	16.4	14.3	12.3	13.2	17.1	17.8	17.1
Odin	20.1	13.0	20.8	17.8	17.0	12.2	12.3	14.0	13.0	14.9
Fertodi 293	19.0	16.5	18.0	16.9	14.4	11.9	11.2	17.1	16.3	17.7
Sturdy	16.9	16.7	17.1	17.3	13.8	12.8	12.7	15.9	15.2	17.1
Gage	17.5	17.0	17.7	16.1	13.3	10.4	12.3	17.0	17.3	17.3
Timwin	18.1	16.4	18.6	16.9	14.6	12.0	13.6	15.1	15.4	17.2
Felix	19.9	13.4	19.5	18.2	16.4	11.3	12.9	12.9	13.3	14.8
Arthur	17.4	16.6	16.7	16.6	13.8	12.1	11.2	16.6	17.0	16.1
Parker	18.7	15.8	17.2	16.6	14.7	11.9	10.9	17.5	16.2	18.4
Riley 67	18.9	17.0	18.2	17.2	14.2	11.8	12.4	15.3	16.6	15.5
Stadler	17.5	14.5	17.2	16.0	13.7	12.5	13.0	13.7	14.8	14.7
Scout 66	16.8	16.6	15.9	14.5	12.3	10.9	11.3	18.5	16.4	18.2
Blueboy	17.4	14.6	16.6	16.3	12.4	11.3	11.7	14.4	15.8	17.1
Winalta	16.4	14.2	15.3	15.8	13.5	11.6	12.3	14.7	16.6	17.1
Shawnee	17.3	14.9	16.7	16.0	13.6	11.5	13.2	14.5	15.7	17.2
San Pastore	18.4	16.0	17.6	17.7	12.9	14.6	13.7	15.9	13.7	
Lancer	15.8	15.6	16.2	14.6	13.8	10.3	12.1	15.7	15.7	16.5
Heine VII	17.5	12.9	18.3	16.6	14.9	11.9	11.4	13.0	12.7	14.8
Bezostaia	16.2	13.6	16.5	15.0	13.6	11.0	12.3	14.1	14.5	14.3
Gaines	16.9	12.7	16.5	16.0	12.8	12.2	10.6	13.4	13.9	14.8
Yorkstar	15.8	11.5	16.0	14.1	12.6	10.0	11.2	13.0	15.8	14.8
Lerma Rojo 64	17.0	18.5					13.4	16.9		
INIA 66	16.4	17.2					13.9	15.9		
Mean	17.8	15.8	17.8	16.7	14.4	12.4	12.6	16.0	16.0	16.5

Table 40. (Continued)

Cultivar	Monsheim, W. Germany[a]	Weihenstephan, W. Germany	Vienna, Austria	Zurich, Switzerland	Milano, Italy	Rieti, Italy	Novi Sad, Yugoslavia	Zagreb Yugoslavia	Martonvasar, Hungary	Fundulea, Romania
Atlas 66	20.7	16.4	20.2	16.3	18.8	18.9	18.9	18.3	19.4	18.6
Purdue 4930A6-28-2-1	19.7	17.1	23.3	16.3	16.6	17.9	20.5	19.8	20.3	17.9
NB 67730	17.3	16.7	20.0	15.0	17.0	18.8	18.2	17.4	18.4	16.3
Cappelle Desprez	14.7	12.3	14.4	14.3	16.2	16.6	18.2	15.6	16.7	18.1
Bankuti 1201	17.6	15.1	18.4	14.3	15.3	15.0	16.9	15.3	16.3	15.3
Benhur	17.6	14.1	18.8	13.4	15.1	14.1	17.1	16.0	16.8	15.2
Triumph 64	15.0	14.8	18.0	13.4	15.4	16.2	16.4	14.7	16.1	15.5
Yung Kwang	17.3	15.5	18.5	12.4	14.8	15.4	14.2	13.2	16.0	14.1
Odin	14.6	12.0	13.2	12.2	15.3	15.5	16.8	14.7	15.8	15.9
Fertodi 293	16.9	13.0	16.9	12.8	14.0	15.8	16.0	15.8	16.3	14.1
Sturdy	13.9	13.1	16.4	13.8	14.8	13.9	15.2	14.1	13.9	15.9
Gage	16.7	13.5	18.3	12.9	14.5	15.7	15.6	15.0	15.8	14.4
Timwin	15.6	12.9	17.4	13.3	14.0	15.1	16.2	15.3	15.9	14.7
Felix	13.5	12.3	13.1	12.7	13.2	15.9	17.2	13.9	14.6	13.8
Arthur	16.0	14.7	18.5	12.4	14.5	14.7	16.4	15.4	16.1	15.2
Parker	14.8	13.9	18.0	12.7	14.4	13.9	14.6	14.0	15.0	14.8
Riley 67	16.1	13.9	16.3	12.3	14.0	12.7	15.2	12.1	15.5	15.3
Stadler	15.4	13.9	16.0	11.6	12.6	12.2	14.8	11.6	15.2	14.6
Scout 66	16.4	15.7	17.7	13.5	14.0	15.3	16.5	14.9	14.7	14.4
Blueboy	16.8	13.2	15.6	13.6	14.0	13.6	15.3	13.4	17.4	14.6
Winalta	16.6	13.5	15.8	11.9	14.7	13.4	14.4	12.7	15.2	13.8
Shawnee	16.4	12.8	17.9	11.7	12.8	12.3	15.3	13.9	15.0	12.9
San Pastore	13.6	12.4	16.3	11.1	12.6	13.4	15.7	11.9	14.0	13.3
Lancer	15.9	13.2	16.2	12.4	14.4	13.8	16.3	13.9	14.6	14.0
Heine VII	14.3	11.7	13.4	11.5	14.7	14.0	17.6	13.9	14.7	15.3
Bezostaia	14.5	13.5	15.7	12.1	13.5	14.3	16.0	13.4	14.3	14.2
Gaines	13.9	11.2	12.7	12.5	12.6	15.2	16.0	13.3	14.1	16.1
Yorkstar	16.6	12.7	12.7	10.6	12.6	11.1	15.2	10.1	13.7	11.3
Lerma Rojo 64	15.0	16.0	18.4	14.3	15.2	15.1	18.1	15.2	16.3	17.3
INIA 66	13.8	16.0		14.1	14.7	16.5	16.6	14.7		16.1
Mean	15.9	13.9	16.8	13.0	14.5	14.8	16.4	14.4	15.8	15.1

Table 40. (Continued)

Cultivar	Ankara, Turkey	Eskisehir, Turkey	Karaj, Iran	Mashad, Iran	Kabul, Afghanistan	Mazar-i-Sharif, Afghanistan	Suwon, Korea	Sapporo, Japan	Mean 28 locations	Mean 25 locations[b]
Atlas 66	19.0	16.7	14.7	17.0	19.5	19.1	22.6			19.3
Purdue 4930A6-28-2-1	15.6	17.3	13.1	16.3	20.4	17.6	20.3	22.3	18.6	18.3
NB 67730	15.4	15.8	11.7	16.4	19.5	17.4	19.0	22.0	17.5	17.2
Cappelle Desprez	16.7	15.3	12.3	16.6	17.5	18.0	22.9			16.0
Bankuti 1201	15.1	15.5	11.3	15.7	16.9	15.8	20.4			15.8
Benhur	13.8	14.6	11.8	16.7	16.5	14.6	17.1	17.8	15.8	15.7
Triumph 64	14.4	15.6	10.8	17.4	17.0	15.5	16.0	18.0	15.7	15.6
Yung Kwang	15.0	14.5	12.2	15.7	17.8	15.7	19.6	21.2	15.8	15.4
Odin	15.2	16.1	13.5	17.9	17.5	19.6	19.2	16.0	15.6	15.4
Fertodi 293	15.9	13.3	10.5	17.2	18.0	17.3	18.0	20.1	15.7	15.3
Sturdy	15.9	15.6	13.0	17.5	16.1	15.0	19.2	18.8	15.4	15.1
Gage	14.0	13.6	10.8	16.3	17.1	14.6	17.7	20.3	15.5	15.1
Timwin	13.6	14.7	11.8	15.4	17.0	14.5	20.3	15.9	15.4	15.1
Felix	14.7	17.0	14.1	18.1	18.7	18.1	24.7	17.0	15.5	15.1
Arthur	13.5	13.0	11.5	17.3	16.3	15.0	17.8	17.9	15.4	15.1
Parker	14.2	13.8	13.8	15.4	17.5	15.8	17.6	19.2	15.4	15.0
Riley 67	13.7	12.6	11.3	16.1	16.8	16.3	18.6	17.1	15.1	14.9
Stadler	12.8	13.8	12.4	16.6	16.4	13.4	16.6	14.7	14.4	14.9
Scout 66	13.0	13.0	10.7	16.8	15.7	15.0	15.5	19.2	15.1	14.8
Blueboy	13.6	14.3	11.4	15.9	16.3	15.4	20.0	18.9	15.0	14.6
Winalta	14.2	14.2	11.8	15.8	16.5	16.4	17.0	17.0	14.7	14.5
Shawnee	13.4	14.2	11.4	17.9	16.2	15.0	18.1	19.7	14.9	14.5
San Pastore	13.7	14.5	10.5	18.3	15.9	15.0				14.5
Lancer	11.9	12.5	11.2	16.4	16.6	15.9	17.2	18.1	14.7	14.4
Heine VII	14.0	14.4	11.1	17.1	17.2	16.5	21.0	19.0	14.8	14.4
Bezostaia	13.1	12.9	10.7	17.7	14.8	15.0	15.3	16.3	14.2	14.1
Gaines	10.8	11.2	10.1	17.9	15.4	15.3	17.7	16.7	14.0	13.7
Yorkstar	11.5	12.1	11.1	16.4	15.3	15.1	17.5	14.6	13.4	13.1
Lerma Rojo 64	16.2	16.7	12.3	.	15.0	14.6		.		15.9[c]
INIA 66	15.8	15.8	13.0	15.9	14.4	15.5				15.4[d]
Mean	14.3	14.5	11.8	16.7	16.8	15.9	18.8	18.2	15.3	15.3

[a] Two reps only.
[b] Excluding Jokioinen, Finland; Suwon, Korea; and Sapporo, Japan.
[c] Mean of 19 locations for which Bezostaia averaged 13.9%.
[d] Mean of 18 locations for which Bezostaia averaged 14.0%.

Table 41. Summary of "Lysine Percent of Protein" for cultivars grown in the "2nd International Winter Wheat Performance Nursery," 1970.

Cultivar	Davis, Calif. U.S.	Ft. Collins, Colo. U.S.	Stillwater, Okla U.S.	Lincoln, Nebr. U.S.	Rowan Co., N.C. U.S.	Ithaca, N.Y. U.S.	Cambridge, England	Wageningen, Netherlands	Svalof, Sweden	Jokioinen, Finland
Yorkstar	2.87	3.18	2.77	3.04	3.17	3.54	3.16	2.99	2.80	2.89
Gaines	2.83	3.01	2.60	2.87	3.09	3.13	3.35	2.92	2.92	2.77
Stadler	2.77	2.89	2.63	2.78	2.92	3.11	3.05	2.85	2.80	2.79
Odin	2.81	3.07	2.75	2.86	2.81	3.16	3.07	2.84	3.01	2.83
Riley 67	2.74	2.73	2.64	2.75	2.96	3.29	3.09	2.75	2.73	2.82
Felix	2.81	2.89	2.63	2.83	2.86	3.29	3.03	2.95	2.92	2.76
San Pastore	2.77	2.89	2.56	2.78	3.08	2.99	2.94	2.71	3.03	
Cappelle Desprez	2.73	2.77	2.60	2.75	2.75	2.69	2.97	2.76	2.70	2.82
Blueboy	2.80	2.83	2.65	2.78	3.10	3.26	3.13	2.80	2.77	2.63
Timwin	2.76	2.75	2.60	2.73	2.98	3.18	3.01	2.83	2.88	2.72
Bezostaia	2.84	2.89	2.67	2.86	2.89	3.23	3.11	2.75	2.84	2.90
Bankuti 1201	2.72	2.71	2.59	2.76	2.83	2.98	2.87	2.68	2.75	2.74
Lancer	2.78	2.60	2.74	2.95	2.96	3.36	3.07	2.69	2.65	2.76
Shawnee	2.72	2.72	2.68	2.82	3.00	3.18	3.00	2.73	2.68	2.63
Arthur	2.81	2.86	2.64	2.81	2.92	3.30	3.19	2.67	2.72	2.83
Parker	2.76	2.74	2.64	2.81	2.97	3.14	3.21	2.70	2.73	2.74
Heine VII	2.70	2.84	2.55	2.76	2.78	3.11	3.20	2.89	3.00	2.75
Winalta	2.77	2.80	2.59	2.80	2.84	3.12	3.00	2.73	2.67	2.58
Gage	2.83	2.70	2.56	2.75	2.93	3.32	3.06	2.66	2.72	2.70
Scout 66	2.77	2.66	2.64	2.91	2.95	3.29	3.16	2.61	2.75	2.70
Fertodi 293	2.64	2.72	2.60	2.68	2.83	3.13	3.12	2.63	2.66	2.64
Yung Kwang	2.76	2.69	2.56	2.78	2.87	3.03	2.92	2.64	2.71	2.65
Triumph 64	2.76	2.63	2.65	2.80	2.87	3.06	2.96	2.60	2.79	2.72
Atlas 66	2.65	2.57	2.52	2.68	2.69	2.79	2.93	2.58	2.67	
Sturdy	2.74	2.64	2.55	2.68	2.80	2.94	3.04	2.62	2.79	2.58
Benhur	2.77	2.58	2.57	2.75	2.99	3.17	2.93	2.59	2.62	2.72
NB 67730	2.76	2.71	2.44	2.66	2.74	2.94	2.79	2.64	2.72	2.68
Purdue 4930A6-28-2-1	2.76	2.75	2.56	2.74	2.79	3.06	3.03	2.40	2.44	2.68
Lerma Rojo 64	2.68	2.57					2.86	2.68		
INIA 66	2.67	2.65					2.96	2.71		
Mean	2.76	2.77	2.62	2.79	2.90	3.14	3.04	2.72	2.77	2.73

Table 41. (Continued)

Cultivar	Monsheim, W. Germany[a]	Weihenstephan, W. Germany	Vienna, Austria	Zurich, Switzerland	Milano, Italy	Rieti, Italy	Novi Sad, Yugoslavia	Zagreb, Yugoslavia	Martonvasar, Hungary	Fundulea, Romania
Yorkstar	2.81	3.17	2.97	3.22	2.99	3.35	2.99	3.51	2.85	3.30
Gaines	2.96	3.15	2.98	2.94	3.03	2.91	3.01	3.10	2.93	2.81
Stadler	2.83	2.94	2.75	3.18	2.97	3.20	2.85	3.20	2.81	2.92
Odin	2.84	3.10	2.97	3.02	2.79	2.86	2.89	2.88	2.82	2.73
Riley 67	2.83	2.99	2.82	3.06	2.80	3.12	2.99	3.13	2.76	2.85
Felix	3.03	3.00	2.97	2.89	2.91	2.79	2.93	2.93	3.01	2.96
San Pastore	2.94	3.03	2.78	3.20	2.91	2.87	2.82	3.02	2.80	2.86
Cappelle Desprez	2.87	2.90	2.76	2.79	2.72	2.70	2.85	2.80	2.71	2.62
Blueboy	2.78	2.91	2.72	2.77	2.84	2.90	2.97	3.01	2.70	2.84
Timwin	2.84	3.09	2.72	3.00	2.82	2.90	2.89	2.89	2.77	2.88
Bezostaia	2.75	2.93	2.69	2.99	2.76	2.71	2.82	2.90	2.81	2.82
Bankuti 1201	2.66	2.78	2.64	2.86	2.74	2.73	2.70	2.79	2.66	2.72
Lancer	2.80	2.95	2.72	2.89	2.77	2.82	2.86	3.00	2.87	2.91
Shawnee	2.73	2.97	2.66	3.27	2.86	2.94	2.79	2.90	2.81	2.96
Arthur	2.79	2.83	2.63	3.03	2.84	2.81	2.77	2.82	2.77	2.77
Parker	2.84	2.96	2.66	3.07	2.76	2.90	2.97	2.93	2.81	2.81
Heine VII	2.79	2.99	2.81	3.08	2.74	2.85	2.71	2.84	2.75	2.73
Winalta	2.78	2.93	2.63	2.98	2.80	2.87	2.93	2.93	2.77	2.83
Gage	2.76	2.92	2.68	2.89	2.76	2.69	2.90	2.78	2.72	2.84
Scout 66	2.71	2.78	2.63	2.90	2.80	2.66	2.75	2.77	2.91	2.80
Fertodi 293	2.79	2.90	2.67	2.84	2.83	2.75	2.79	3.02	2.74	2.93
Yung Kwang	2.73	2.79	2.51	2.97	2.77	2.81	2.94	2.93	2.83	2.90
Triumph 64	2.79	2.84	2.63	3.01	2.64	2.71	2.77	2.83	2.71	2.77
Atlas 66	2.61	2.72	2.51	2.70	2.57	2.52	2.71	2.66	2.62	2.59
Sturdy	2.85	2.92	2.64	2.85	2.80	2.82	2.79	2.84	2.91	2.67
Benhur	2.68	2.85	2.58	2.85	2.68	2.73	2.71	2.65	2.64	2.71
NB 67730	2.61	2.75	2.66	2.79	2.66	2.57	2.66	2.67	2.57	2.69
Purdue 4930A6-28-2-1	2.64	2.74	2.48	2.71	2.68	2.60	2.65	2.62	2.62	2.68
Lerma Rojo 64	2.74	2.65	2.63	2.94	2.68	2.72	2.64	2.81	2.63	2.69
INIA 66	2.79	2.60		2.97	2.66	2.58	2.70	2.75		2.73
Mean	2.78	2.90	2.71	2.95	2.79	2.81	2.82	2.90	2.77	2.81

Table 41. (Continued)

Cultivar	Ankara, Turkey	Eskisehir, Turkey	Karaj, Iran	Mashad, Iran	Kabul, Afghanistan	Mazar-i-Sharif, Afghanistan	Suwon, Korea	Sapporo, Japan	Mean 28 locations	Mean 25 locations[b]
Yorkstar	3.24	3.05	3.23	2.66	2.93	2.92	2.81	2.94	3.01	3.03
Gaines	3.25	3.19	3.32	2.77	2.85	2.89	2.72	2.78	2.97	2.99
Stadler	3.01	2.97	3.06	2.63	2.79	3.05	2.71	2.95	2.91	2.92
Odin	2.87	2.86	3.10	2.79	2.82	2.91	2.62	2.80	2.89	2.91
Riley 67	2.91	3.01	3.19	2.72	2.79	2.78	2.71	2.67	2.88	2.90
Felix	2.78	2.75	2.89	2.69	2.73	2.78	2.84	2.74	2.88	2.89
San Pastore	2.82	2.86	3.25	2.65	2.81	2.97				2.89
Cappelle Desprez	2.66	2.74	3.05	2.90	2.67	2.62	2.84			2.88
Blueboy	2.89	2.87	3.13	2.76	2.78	2.79	2.66	2.80	2.85	2.87
Timwin	2.88	2.83	3.07	2.79	2.74	2.90	2.60	2.75	2.85	2.87
Bezostaia	2.96	2.96	3.16	2.66	2.94	2.88	2.73	2.79	2.87	2.87
Bankuti 1201	2.81	2.80	3.08	2.66	2.72	2.83	2.62			2.87
Lancer	2.97	2.92	3.08	2.76	2.74	2.76	2.78	2.73	2.85	2.85
Shawnee	2.87	2.81	3.08	2.62	2.79	2.82	2.69	2.62	2.83	2.86
Arthur	2.89	3.02	3.16	2.69	2.88	2.97	2.61	2.76	2.85	2.86
Parker	2.78	2.86	2.87	2.71	2.70	2.78	2.70	2.69	2.83	2.84
Heine VII	2.78	2.80	3.13	2.69	2.73	2.81	2.73	2.59	2.82	2.84
Winalta	2.83	2.80	3.02	2.81	2.76	2.75	2.62	2.65	2.81	2.83
Gage	2.90	2.85	3.22	2.75	2.68	2.89	2.61	2.55	2.81	2.83
Scout 66	2.89	3.04	3.15	2.70	2.73	2.86	2.75	2.61	2.82	2.83
Fertodi 293	2.73	2.85	3.21	2.60	2.71	2.77	2.73	2.76	2.80	2.81
Yung Kwang	2.70	2.81	3.02	2.78	2.69	2.78	2.54	2.64	2.78	2.80
Triumph 64	2.75	2.73	3.11	2.68	2.77	2.72	2.72	2.67	2.77	2.78
Atlas 66	2.69	2.76	2.80	2.87	2.69	2.72	2.56			2.78
Sturdy	2.70	2.70	2.89	2.73	2.67	2.70	2.53	2.60	2.75	2.77
Benhur	2.75	2.84	3.06	2.74	2.76	2.92	2.69	2.70	2.76	2.76
NB 67730	2.72	2.70	3.18	2.73	2.80	2.78	2.55	2.37	2.70	2.72
Purdue 4930A6-28-2-1	2.72	2.72	3.00	2.70	2.72	2.85	2.57	2.67	2.70	2.71
Lerma Rojo 64	2.72	2.69	3.03		2.80	2.82		.		2.74[c]
INIA 66	2.66	2.69	2.97	2.76	2.76	2.74		.		2.74[d]
Mean	2.84	2.85	3.09	2.72	2.76	2.82	2.67	2.70	2.83	2.84

[a] Two reps only.
[b] Excluding Jokioinen, Finland; Suwon, Korea; and Sapporo, Japan.
[c] Mean of 19 locations for which Bezostaia averaged 2.88%.
[d] Mean of 18 locations for which Bezostaia averaged 2.88%.

Table 42. Summary of "Date of Flowering" (days from Jan. 1) for cultivars grown in the "2nd International Winter Wheat Performance Nursery," 1970.

Cultivar	Davis, Calif U.S	Ft. Collins, Colo U S	Stillwater, Okla U S	Lincoln, Nebr. U S	Ithaca, N Y.[a] U S	El-Harrach, Algeria	Cambridge, England[a]	Wageningen, Netherlands	Svalof, Sweden	Jokioinen, Finland	Monsheim, W. Germany[a]
Triumph 64	122	158	116	140	149	126	149	157	168	172	114
Benhur	126	157	114	139	151	125	151	157	168	171	118
San Pastore	120	160	115	139	152	125	147	156	169		119
Arthur	125	160	115	140	151	125	157	159	170	173	117
Sturdy	121	159	118	141	155	121	150	156	169	173	116
Parker	126	159	118	142	155	127	153	159	170	173	118
Riley 67	130	162	118	141	155	127	155	159	171	171	119
Stadler	132	162	120	142	153	126	153	159	171	172	121
Purdue 4930A6-28-2-1	128	159	120	143	153	126	152	158	168	172	119
Bezostaia	126	161	118	144	155	125	154	159	172	173	121
Scout 65	128	159	119	141	151	147	153	159	169	172	119
NB 67730	130	161	120	144	152	133	152	159	168	172	119
Yung Kwang	131	161	122	144	154	132	152	158	168	174	119
Gage	132	163	120	144	155	134	153	159	170	172	119
Atlas 66	128	165	122	144	157	125	154	159	173		122
Shawnee	128	163	122	144	154	135	153	160	173	172	121
Fertodi 293	134	164	122	144	156	131	154	159	171	173	121
Timwin	133	164	121	143	155	149	155	160	171	173	121
Bankuti 1201	136	164	126	144	157	127	154	160	172	172	122
Blueboy	126	167	122	144	158	125	161	160	174	175	126
Lancer	135	164	123	144	155	149	157	160	173	173	121
Winalta	137	167	127	148	157	124	159	160	173	172	123
Yorkstar	137	165	127	144	157	147	159	160	172	173	126
Gaines	139	167	128	147	159	147	157	161	172	174	126
Heine VII	148	172	129	153	161	125	162	162	175	175	129
Cappelle Desprez	144	172	132	153	160	122	169	162	175	175	129
Felix	154	172	142	154	162	147	165	163	176	175	131
Odin	153	173	140	154	163	149	163	166	176	175	136
Lerma Rojo 64		160				113	146	154			114
INIA 66		158				110	140	154			109
Mean	132	163	126	144	155	131	155	159	171	173	121

Table 42. (Continued)

Cultivar	Weihenstephan, W. Germany	Vienna, Austria	Zurich, Switzerland	Milano, Italy	Rieti, Italy	Novi Sad, Yugoslavia	Zagreb, Yugoslavia[a]	Martonvasar, Hungary	Fundulea, Romania	Tolbukhin, Bulgaria	Ankara, Turkey[a]
Triumph 64	156	147	165	144	136	145	152	153	134	146	145
Benhur	157	149	165	143	139	145	152	152	136	145	150
San Pastore	157	150	166	143	137	147	151	152	136	147	154
Arthur	158	149	167	146	141	147	153	154	138	149	151
Sturdy	158	148	166	144	137	148	152	153	136	146	150
Parker	159	150	169	146	140	149	155	155	139	150	149
Riley 67	160	152	168	147	143	150	156	158	140	153	155
Stadler	159	154	169	147	142	150	156	158	141	153	154
Purdue 4930A6-28-2-1	159	152	166	146	144	147	154	155	141	155	154
Bezostaia	162	153	168	146	143	150	153	156	141	153	150
Scout 66	157	149	167	146	142	149	156	155	139	155	156
NB 67730	157	151	166	146	142	149	156	156	138	154	153
Yung Kwang	157	150	166	146	143	148	153	154	139	152	150
Gage	158	151	169	148	144	155	158	158	141	158	153
Atlas 66	161	157	170	147	146	154	156	159	145	160	156
Shawnee	160	153	171	148	144	154	158	158	142	159	155
Fertodi 293	160	153	170	147	149	154	158	156	145	158	154
Timwin	163	154	170	148	144	152	158	159	144	153	154
Bankuti 1201	161	153	169	148	146	152	157	159	146	158	154
Blueboy	164	157	172	152	150	159	159	162	149	167	153
Lancer	161	154	171	149	150	154	158	159	146	160	157
Winalta	163	157	172	151	151	158	157	162	149	163	156
Yorkstar	164	159	172	151	151	158	159	161	148	161	154
Gaines	165	158	173	151	151	158	160	161	148	162	157
Heine VII	167	164	174	155	156	159	163	165	123	166	156
Cappelle Desprez	168	164	172	156	158	164	164	165	157	171	160
Felix	168	165	176	156	160	162	164	166	157	172	161
Odin	171	165	179	159	161	164	168	168	127	172	165
Lerma Rojo 64	154	148	163	138	130	140	148	147	135	139	142
INIA 66	154		162	136	126	140	147		134	138	143
Mean	161	154	169	148	145	152	156	158	141	156	153

Table 42. (Continued)

Cultivar	Eski-sehir, Turkey	Sulai-maniya, Iraq	Karaj, Iran	Mashad, Iran	Kabul, Afghan-istan	Mazar-i-Sharif, Afghan-istan	Shalimar, Kashmir India	Suwon, Korea	Sapporo, Japan	Mean 31 locations	Mean 29 locations[b]
Triumph 64	143	110	104	132	126	105	119	139	163	140	138
Benhur	144	110	106	132	126	105	120	138	163	140	139
San Pastore	143	110	108	132	126	106	125	142			139
Arthur	145	111	111	127	128	106	125	139	166	142	140
Sturdy	151	113	115	126	132	112	121	138	167	142	140
Parker	147	113	111	129	128	109	124	140	167	143	141
Riley 67	152	112	109	127	131	108	125	142	167	144	142
Stadler	151	113	109	133	131	107	126	140	168	144	142
Purdue 4930A6-28-2-1	151	116	109	130	128	113	128	141	166	144	142
Bezostaia	151	116	106	128	133	110	124	141	168	144	142
Scout 66	149	118	105	129	126	112	128	139	168	144	142
NB 67730	152	118	105	130	129	115	130	141	166	144	142
Yung Kwang	150	118	111	123	134	117	126	142	168	144	142
Gage	156	117	109	130	128	117	128	143	168	145	144
Atlas 66	154	115	105	126	128	112	126	147			144
Shawnee	154	117	118	132	131	114	129	144	169	146	145
Fertodi 293	157	120	108	127	132	115	131	146	169	146	145
Timwin	154	120	115	132	136	114	134	143	170	147	145
Bankuti 1201	158	120	103	126	129	117	132	144			145
Blueboy	155	116	115	124	138	112	134	147	169	148	146
Lancer	156	121	112	129	133	121	133	145	168	148	147
Winalta	161	121	117	132	137	121	133	145	170	149	148
Yorkstar	157	119	117	131	137	120	134	145	170	150	148
Gaines	159	121	118	138	140	121	134	146	172	151	149
Heine VII	161	120	117	126	140	127	136	155	175	151	150
Cappelle Desprez	167	137	114	129	144	128	134	159			153
Felix	173	132	126	131	148	129	143	159	176	157	156
Odin	181	141	133	132	147	134	145	159	178	158	157
Lerma Rojo 64	142	99	101		117	95	112		.		134[c]
INIA 66	139	90	99	134	113	94	107		..		130[d]
Mean	154	117	111	130	132	114	128	145	169	146	144

[a] One rep only.
[b] Excluding Jokioinen, Finland and Sapporo, Japan.
[c] Mean of 22 locations for which Bezostaia averaged 143 days from Jan. 1.
[d] Mean of 21 locations for which Bezostaia averaged 141 days from Jan. 1.

Table 43. Summary of "Date of Ripening" (days from Jan. 1) for cultivars grown in the "2nd International Winter Wheat Performance Nursery," 1970.

Cultivar	Stillwater, Okla.[a] U S	Lincoln Nebr U S	El-Harrach, Algeria	Wageningen, Netherlands	Svalof, Sweden	Jokioinen, Finland	Monsheim, W. Germany[a]	Weihen-stephan, W. Germany	Vienna, Austria[a]
Triumph 64	152	173	176	208	221	215	166	207	195
Sturdy	152	173	173	205	223	217	166	207	196
Benhur	152	176	178	208	223	216	166	207	197
Yung Kwang	152	175	163	204	221	219	167	207	197
Arthur	152	176	176	208	225	216	166	207	197
Scout 66	152	174	179	208	222	216	166	207	198
NB 67730	152	175	181	208	221	217	166	207	196
Parker	152	174	176	208	223	218	167	212	198
Riley 67	152	175	176	208	226	216	166	212	197
Stadler	152	176	176	208	225	216	167	212	198
Purdue 4930A6-28-2-1	152	176	176	208	223	214	166	211	195
Gage	152	174	176	210	225	216	168	211	196
Bezostaia	152	175	181	211	228	218	167	213	198
Shawnee	152	175	176	210	227	217	169	212	204
Timwin	152	175	181	208	226	216	166	214	203
Lancer	152	174	181	210	227	217	167	212	203
Fertodi 293	152	175	176	210	226	217	166	227	200
Bankuti 1201	152	177	180	208	229	219	167	212	199
Yorkstar	152	179	181	210	228	217	169	217	205
Atlas 66	152	178	176	211	231		168	212	202
Winalta	152	177	176	208	228	217	168	217	201
Gaines	158	183	181	212	228	219	169	219	204
San Pastore	152	175	176	210	218		166	207	194
Blueboy	152	178	176	216	235	220	169	217	205
Heine VII	163	180	176	212	230	219	169	220	205
Cappelle Desprez	164	183	177	212	228	219	169	222	204
Felix	163	183	181	216	231	210	171	222	206
Odin	167	184	183	214	234	220	171	222	206
Lerma Rojo 64			167	202	.		165	205	197
INIA 66			167	202			165	205	
Mean	154	177	177	209	226	217	167	213	200

Table 43. (Continued)

Cultivar	Zurich, Switzerland	Milano, Italy	Rieti, Italy	Novi Sad, Yugoslavia	Zagreb, Yugoslavia[a]	Martonvasar, Hungary	Fundulea, Romania	Tolbukhin, Bulgaria	Ankara, Turkey[a]	Eskisehir, Turkey
Triumph 64	196	188	187	189	181	191	177	187	189	188
Sturdy	194	189	187	190	183	192	180	187	189	192
Benhur	199	189	188	190	182	191	180	187	189	191
Yung Kwang	193	189	190	190	184	193	181	189	189	193
Arthur	200	190	190	191	182	192	179	190	189	190
Scout 66	201	190	189	192	184	193	181	190	189	191
NB 67730	196	187	189	192	184	193	181	190	189	195
Parker	197	188	187	192	187	192	182	190	189	194
Riley 67	202	188	185	192	184	192	180	189	189	193
Stadler	199	189	180	191	186	196	178	189	189	191
Purdue 4930A6-28-2-1	199	188	189	191	182	193	181	190	189	194
Gage	199	188	190	192	184	194	181	194	189	204
Bezostaia	202	188	190	192	186	195	183	191	189	194
Shawnee	204	187	190	191	188	195	182	193	189	197
Timwin	204	189	190	192	184	197	181	192	189	198
Lancer	201	187	192	194	188	195	184	194	189	195
Fertodi 293	203	187	192	190	188	195	181	192	189	194
Bankuti 1201	203	189	188	196	190	196	182	192	189	202
Yorkstar	209	187	188	195	189	200	183	192	189	196
Atlas 66	208	191	192	195	186	196	188	195	208	195
Winalta	209	192	191	194	188	200	182	197	208	199
Gaines	205	187	186	192	190	199	182	194	208	198
San Pastore	200	185	182	184	181	191	176	184	189	187
Blueboy	212	192	198	196	190	199	182	199	208	204
Heine VII	211	190	193	195	191	201	185	198	208	202
Cappelle Desprez	212	194	193	197	192	202	185	201	208	205
Felix	215	189	193	195	191	202	186	202	208	190
Odin	218	194	192	197	195	205	187	202	208	195
Lerma Rojo 64	194	182	184	183	181	190	179	183	189	185
INIA 66	193	181	184	183	180		179	182	189	184
Mean	203	189	189	192	186	196	181	192	194	194

Table 43. (Continued)

Cultivar	Sulaimaniya, Iraq	Mashad, Iran	Kabul, Afghanistan	Mazar-i-Sharif, Afghanistan	Shalimar, Kashmir India	Suwon, Korea	Sapporo, Japan	Mean 26 locations	Mean 23 locations[b]
Triumph 64	142	173	169	142	157	180	203	183	182
Sturdy	146	173	173	144	160	181	207	184	182
Benhur	142	173	169	140	156	179	205	184	182
Yung Kwang	148	173	175	148	165	185	208	179	183
Arthur	143	173	167	141	164	178	205	184	183
Scout 66	146	173	166	142	165	180	208	185	183
NB 67730	148	173	168	144	164	184	210	185	183
Parker	143	173	170	141	161	183	211	185	183
Riley 67	143	173	167	144	161	183	205	185	183
Stadler	144	173	170	145	164	181	205	185	183
Purdue 4930A6-28-2-1	146	173	167	145	164	181	209	185	183
Gage	145	173	170	145	164	183	212	186	184
Bezostaia	145	173	171	143	163	183	205	186	185
Shawnee	147	173	171	146	164	187	213	187	185
Tinuwin	146	173	176	146	164	185	206	187	186
Lancer	151	173	172	148	164	188	209	187	186
Fertodi 293	149	173	171	146	165	186	213	187	186
Bankuti 1201	150	173	169	146	166	190			186
Yorkstar	148	173	173	149	165	186	206	188	187
Atlas 66	144	173	169	143	165	192	. .	.	187
Winalta	151	173	173	148	168	186	209	185	188
Gaines	152	173	177	150	168	188	215	190	188
San Pastore	144	173	168	139	158	185		.	188
Blueboy	146	173	178	146	170	193	215	189	190
Heine VII	154	173	181	157	171	194	215	192	191
Cappelle Desprez	163	173	178	156	169	199			192
Felix	160	173	187	157		187	215		192
Odin	171	173	188	161		197	216	188	194
Lerma Rojo 64	139	.	163	139	153				178[c]
INIA 66	139	173	165	139	151		.	.	176[d]
Mean	148	173	172	146	163	186	209	186	185

[a] One rep only.
[b] Excluding Jokioinen, Finland; Shalimar, Kashmir, India; and Sapporo, Japan.
[c] Mean of 19 locations for which Bezostaia averaged 184 days from Jan. 1.
[d] Mean of 18 locations for which Bezostaia averaged 182 days from Jan. 1.

Table 44. Summary of "Plant Height" in centimeters for cultivars grown in the "2nd International Winter Wheat Performance Nursery," 1970.

Cultivar	Davis, Calif. U.S	Ft. Collins, Colo U.S.	Lincoln, Nebr. U.S	El-Harrach, Algeria	Cambridge, England	Wageningen, Netherlands	Svalof, Sweden	Jokioinen, Finland	Weihenstephan, W Germany	Vienna, Austria
Gaines	85	89	71	83	74	75	64	39	71	74
Sturdy	110	84	72	83	73	82	72	41	74	71
Timwin	100	90	76	79	81	87	77	44	78	80
Felix	78	108	71	76	81	86	78	52	86	86
San Pastore	104	86	70	95	86	94	65		87	76
Cappelle Desprez	100	104	76	89	90	94	75	48	85	89
Blueboy	113	98	79	81	85	88	77	49	82	83
Bezostaia	101	99	81	95	93	96	81	57	85	90
Arthur	115	105	86	96	87	100	85	53	91	85
Heine VII	92	114	81	91	93	98	83	46	89	90
Yung Kwang	108	106	88	88	93	107	81	44	93	90
Parker	123	101	84	95	94	102	84	46	85	88
Benhur	115	104	94	94	95	99	87	43	93	96
Triumph 64	113	104	93	106	98	104	87	44	94	89
Yorkstar	99	111	92	90	90	100	86	47	93	96
Riley 67	105	106	89	94	94	105	88	51	96	96
Scout 66	111	110	91	99	103	106	89	46	92	101
Gage	115	109	88	91	99	108	90	48	92	100
Lancer	116	112	87	89	101	106	92	51	93	106
Odin	78	129	93	85	103	112	101	58	109	108
Shawnee	118	117	90	94	106	106	91	49	90	106
Stadler	113	114	93	103	101	108	98	58	97	104
Purdue 4930A6-28-2-1	131	113	96	98	101	113	90	53	102	99
Atlas 66	110	122	84	96	107	119	87		98	105
Fertodi 293	124	119	94	96	104	110	93	49	99	108
Winalta	114	118	95	101	107	111	95	46	98	109
NB 67730	115	118	98	96	110	118	98	51	103	108
Bankuti 1201	126	124	97	91	110	119	103	47	101	115
Lerma Rojo 64	113	95		93	89	91			74	81
INIA 66	98	76		80	78	85			68	
Mean	108	106	86	92	94	101	86	50	90	94

Table 44. (Continued)

Cultivar	Zurich, Switzerland	Milano, Italy	Rieti, Italy	Novi Sad, Yugoslavia	Martonvasar, Hungary	Fundulea Romania	Tolbukhin, Bulgaria	Ankara, Turkey[a]	Eskisehir, Turkey	Sulaimaniya, Iraq
Gaines	75	73	80	85	71	83	75	73	45	81
Sturdy	73	74	93	81	70	84	70	68	49	90
Timwin	80	82	89	90	80	95	75	92	51	93
Felix	90	93	108	94	86	105	95	84	75	85
San Pastore	91	98	102	92	86	95	74	77	68	101
Cappelle Desprez	93	96	88	92	84	99	95	81	73	93
Blueboy	88	91	113	104	72	99	91	91	51	110
Bezostaia	95	93	109	95	89	96	76	93	65	111
Arthur	98	110	118	98	94	106	83	91	65	104
Heine VII	91	109	116	100	91	109	95	95	66	101
Yung Kwang	93	112	113	105	92	105	97	83	56	115
Parker	93	102	110	104	95	108	91	74	61	109
Benhur	96	111	112	100	100	107	84	86	54	103
Triumph 64	98	112	115	102	97	107	86	99	55	108
Yorkstar	101	105	113	105	94	115	96	98	74	100
Riley 67	100	105	115	112	102	117	96	101	56	119
Scout 66	100	108	115	103	103	114	93	103	75	130
Gage	103	111	118	113	102	118	105	104	61	115
Lancer	104	114	126	110	111	123	109	111	73	120
Odin	120	122	128	119	99	127	117	105	65	103
Shawnee	108	118	119	124	107	126	108	111	78	99
Stadler	106	115	128	118	105	120	95	93	75	120
Purdue 4930A6-28-2-1	113	123	128	119	110	118	101	98	75	101
Atlas 66	104	126	128	114	118	113	96	107	95	143
Fertodi 293	108	119	127	116	106	125	101	100	81	130
Winalta	109	110	121	120	116	128	117	111	78	131
NB 67730	114	119	128	120	116	121	105	106	[illegible]	133
Bankuti 1201	116	124	125	120	121	130	104	110	71	130
Lerma Rojo 64	84	89	88	88	85	85	79	84	60	101
INIA 66	73	73	80	77		77	68	61	56	93
Mean	97	104	112	104	97	107	93	93	66	109

Table 44. (Continued)

Cultivar	Karaj, Iran	Mashad, Iran	Kabul, Afghanistan	Mazar-i-Sharif, Afghanistan	Shalimar, Kashmir India	Suwon, Korea	Sapporo, Japan	Mean	
								27 locations	25 locations[b]
Gaines	73	58	83	81	66	56	78	73	74
Sturdy	73	80	96	97	66	55	84	76	78
Timwin	75	68	103	97	71	58	94	81	82
Felix	74	57	110	98	60	71	87	84	85
San Pastore	71	68	118	110	75	56			86
Cappelle Desprez	86	46	100	98	75	69			87
Blueboy	75	69	106	103	78	69	88	86	88
Bezostaia	83	72	126	104	83	70	100	90	91
Arthur	72	68	120	108	88	64	96	92	93
Heine VII	85	67	117	105	79	70	90	91	93
Yung Kwang	85	71	115	92	95	77	88	92	94
Parker	79	73	114	113	96	67	88	92	94
Benhur	74	59	132	109	94	71	108	93	95
Triumph 64	83	72	125	111	103	64	101	95	97
Yorkstar	93	74	124	103	89	72	107	95	97
Riley 67	88	72	122	108	99	71	106	97	98
Scout 66	79	50	123	110	89	65	94	96	98
Gage	83	68	119	109	103	68	92	97	100
Lancer	89	66	116	110	101	68	99	100	102
Odin	91	57	121	101	70	81	125	101	102
Shawnee	88	70	124	113	109	67	106	102	103
Stadler	91	68	136	113	100	73	117	102	103
Purdue 4930A6-28-2-1	85	66	134	116	104	70	105	102	104
Atlas 66	86	51	127	112	106	77			105
Fertodi 293	95	66	126	120	100	72	96	103	106
Winalta	95	75	129	115	106	72	108	105	107
NB 67730	94	68	132	120	104	79	100	106	108
Bankuti 1201	98	63	136	129	111	72			110
Lerma Rojo 64	70		103	98	90				88[c]
INIA 66	56	66	86	91	80				76[d]
Mean	82	66	117	106	90	69	98	94	95

[a] One rep only.
[b] Excluding Jokioinen, Finland, and Sapporo, Japan.
[c] Mean of 21 locations for which Bezostaia averaged 94 cm
[d] Mean of 20 locations for which Bezostaia averaged 94 cm.

Table 45. Summary of percent "Lodging" for cultivars grown in the "2nd International Winter Wheat Performance Nursery," 1970.

Cultivar	Davis Calif U.S	Ft. Collins, Colo U S	Stillwater, Okla. U.S	Lincoln, Nebr. U.S	Rowan Co., N C. U S	El-Harrach, Algeria	Cambridge England	Wagen-ingen, Nether-lands	Svalof, Sweden
Cappelle Desprez	1	1	0	0	25	0	0	3	0
Blueboy	4	6	0	0	8	0	0	21	4
Gaines	3	0	0	13	5	0	0	1	0
Sturdy	0	0	0	0	0	0	0	1	0
Felix	69	0	0	0	3	14	0	0	0
Heine VII	66	0	0	1	20	3	0	0	1
Odin	48	1	0	0	23	0	0	1	4
San Pastore	23	0	23	0	48	14	0	9	0
Bezostaia	32	4	0	0	13	0	14	6	3
Benhur	55	5	23	0	38	3	0	10	5
Parker	5	0	0	0	43	20	0	6	5
Purdue 4930A6-28-2-I	10	9	5	0	60	0	3	19	5
Yorkstar	10	14	0	1	75	0	3	48	2
Shawnee	54	11	0	0	58	0	3	11	8
Timwin	3	0	0	1	45	3	5	53	1
Arthur	6	11	0	0	60	0	9	48	5
Yung Kwang	27	9	25	3	68	3	0	39	23
Stadler	35	10	23	1	75	0	8	40	14
Fertodi 293	5	5	0	0	78	1	35	64	10
Gage	13	9	0	0	83	1	6	36	15
Riley 67	45	9	25	0	75	0	11	75	13
Winalta	35	89	0	0	88	0	1	64	33
Lancer	23	43	0	0	95	0	23	78	13
Atlas 66	85	28	60	0	80	0	5	55	5
Triumph 64	82	5	0	18	60	20	21	33	15
Bankuti 1201	8	18	0	0	83	3	81	83	30
NB 67730	40	39	0	11	90	20	29	59	20
Scout 66	75	48	0	1	92	40	19	76	28
Lerma Rojo 64	24	6	. .	..		10	38	49	
INIA 66	1	5		.		0	0	1	
Mean	30	13	7	2	53	5	10	33	9

Table 45. (Continued)

Cultivar	Jokioinen, Finland[c]	Monsheim, W. Germany[b]	Weihenstephan, W. Germany	Vienna, Austria	Zurich, Switzerland	Milano, Italy	Ri[illegible], Italy	Novi Sad, Yugoslavia	Zagreb, Yugoslavia[a]
Cappelle Desprez	25	10	18	66	0	26	0	3	0
Blueboy	30	5	33	62	9	0	0	0	0
Gaines	18	5	54	75	3	1	0	0	0
Sturdy	20	10	82	62	0	13	0	0	0
Felix	21	10	63	62	0	0	0	0	0
Heine VII	19	5	51	65	0	10	0	10	0
Odin	34	10	51	56	0	38	0	0	0
San Pastore		5	65	47	9	8	0	18	0
Bezostaia	41	20	80	65	18	28	13	15	0
Benhur	40	5	74	56	6	54	25	8	0
Parker	25	10	92	62	13	53	50	20	10
Purdue 4930A6-28-2-1	31	25	85	53	21	50	38	38	5
Yorkstar	44	10	70	72	13	45	0	75	10
Shawnee	28	5	92	59	38	58	0	80	10
Timwin	34	15	79	75	3	50	13	62	70
Arthur	31	63	86	53	28	68	50	25	50
Yung Kwang	43	20	83	65	50	73	38	67	0
Stadler	48	25	96	62	25	55	13	63	30
Fertodi 293	21	68	75	69	36	73	25	99	15
Gage	48	15	84	59	40	40	75	94	90
Riley 67	45	40	91	66	25	51	50	94	85
Winalta	28	33	63	69	48	38	25	94	80
Lancer	35	63	83	62	45	40	50	92	90
Atlas 66		68	92	65	72	23	50	70	85
Triumph 64	38	15	96	56	80	48	62	75	85
Bankuti 1201	50	50	71	69	75	63	75	99	95
NB 67730	45	15	99	69	70	30	87	94	100
Scout 66	16	85	71	69	75	60	87	75	95
Lerma Rojo 64		20	26	66	9	43	0	58	0
INIA 66	.	10	20	.	1	0	0	0	0
Mean	33	25	71	63	27	38	27	48	31

Table 45. (Continued)

Cultivar	Martonvasar, Hungary	Fundulea, Romania	Tolbukhin, Bulgaria	Eskisehir, Turkey	Mashad, Iran	Kabul, Afghanistan	Mazar-i-Sharif, Afghanistan	Mean 25 locations	Mean 24 locations[f]
Cappelle Desprez	55	0	0	0	0	0	0	9	9
Blueboy	70	0	0	0	1	0	0	10	9
Gaines	60	0	0	0	0	0	0	10	9
Sturdy	90	0	0	0	0	0	0	11	11
Felix	70	0	0	0	0	0	0	12	12
Heine VII	70	1	0	0	1	0	0	13	13
Odin	65	0	0	4	0	5	0	14	13
San Pastore	65	0	0	0	0	21	26		16
Bezostaia	70	3	0	0	0	6	6	17	17
Benhur	65	3	0	0	0	25	8	20	20
Parker	60	25	0	0	1	11	6	21	21
Purdue 4930A6-28-2-1	60	3	0	4	1	19	1	22	21
Yorkstar	35	18	20	0	0	5	0	23	22
Shawnee	40	8	0	5	1	23	3	24	24
Timwin	35	53	0	0	1	35	5	26	25
Arthur	55	11	0	0	1	6	33	28	28
Yung Kwang	55	13	3	0	0	18	1	29	28
Stadler	50	11	0	5	1	46	3	30	29
Fertodi 293	15	48	20	4	0	6	1	31	31
Gage	30	25	10	4	0	10	2	32	31
Riley 67	35	33	0	0	0	23	16	36	36
Winalta	10	50	53	4	1	20	3	37	38
Lancer	15	53	65	4	0	34	21	41	41
Atlas 66	45	44	16	0	0	19	23		41
Triumph 64	30	63	8	0	0	38	89	41	42
Bankuti 1201	20	43	58	4	0	24	1	44	44
NB 67730	20	73	40	5	0	45	13	45	45
Scout 66	20	65	75	0	0	28	24	49	50
Lerma Rojo 64	40	13	0	0		10	5		22[d]
INIA 66	...	0	0	0	1	0	1		2[e]
Mean	47	21	12	1	0	16	10	26	25

[a] One rep only.
[b] Two reps only.
[c] Lodging caused by birds.
[d] Mean of 19 locations for which Bezostaia averaged 20%.
[e] Mean of 18 locations for which Bezostaia averaged 14%.
[f] Excluding Jokioinen, Finland.

Table 46. Summary of percent "Shattering" for cultivars grown in the "2nd International Winter Wheat Performance Nursery," 1970.

Cultivar	Ft Collins, Colo. U.S.	Wageningen, Netherlands	Svalof, Sweden	Jokioinen Finland	Rieti, Italy	Zagreb, Yugoslavia[a]	Martonvasar, Hungary	Fundulea, Romania
Scout 66	0	0	0	51	20	0	3	0
Gaines	0	10	0	51	19	0	0	0
Sturdy	0	8	0	72	17	0	0	1
Odin	0	0	0	41	24	2	12	1
NB 67730	0	10	0	60	21	0	0	0
Fertodi 293	0	0	0	48	23	1	2	0
Lancer	0	10	1	53	20	0	6	0
Heine VII	0	10	0	13	30	1	5	0
Shawnee	0	18	0	36	25	1	6	1
Bankuti 1201	0	5	0	50	19	0	0	0
Felix	0	18	0	25	21	1	7	0
Bezostaia	0	10	0	60	43	0	3	1
Cappelle Desprez	0	14	0	25	30	2	8	0
Atlas 66	0	19	0		41	0	6	1
Stadler	0	0	1	69	25	4	4	1
Timwin	0	33	4	76	29	1	6	1
Winalta	0	48	0	58	13	0	5	0
Benhur	1	0	0	94	43	5	8	1
Triumph 64	0	16	0	73	25	0	3	1
Parker	0	14	0	68	26	0	5	1
Gage	0	0	0	75	25	0	6	1
Yung Kwang	0	10	0	40	28	3	13	1
Blueboy	0	48	2	43	36	3	10	0
Riley 67	1	25	2	78	34	0	4	1
Yorkstar	1	58	4	75	34	5	4	0
Arthur	6	36	2	93	60	6	9	1
San Pastore	0	31	1		50	9	4	2
Purdue 1930A6-28-2-1	7	54	2	74	63	16	14	0
Lerma Rojo 64	0	0			21	0	3	0
INIA 66	0	14			30	1		0
Mean	1	17	1	58	30	2	5	1

Table 46. (Continued)

Cultivar	Tolbukhin, Bulgaria	Mashad, Iran	Kabul, Afghanistan	Mazar-i-Sharif, Afghanistan	Shalimar, Kashmir India	Mean	
						13 locations	12 locations[b]
Scout 66	0	1	0	0	0	5.8	2.0
Gaines	0	2	0	0	0	6.3	2.3
Sturdy	1	2	1	1	0	7.9	2.6
Odin	0	1	6	0	0	6.7	3.8
NB 67730	0	2	12	0	0	8.1	3.8
Fertodi 293	0	1	9	11	0	7.3	3.9
Lancer	0	1	8	3	1	7.9	4.2
Heine VII	1	2	0	4	1	5.2	4.5
Shawnee	0	1	4	1	0	7.2	4.8
Bankuti 1201	0	1	21	11	0	8.2	4.8
Felix	1	2	12	2	0	6.8	5.3
Bezostaia	0	2	6	0	1	9.7	5.5
Cappelle Desprez	2	2	11	2	0	7.4	5.9
Atlas 66	2	1	1	5	0		6.3
Stadler	1	0	23	20	0	11.4	6.6
Timwin	2	1	4	0	0	12.1	6.8
Winalta	0	1	15	1	0	10.8	6.9
Benhur	1	1	24	1	1	13.8	7.2
Triumph 64	1	1	44	0	0	12.6	7.6
Parker	0	1	46	2	0	12.5	7.9
Gage	0	2	55	9	0	13.3	8.2
Yung Kwang	0	1	1	41	1	10.7	8.3
Blueboy	1	1	0	1	0	11.2	8.5
Riley 67	1	1	45	16	0	16.0	10.8
Yorkstar	3	1	19	12	0	16.6	11.8
Arthur	4	1	57	15	1	22.4	16.5
San Pastore	1	1	58	69	0		18.8
Purdue 4930A6-28-2-1	5	2	30	42	0	23.9	19.8
Lerma Rojo 64	0		1	0	1		2.3[c]
INIA 66	0	1	5	0	1		5.2[d]
Mean	1	1	17	9	0	10.8	7.1

[a] One rep only.
[b] Excluding Jokioinen, Finland.
[c] Mean of 10 locations for which Bezostaia averaged 6.4%.
[d] Mean of 10 locations for which Bezostaia averaged 6.3%.

Table 47. Summary of percent "Winter Survival" for cultivars grown in the "2nd International Winter Wheat Performance Nursery," 1970.

Cultivar	Ft. Collins, Colo. U.S.	Lincoln, Nebr. U.S.	Ithaca, N.Y. U.S.	Wageningen, Netherlands	Svalof, Sweden	Jokioinen, Finland	Monsheim, W. Germany[a]	Weihenstephan, W. Germany
Bezostaia	100	100	91	89	100	64	90	85
Stadler	95	100	87	80	98	58	80	85
Benhur	90	95	85	78	98	58	80	88
Triumph 64	98	100	84	80	100	47	90	88
Arthur	93	98	89	80	100	62	80	85
Riley 67	90	95	83	76	100	55	80	85
Purdue 4930A6-28-2-1	95	99	83	84	99	55	80	90
Winalta	93	100	82	76	98	23	80	90
Gage	88	100	87	85	95	43	90	90
Timwin	78	100	84	73	100	46	80	85
Yorkstar	88	96	83	74	91	40	80	85
Scout 66	98	100	80	79	100	25	80	85
NB 67730	93	100	75	80	100	20	90	88
Parker	100	100	83	86	100	29	80	85
Lancer	93	100	80	79	99	29	80	73
Gaines	95	100	56	84	100	29	80	85
Shawnee	98	100	77	76	99	11	80	80
Fertodi 293	98	98	74	81	99	17	90	63
Sturdy	95	98	74	81	96	27	80	85
Odin	90	96	79	88	93	45	60	80
Yung Kwang	94	95	50	81	95	8	90	68
Felix	98	80	75	75	79	40	70	83
Heine VII	95	83	60	85	84	15	80	68
Bankuti 1201	85	95	55	80	94	9	80	65
Cappelle Desprez	73	83	13	84	49	[illegible]	80	63
Blueboy	25	96	61	50	95	11	80	73
Atlas 66	90	63	3	88	56	0	80	60
San Pastore	90	78	6	74	63	0	80	54
Lerma Rojo 64	14	0	0	53	0	0	80	25
INIA 66	8	0	0	44	0	0	90	20
Mean	84	95	69	77	92	29	81	75

Table 47. (Continued)

Cultivar	Milano, Italy	Rieti, Italy	Zagreb, Yugoslavia	Ankara, Turkey[a]	Karaj, Iran	Kabul, Afghanistan	Suwon, Korea	Sapporo, Japan	Mean 16 locations
Bezostaia	95	98	95	99	97	65	93	53	88
Stadler	98	98	90	99	92	73	84	73	87
Benhur	90	95	89	99	99	70	84	71	86
Triumph 64	97	100	91	99	95	75	76	38	85
Arthur	93	100	90	99	95	65	85	50	85
Riley 67	98	100	90	99	90	68	86	45	84
Purdue 4930A6-28-2-1	95	100	89	99	95	70	90	16	84
Winalta	95	99	84	99	84	80	93	31	82
Gage	95	97	90	99	92	78	81	1	82
Timwin	95	97	87	99	93	70	74	58	82
Yorkstar	95	94	92	99	96	70	89	43	82
Scout 66	95	98	89	99	97	75	86	20	82
NB 67730	96	100	91	99	98	92	85	3	82
Parker	94	99	92	99	87	65	91	6	81
Lancer	96	98	90	99	89	75	81	12	80
Gaines	96	99	91	99	95	70	78	7	79
Shawnee	96	99	92	99	87	83	76	3	79
Fertodi 293	94	99	89	99	99	73	80	5	79
Sturdy	97	96	92	99	88	70	85	10	78
Odin	97	100	90	99	76	70	56	36	78
Yung Kwang	96	96	91	99	96	65	91	2	76
Felix	95	100	90	99	87	65	65	19	76
Heine VII	94	100	93	99	98	68	71	2	75
Bankuti 1201	94	100	91	99	98	76	66	0	74
Cappelle Desprez	95	100	92	99	98	78	79	0	68
Blueboy	93	95	67	99	76	73	61	2	66
Atlas 66	94	100	92	99	98	65	73	0	66
San Pastore	93	99	89	99	95	65	60	0	65
Lerma Rojo 64	95	97	90	96	94	58	0	0	44
INIA 66	95	98	89	85	83	48	0	. .	44[b]
Mean	95	98	89	98	92	70	79	21	77

[a] One rep only.
[b] Mean of 15 locations for which Bezostaia averaged 91%.

Table 48. Summary of "Frost Damage" (0–9) for cultivars grown in the "2nd International Winter Wheat Performance Nursery," 1970.

Cultivar	Wageningen, Netherlands	Zurich, Switzerland	Milano, Italy	Fundulea, Romania	Eskisehir, Turkey	Shalimar, Kashmir India	Mean 6 locations
NB 67730	1.0	1.5	1.5	0.3	0.0	0.0	0.7
Gaines	0.8	1.5	1.5	0.8	0.0	0.0	0.8
Purdue 4930A6-28-2-1	1.0	1.0	2.0	0.8	1.0	0.0	1.0
Bezostaia	0.5	1.0	4.0	0.8	0.0	0.0	1.0
Yung Kwang	1.3	2.5	2.0	0.0	1.0	0.0	1.1
Gage	0.8	2.0	2.5	0.5	1.0	0.0	1.1
Parker	0.5	2.5	3.0	0.3	0.3	0.0	1.1
Triumph 64	1.3	1.5	2.5	0.3	1.0	0.0	1.1
Lancer	1.5	2.5	2.8	0.5	0.0	0.0	1.2
Stadler	1.3	2.0	3.0	0.0	1.0	0.0	1.2
Atlas 66	0.5	1.0	2.0	1.5	2.0	0.0	1.2
Scout 66	1.3	1.5	2.8	0.8	1.0	0.0	1.2
Sturdy	1.3	3.0	2.5	0.0	1.0	0.0	1.3
Bankuti 1201	1.0	2.5	3.0	0.5	1.0	0.0	1.3
Capelle Desprez	0.8	3.0	2.3	1.0	1.0	0.0	1.4
Arthur	1.3	1.5	3.8	1.0	1.0	0.0	1.4
Odin	0.5	2.0	3.0	0.8	1.0	1.0	1.4
Heine VII	0.8	2.0	3.0	1.3	1.0	0.0	1.4
Winalta	1.5	4.5	2.3	0.5	0.0	0.0	1.5
Riley 67	1.8	2.0	3.5	0.5	1.0	0.0	1.5
Fertodi 293	1.3	2.5	3.8	0.3	1.0	0.0	1.5
Benhur	1.5	2.0	3.5	1.0	1.0	0.0	1.5
Timwin	1.8	3.0	3.0	0.8	1.0	0.0	1.6
Shawnee	1.5	4.5	3.0	0.5	0.0	0.0	1.6
San Pastore	1.8	1.5	2.8	1.3	2.0	0.0	1.6
Yorkstar	1.8	1.5	3.5	1.3	2.0	0.0	1.7
Felix	1.8	3.0	3.0	1.0	1.0	1.0	1.8
Blueboy	3.0	6.0	3.8	1.0	2.0	0.8	2.8
Lerma Rojo 64	3.0	4.5	3.0	4.3	3.0	0.0	3.0
INIA 66	3.5	4.0	3.8	4.3	4.0	0.0	3.3
Mean	1.4	2.5	2.9	0.9	1.1	0.1	1.5

Table 49. Summary of "Stripe Rust" severity and response for cultivars grown in the "2nd International Winter Wheat Performance Nursery," 1970.

Cultivar	Davis, Calif		Cambridge, England		Wageningen, Netherlands	Jokioinen, Finland	Zurich, Switzerland		Rieti, Italy		Fundulea, Romania		Eskisehir, Turkey	
	% Sev.	Resp	% Sev	Resp.	Resp	% Sev	% Sev.	Resp	% Sev.	Resp	% Sev.	Resp.	% Sev.	Resp.
Cappelle Desprez	0	O	3	MR-MS	R	10	2	O-R	0	O	0	O	1	R
Sturdy	5	R	1	R MR	R	8	5	O-MR	0	O	0	O	1	R
Fertodi 293	5	R	2	MR	S	36	0	O-R	0	O	0	O	1	R
Felix	0	O	1	R	R	25	1	O-R	0	O	0	O	1	R
Odin	0	O	1	R-MR	R	8	0	O-R	0	O	0	O	1	R
Heine VII	5	R	1	MS	MR-S	24	0	O	0	O	0	O	1	R
Lancer	25	R-MR	1	R	R-S	21	4	R-MR	0	O	0	O	1	R
San Pastore	8	R	18	MS-S	R-VS		7	O-MR	0	O	0	O	1	R
Bezostaia	60	MS-S	10	MS	R-MR	9	11	R-MS	0	O	0	O	1	R
Scout 66	90	S	5	R-MR	S	10	0	O-R	0	O	0	O	1	R
NB 67730	40	MR-S	20	MS	R-VS	8	20	O-MS	0	O	0	O	8	MS
Bankuti 1201	35	MR-MS	10	MS	R-S	33	6	O-MR	0	O	0	O	3	MR
Gage	40	MR-S	15	MR-MS	S-VS	11	5	O-MR	0	O	2	S	10	S
Atlas 66	35	R-MS	4	MR-MS	S		1	O-MR	0	O	7	S	75	S
Parker	55	MR-MS	15	MR-MS	S-VS	35	38	O-S	0	O	27	S	10	R-MR
Riley 67	55	MR-S	8	MR	S	4	8	R-MS	0	O	10	MS	8	MS-S
Winalta	40	MR	10	MR-MS	S-VS	6	20	O-S	0	O	11	MS	1	R
Blueboy	95	S	5	MR-MS	S-VS	8	5	O-MR	0	O	2	MS	8	S
Timwin	85	S	15	MS	S-VS	23	16	R-MS	30	MR	16	S	7	S
Triumph 64	90	S	10	MR	R-S	11	11	R-MS	30	MS	6	S	1	R
Gaines	45	MR-MS	5	MS	R-S	8	1	O-MR	0	O	0	O	75	MS-S
Shawnee	45	S	50	MS	VS	9	11	O-MS	80	MS	0	O	80	S
Purdue 4930A6-28-2-1	70	S	20	MS	S-VS	31	15	R-MS	80	MS	7	S	45	S
Stadler	90	S	45	MS	VS	23	15	R-MS	0	O	32	S	75	S
Arthur	95	S	30	MS	S-VS	31	20	O-MS	45	O-S	10	S	45	MS
Benhur	90	S	25	MR	S-VS	30	17	R-MS	30	MR	26	S	45	MS
Yorkstar	85	S	25	MS	S-VS	33	17	O-S	30	MR	6	S	89	S
Yung Kwang	85	S	65	S	S-VS	20	38	MR-S	60	MS	15	S	8	S
Lerma Rojo 64	5	R	4	MR-MS	R-S		2	O-MR	0	O	0	O	1	R
INIA 66	8	R	15	MR	R		1	O-R	0	O	0	O	1	R
Mean	46		15			18	10		13		5		20	

Table 49. (Continued)

Cultivar	Sulaimaniya, Iraq	Karaj, Iran		Mashad, Iran		Kabul, Afghanistan	Mazar-i-Sharif, Afghanistan	Shalimar, Kashmir India	Suwon, Korea	Mean severity (%)	
	Resp.	% Sev.	Resp.	% Sev.	Resp.	% Sev.	% Sev	% Sev.	% Sev.	13 loc.	12 loc.[a]
Cappelle Desprez	O-MR	0	O	0	S	0	0	0	35	4	3
Sturdy	O-O	0	O	10	S	0	0	0	21	4	4
Fertodi 293	R-MR	0	O	6	S	5	6	0	23	6	4
Felix	O-O	0	O	9	S	0	1	0	45	6	5
Odin	O-O	0	O	3	S	0	0	0	52	5	5
Heine VII	O-O	0	O	5	S	0	0	0	45	6	5
Lancer	O-VR	0	O	10	S	0	2	0	33	7	6
San Pastore	O-O	0	O	4	S	3	0	0	45		7
Bezostaia	O-VR	0	O	5	S	3	16	0	23	11	11
Scout 66	O-MR	0	O	10	S	0	0	0	22	11	11
NB67730	R-MS	0	O	8	S	3	8	0	30	11	11
Bankuti 1201	MR-MS	1	S	8	S	15	33	0	31	13	12
Gage	MS-VS	0	O	9	S	2	65	0	17	14	14
Atlas 66	MS-VS	0	O	1	S	3	56	0	10		16
Parker	O-MS	0	O	11	S	16	32	0	25	20	19
Riley 67	MS-VS	0	O	9	S	16	84	0	25	17	19
Winalta	O-MS	0	O	15	S	49	85	6	26	21	22
Blueboy	O-MS	1	MS	6	S	8	85	7	51	22	23
Timwin	VS-VS	1	MS	1	S	8	68	0	26	23	23
Triumph 64	VS-VS	0	O	9	S	15	79	0	32	23	24
Gaines	VS-VS	5	MS-S	1	S	55	99	0	32	25	27
Shawnee	MS-VS	0	O	5	S	0	36	0	50	28	30
Purdue 4930A6-28-2-1	VS-VS	0	O	4	S	0	93	0	20	30	30
Stadler	VS-VS	0	O	8	S	2	99	0	23	32	32
Arthur	VS-VS	0	O	4	S	20	76	0	36	32	32
Benhur	VS-VS	0	O	5	S	50	98	0	22	34	34
Yorkstar	VS-VS	3	S	10	S	45	93	0	35	36	37
Yung Kwang	VS-VS	3	S	13	S	35	99	14	21	37	38
Lerma Rojo 64	MR-MR	0	O	5	S	0	2	0			2[b]
INIA 66	O-S	0	O	4	S	0	0	0	..		3[b]
Mean		1		7		12	44	1	31	18	17

[a] Excluding Jokioinen, Finland.
[b] Mean of 11 locations for which Bezostaia averaged 10%

Table 50. Summary of "Leaf Rust" severity and response for cultivars grown in the "2nd International Winter Wheat Performance Nursery," 1970.

Cultivar	Stillwater, Okla. U S		Lincoln, Nebr. U S		El-Harrach, Algeria	Monsheim, W. Germany[a]	Weihenstephan, W. Germany	Vienna, Austria[a]	Zurich, Switzerland	
	% Sev.	Resp	% Sev.	Resp	% Sev.	% Sev	% Sev.	% Sev.	% Sev.	Resp.
Sturdy	1	S-X	1	R-MR	0	0	3	12	0	O
Purdue 4930A6-28-2-1	10	X	10	MR	29	0	0	0	0	O
Riley 67	0	R	0	R	9	0	1	0	0	O
NB 67730	16	S-X	2	MR	5	0	0	0	1	O-MR
Atlas 66	1	S	2	MR	2	20	0	0	0	O
Benhur	25	X	3	MR	0	0	0	12	0	O
Timwin	25	X	7	MR	2	20	3	0	0	O
Arthur	5	S-X	1	MR	0	0	0	0	0	O
Gage	1	R-X	21	MS	1	20	1	0	0	O
Stadler	3	S-X	5	MR	7	0	4	0	0	O
Parker	12	X	13	MR	0	0	4	0	0	O
Lancer	27	S-X	45	S	2	0	5	12	0	O
Bezostaia	4	MR-X	1	MR	2	30	1	0	0	O-R
Scout 66	22	S	57	S	0	0	0	12	0	O
Cappelle Desprez	18	S-X	6	R-MR	3	30	6	12	6	R-MR
Fertodi 293	20	S-X	52	S	1	0	0	0	0	O
Shawnee	37	S	62	S	15	10	4	0	0	O
Gaines	25	S-X	10	MR	9	0	4	12	0	O
Bankuti 1201	20	S	55	S	3	0	4	12	1	O-MR
Triumph 64	30	S	57	S	0	0	8	12	0	O
Blueboy	37	S-X	3	R-MR	7	20	0	0	0	O-R
Winalta	25	S	45	S	6	0	15	0	7	MR-MS
Odin	52	S	60	S	34	30	11	12	3	R
Yung Kwang	42	S	50	S	0	0	11	25	2	O-MR
San Pastore	40	S	30	MS-S	25	0	25	12	10	MS
Yorkstar	45	S	60	S	21	40	8	12	1	O-R
Heine VII	27	S	47	S	3	30	18	12	8	MR-MS
Felix	30	S	67	S	15	30	10	12	6	MR
Lerma Rojo 64	.				14	0	0	0	0	O
INIA 66		.			14	0	2	0	0	O
Mean	19		28		8	9	5	6	2	

Table 50. (Continued)

Cultivar	Milano, Italy		Rieti, Italy		Novi Sad, Yugoslavia		Zagreb, Yugoslavia[b]		Fundulea, Romania		Tolbukhin, Bulgaria		Eskisehir, Turkey	
	% Sev.	Resp.	% Sev.	Resp	% Sev.	Resp	% Sev.	Resp	% Sev.	Resp	% Sev	Resp	% Sev.	Resp
Sturdy	7	O-R	0	O	17	R-MR	1	R	15	MR-X	5	R	1	R
Purdue 4930A6-28-2-1	1	O-R	0	O	10	O-X	5	R	17	MR-X	5	R	1	R
Riley 67	40	MS-S	30	MR	0	O	5	R	0	O	1	R	1	MR-MS
NB 67730	2	O-R	0	O	31	R-X	5	R	32	MR-X	5	R	1	R
Atlas 66	5	R	0	O	42	O-X	25	MR	19	R-MR	1	R	1	R
Benhur	12	R	30	MR	10	O-S	1	R	8	R-MR	5	MR	1	R
Timwin	26	MR	0	O	24	R-X	0	R	15	R-S	5	R	1	R
Arthur	33	R-MR	27	MR VS	21	MS-X	25	MR	11	R-S	5	MR	1	R
Gage	25	O-MR	0	O	55	R	0	R	22	MS-X	5	R	1	R
Stadler	75	S	45	O-MS	5	O-S	5	R	8	R-MR	5	R	1	R
Parker	21	MR	80	MS	42	MS-S	2	MR	12	R-S	5	MR	1	MR
Lancer	20	MR	0	O	30	O-MS	40	MR	14	MS-X	5	R	0	MS
Bezostaia	0	O	0	O	30	MS-S	40	MR	45	S	65	MR-MS	1	R
Scout 66	7	R	60	MS	25	MS-X	40	S	27	S	25	MS	1	MR
Cappelle Desprez	15	R-MR	60	MS	70	S	25	R	30	MS-X	5	R	0	O
Fertodi 293	5	R	20	MR	80	S	65	S	67	S	80	MS	1	MR
Shawnee	6	R	0	O	84	S	5	R	90	S	65	MS	1	R
Gaines	35	R	0	O	74	S	65	S	87	S-S	65	MS	1	MS
Bankuti 1201	57	MS	80	MS	60	S	40	MS	47	MS-S	25	MR-MS	1	MR
Triumph 64	6	R	60	MR	75	S	80	S	72	S	40	MS	1	R
Bluebcy	2	O-R	0	O	99	S	80	S	90	S	65	MS	0	MR-MS
Winalta	60	MS-S	99	VS	84	S	99	S	50	S	65	MS	1	R
Odin	10	R	80	MS	99	S	65	S	75	S	65	MS	1	MS
Yung Kwang	60	R-MS	80	MS	94	S	99	S	87	S	65	MS	1	R
San Pastore	82	MS-S	99	VS	70	R-S	99	S	77	S	65	MR-MS	0	MR
Yorkstar	42	MR	99	VS	94	S	100	S	90	S	80	MS	1	R
Heine VII	79	S	99	VS	94	S	99	S	82	S	80	MS	1	MS
Felix	94	S	99	VS	99	S	80	S	57	O-S	40	MS	1	MR
Lerma Rojo 64	0	O	0	O	17	R-S	40	MR	20	MS-S	10	MR	1	MR
INIA 66	0	O	0	O	0	O	5	R	13	MR-X	1	R	1	R
Mean	28		38		51		41		42		31		1	

Table 50. (Continued)

Cultivar	Sulaimaniya, Iraq	Kabul, Afghanistan	Mazar-i-Sharif, Afghanistan	Shalimar, Kashmir India	Suwon, Korea		Sapporo Japan	Mean severity (%)	
	Resp	% Sev.	% Sev.	% Sev.	% Sev.	Resp	% Sev	19 loc.	18 loc.[c]
Sturdy	O-O	3	1	0	30	MS-S	10	5.6	5.4
Purdue 4930A6-28-2-1	O-MS	0	0	0	23	MS-S	0	5.8	6.2
Riley 67	O-VR	0	0	0	32	M-S	0	6.3	6 6
NB 67730	O-MR	0	0	0	30	MR-MS	0	6 8	7.2
Atlas 66	O-O	0	3	0	10	R-MR			7.3
Benhur	O-O	1	0	0	33	MS-S	0	7.4	7.8
Timwin	O-MS	0	0	0	25	MS-S	0	8.1	8.5
Arthur	O-O	1	1	0	31	MS-S	3	8.7	9.0
Gage	O-VS	0	0	0	26	MS-S	13	10.1	9.9
Lancer	O-VR	0	1	0	41	MS-S	0	12.7	13 4
Bezostaia	O-O	0	1	0	22	MS	3	12.9	13.4
Scout 66	O-VR	0	2	0	23	MR-MS	0	15.8	16.7
Cappelle Desprez	O-VR	0	1	0	40	MS-S			18.2
Fertodi 293	VR-VR	1	1	0	18	MS-S	0	21.6	22.8
Shawnee	O-O	0	0	0	36	S	0	21.8	23.1
Gaines	O-O	0	0	0	57	S	20	24 4	24.7
Bankuti 1201	VR-MR	0	3	0	45	S			25.2
Triumph 64	O-S	0	3	0	37	S	13	26 0	26.7
Blueboy	VR-MR	0	38	0	45	S	0	25.6	27.0
Winalta	VR-MR	0	4	0	28	M-S	28	32.4	32.7
Odin	VR-MR	1	10	0	37	S	7	34.3	35.8
Yung Kwang	O-VS	0	0	0	50	S	0	35.1	37.0
San Pastore	VR-MR	0	22	0	38	S			38.6
Yorkstar	O-VS	0	5	0	28	MS-S	7	38.6	40.3
Heine VII	VR-MS	0	13	13	30	S	13	39.4	40.8
Felix	MR-VS	8	52	0	67	S	0	40.4	42.6
Lerma Rojo 64	O-VR	2	0	0		.			6.9[d]
INIA 66	O-O	0	0	0	. .		35		4.4[e]
Mean		0.6	5	0.4	33		7	19.3	19.4

[a] Two reps only.
[b] One rep only.
[c] Excluding Sapporo, Japan.
[d] Mean of 15 locations for which bezostaia averaged 14.3%.
[e] Mean of 16 locations for which Bezostaia averaged 13.6%.

Table 51. Summary of "Stem Rust" severity and response for cultivars grown in the "2nd International Winter Wheat Performance Nursery," 1970.

Cultivar	Ft. Collins Colo. U.S.		Lincoln, Nebr. U.S.		Vienna, Austria[a]	Milano, Italy		Rieti, Italy		Novi Sad, Yugoslavia		Zagreb, Yugoslavia[b]		Marton-vasar, Hungary
	% Sev.	Resp.	% Sev.	Resp	% Sev.	% Sev.	Resp	% Sev.	Resp.	% Sev.	Resp.	% Sev.	Resp	% Sev.
Timwin	0	O-R	1	R-MR	0	5	R	0	O	0	O	1	R	0
Lancer	3	R-MR	1	MR	12	16	R	0	O	0	O	10	MR	0
Atlas 66	17	MR-MS	1	MR-S	0	9	R	10	S	0	O	10	MR	0
Purdue 4930A6-28-2-1	7	R S	1	R-MR	0	0	O	30	MR	0	O	10	MS	0
Arthur	1	R	0	R-MR	0	4	R	24	O-S	0	O	25	MR	0
Shawnee	40	MR-S	4	MR-S	0	0	O	0	O	0	O	1	R	20
NB 67730	25	MR-S	0	R-MS	0	20	MR	30	MR	0	O	10	MS	10
Scout 66	5	R-MS	1	R-MR	0	5	R	60	MS	0	O	25	MR	0
Bezostaia	87	S	31	S	0	0	O	10	S	0	O	10	MR	0
Winalta	77	S	7	S	0	36	MS	30	S	0	O	5	MR	20
Sturdy	36	MS-S	10	S	0	2	O-R	74	O-S	0	O	40	MS	0
Triumph 64	60	S	1	R-S	0	30	MS	80	S	0	O	5	MR	0
Gage	21	MS-S	1	MR-S	0	30	MR	99	S	0	O	25	MR	0
Yung Kwang	67	MS-S	9	MR-S	0	18	MR	80	S	0	O	2	R	20
Benhur	9	MR-S	1	R-MR	0	55	MS	90	S	3	O-S	25	MS	20
Fertodi 293	55	MS-S	27	S	0	16	R	99	S	0	O	25	MR	20
Cappelle Desprez	81	S	4	S	19	40	MS	99	S	0	O	25	S	20
Bankuti 1201	67	S	11	S	0	72	S	99	VS	0	O	10	S	40
San Pastore	45	S	5	MR-S	0	57	S	99	S	0	O	20	O	60
Blueboy	43	S	12	S	0	72	MR	60	S	0	O	60	S	50
Parker	93	S	7	MS-S	0	45	MS	99	S	0	O	80	S	0
Riley 67	7	R-S	5	S	12	70	MS-S	99	VS	27	S	90	S	0
Heine VII	96	S	9	S	50	47	MR	99	S	0	O	60	S	20
Stadler	65	MS-S	12	S	37	75	S	74	O-VS	55	O-S	80	S	20
Yorkstar	85	S	35	S	50	42	MR	99	S	0	O	95	S	40
Odin	99	S	15	S	37	77	S	99	VS	0	O	40	S	80
Gaines	96	S	18	S	37	85	MS	99	VS	0	O	80	S	20
Felix	99	S	52	S	37	94	S	99	S	0	O	25	MS	70
Lerma Rojo 64	6	MS-S			0	5	O-R	0	O	0	O	0	O	20
INIA 66	5	R-MR			.	8	O-S	0	O	0	O	0	O	
Mean	47		9		9	35		61		3		30		18

Table 51. (Continued)

Cultivar	Fundulea, Romania		Tolbukhin, Bulgaria		Sulaimaniya, Iraq	Kabul, Afghanistan	Shalimar, Kashmir India	Suwon, Korea		Sapporo, Japan	Mean severity (%)	
	% Sev.	Resp.	% Sev.	Resp	Resp.	% Sev.	% Sev	% Sev.	Resp	% Sev.	14 locations	13 locations[c]
Timwin	0	O	0	O	O-VR	0	0	21	MS-S	0	2.0	2.2
Lancer	0	O	0	O	O-O	0	0	12	R-MR	0	3.9	4.2
Atlas 66	0	O	0	O	O-VS	0	0	7	R-MR			4.2
Purdue 4930A6-28-2-1	0	O	0	O	O-VS	0	0	17	MR-MS	15	5.7	5.0
Arthur	0	O	0	O	O-O	0	0	25	MS-S	1	5.7	6.1
Shawnee	0	O	0	O	O-MR	0	0	28	MS-S	0	6 6	7.2
NB 67730	0	O	0	O	O-MR	0	0	7	R-MR	0	7.3	7.8
Scout 66	0	O	0	O	O-O	0	0	11	MR	0	7.6	8.2
Bezostaia	0	O	0	O	O-O	0	0	15	MR-MS	0	10.9	11.8
Winalta	0	O	0	O	O-O	0	0	8	R-MS	20	14.5	14.1
Sturdy	2	O-S	0	O	O-O	10	0	16	MS-S	0	13.6	14.6
Triumph 64	0	O	0	O	O-O	0	0	23	MS-S	3	14.4	15.3
Gage	0	O	0	O	O-O	0	0	31	MR-S	0	14.8	15.9
Yung Kwang	0	O	0	O	O-MS	2	0	11	R-MS	0	14.9	16.1
Benhur	0	O	0	O	O-MS	5	0	21	MS	20	17.8	17.6
Fertodi 293	0	O	0	O	O-O	2	1	26	MS-S	0	19.4	20.8
Cappelle Desprez	8	O-S	0	O	O-O	2	6	8	R-MR			24.0
Bankuti 1201	0	O	0	O	O-O	0	14	11	MR			24.9
San Pastore	0	O	0	O	O-VR	6	1	46	S			26.1
Blueboy	0	O	0	O	O-VR	6	0	45	MS-S	13	25.8	26 8
Parker	0	O	0	O	O-O	8	0	18	MR-S	0	25.0	26.9
Riley 67	13	S	0	O	O-VR	15	8	15	MR-MS	0	25.8	27.8
Heine VII	0	O	0	O	O-MS	30	0	13	MR-S	33	32.6	32.6
Stadler	37	S	1	R	O-VS	21	16	12	MR	45	39.3	38 8
Yorkstar	0	O	25	MS	MR-VS	36	8	11	MR	60	41.9	40.5
Odin	5	S	0	O	O-O	10	56	30	S	0	39.1	42.2
Gaines	11	MS-S	40	S	O-VS	8	11	53	S	8	40.4	42.9
Felix	0	O	0	O	O-MS	12	58	32	S	7	40.4	42.9
Lerma Rojo 64	0	O	0	O	O-O	7	0					2.9[d]
INIA 66	0	O	0	O	O-O	0	0			15		2.2[e]
Mean	2		2			6	6	20		10	19.6	19.1

[a] Two reps only.
[b] One rep only.
[c] Excluding Sapporo, Japan.
[d] Mean of 11 locations for which Bezostaia averaged 9.7%.
[e] Mean of 10 locations for which Bezostaia averaged 10.7%.

Table 52. Summary of "Mildew" severity and response for cultivars grown in the "2nd International Winter Wheat Performance Nursery," 1970.

Cultivar	Cambridge, England	Wageningen, Netherlands	Svalof, Sweden	Monsheim, W. Germany[a]	Weihenstephan, W. Germany	Vienna, Austria	Zurich, Switzerland	
	% Sev.	Resp.	% Sev.	% Sev.	% Sev.	% Sev.	% Sev.	Resp.
Arthur	0	R-VS	2	15	6	13	5	R-MR
Odin	5	R-S	15	25	9	28	10	MR-MS
Lancer	8	S	23	25	6	16	8	MR
Scout 66	10	S	28	25	6	20	20	MR-MS
Gage	5	S-VS	20	25	19	25	21	MR-S
Purdue 4930A6-28-2-1	25	S	30	35	3	12	30	MS-S
Fertodi 293	10	S	35	25	22	22	12	MR-MS
Yorkstar	15	S	40	35	12	44	15	MS
Atlas 66	15	S	28	25	9	22	13	R-MS
Cappelle Desprez	25	S-VS	53	50	12	19	11	R-MS
NB 67730	20	S	30	25	9	59	12	MR
Benhur	20	S	23	35	16	28	26	MR-S
Blueboy	5	S-VS	40	35	28	40	22	MS
Timwin	15	S	47	25	9	19	32	MS-S
Felix	25	VS	58	65	34	34	30	MS-S
Heine VII	40	S	55	85	31	40	19	R-MS
Bezostaia	20	R-S	40	65	31	41	17	MR-MS
Bankuti 1201	30	S	38	65	22	59	30	MR-S
Riley 67	10	S-VS	35	65	28	31	20	MS-S
Gaines	25	VS	75	95	31	43	25	MR-S
Shawnee	25	VS	40	35	44	53	35	MS-S
Stadler	35	S-VS	40	50	37	62	40	MR-S
San Pastore	30	VS	90	85	19	43	55	S
Parker	8	S-VS	65	75	47	44	25	MS
Winalta	20	VS	55	65	40	53	20	MS-S
Yung Kwang	30	S-VS	89	85	37	53	42	MS-S
Triumph 64	35	VS	80	85	40	56	52	S
Sturdy	50	VS	90	95	31	56	70	MS-S
Lerma Rojo 64	35	S-VS	.	95	37	72	67	MS-S
INIA 66	35	VS	.	95	19		45	MR-S
Mean	21		45	51	23	38	28	

Table 52. (Continued)

Cultivar	Milano, Italy	Rieti, Italy	Novi Sad, Yugoslavia	Zagreb, Yugoslavia[b]	Martonvasar, Hungary	Tolbukhin Bulgaria	Mean severity (%)
	% Sev.	% Sev.	% Sev.	% Sev.	% Sev.	% Sev.	12 locations
Arthur	0	0	0	40	10	5	8.0
Odin	0	0	20	10	50	40	17.7
Lancer	0	0	20	40	60	30	19.7
Scout 66	7	0	40	10	50	45	21.8
Gage	5	0	30	40	70	30	24.2
Purdue 4930A6-28-2-1	2	0	30	40	60	30	24.8
Fertodi 293	7	40	20	25	70	25	26.1
Yorkstar	18	20	20	25	60	30	27.8
Atlas 66	7	0	40	65	70	50	28.7
Cappelle Desprez	5	50	20	40	60	15	29.0
NB 67730	7	75	10	40	70	40	33.1
Benhur	6	20	50	65	90	40	34.9
Blueboy	30	50	30	65	60	20	35.4
Timwin	12	0	50	99	60	65	36.1
Felix	50	0	50	65	70	40	43.4
Heine VII	17	0	30	65	90	65	44.8
Bezostaia	18	20	50	99	80	60	45.1
Bankuti 1201	32	50	20	65	80	65	46.3
Riley 67	30	40	50	99	100	65	47.8
Gaines	77	20	30	65	70	40	49.7
Shawnee	42	40	50	65	90	80	49.9
Stadler	57	15	50	99	90	65	53.3
San Pastore	42	0	50	99	80	65	54.8
Parker	52	75	50	99	90	30	55.0
Winalta	55	75	80	80	80	70	57.8
Yung Kwang	67	75	30	65	100	80	62.8
Triumph 64	52	40	60	99	90	80	64.1
Sturdy	57	74	70	99	100	80	72.7
Lerma Rojo 64	60	75	50	99	100	80	70.0[c]
INIA 66	0	50	90	99	..	80	57.0[d]
Mean	27	30	40	63	72	49	41.4

[a] Two reps only.
[b] One rep only.
[c] Mean of 11 locations for which Bezostaia averaged 45.5%.
[d] Mean of 9 locations for which Bezostaia averaged 42.2%.

2-YEAR MEANS
INDIVIDUAL SITES-SUMMARIES

Table 53. Two-year mean yields of 30 cultivars grown in the "1st and 2nd International Winter Wheat Performance Nurseries" at Davis, Calif., U.S. in 1969 and 1970.

Cultivar	Yield q/ha
INIA 66	51.6
Lerma Rojo 64	49.5
Sturdy	39.6
Triumph 64	38.5
Bezostaia	37.4
San Pastore	32.3
Scout 66	30.8
Timwin	30.3
Lancer	29.4
Heine VII	28.3
Yung Kwang	28.0
Benhur	27.2
Parker	27.2
Gaines	27.0
Fertodi 293	25.7
Arthur	24.8
Blueboy	23.6
Gage	23.6
Shawnee	23.5
Stadler	22.6
Riley 67	21.9
NB 67730	21.3
Winalta	21.2
Yorkstar	20.9
Atlas 66	20.7
Cappelle Desprez	19.0
Purdue 4930A6-28-2-1	18.8
Bankuti 1201	18.1
Felix	16.4
Odin	7.1
Mean	26.9
Coefficient of variation (%)	17.3
Standard error	0.30

Table 54. Two-year mean yields of 28 cultivars grown in the "1st and 2nd International Winter Wheat Performance Nurseries" at Stillwater, Okla., U.S. in 1969 and 1970.

Cultivar	Yield q/ha
Arthur	43.2
Bezostaia	36.8
Scout 66	36.2
Triumph 64	35.4
Parker	34.8
Benhur	34.7
Riley 67	32.9
Gage	32.6
Stadler	31.3
Sturdy	31.2
Purdue 4930A6-28-2-1	31.1
Timwin	29.8
San Pastore	29.8
NB 67730	29.2
Fertodi 293	29.2
Shawnee	28.5
Blueboy	28.0
Yung Kwang	28.0
Lancer	27.4
Winalta	26.6
Yorkstar	25.9
Bankuti 1201	24.8
Gaines	22.0
Heine VII	20.4
Atlas 66	19.8
Cappelle Desprez	15.9
Felix	10.5
Odin	6.7
Mean	27.9
Coefficient of variation (%)	13.6
Standard error	0.25

Table 55. Two-year means for yield and lodging of 28 cultivars grown in the "1st and 2nd International Winter Wheat Performance Nurseries" at Rowan Co., N.C., U.S. in 1969 and 1970.

Cultivar	Yield q/ha	Lodging %
Arthur	46.0	31.3
San Pastore	43.5	23.8
Blueboy	43.0	3.8
Stadler	41.6	39.4
Bezostaia	41.6	6.3
Yorkstar	41.4	37.5
Riley 67	39.5	38.8
Benhur	38.7	18.8
Gaines	38.5	2.5
Heine VII	37.4	10.0
Parker	37.2	23.1
Shawnee	37.1	28.8
Gage	36.6	41.9
Timwin	36.0	22.5
Purdue 4930A6-28-2-1	35.7	32.5
Sturdy	35.5	0.0
Yung Kwang	35.4	34.4
Scout 66	35.1	58.6
Triumph 64	32.8	49.9
Fertodi 299	32.4	38.8
Atlas 66	31.8	53.1
Bankuti 1201	31.1	50.0
Winalta	30.3	44.4
NB 67730	30.0	71.9
Lancer	29.6	57.3
Felix	25.9	1.3
Cappelle Desprez	25.4	12.5
Odin	24.2	11.3
Mean	35.5	30.1
Coefficient of variation (%)	12.2	60.2
Standard error	0.29	1.21

Table 56. Two-year means for agronomic and grain quality traits of 30 cultivars grown in the "1st and 2nd International Winter Wheat Performance Nurseries" at Wageningen, Netherlands in 1969 and 1970.

Cultivar	Yield q/ha	Test weight kg/hl	Protein %	Lysine % of protein	Date of Flowering (Days from Jan 1)	Date of Ripening (Days from Jan 1)	Plant height cm.	Lodging %	Shattering %	Winter survival %
Heine VII	46.8	81.1	13.2	2.99	165	215	108	0.0	8.8	90.4
Yorkstar	46.1	79.0	12.2	3.19	162	211	103	23.8	38.1	82.5
Bezostaia	44.2	85.2	13.4	2.96	161	212	100	3.1	8.8	89.4
Cappelle Desprez	42.6	79.5	14.7	2.86	165	214	103	1.3	16.3	86.3
Gaines	41.7	78.7	12.6	3.10	163	212	78	0.6	15.0	86.9
Blueboy	41.0	78.6	13.1	3.05	162	214	96	10.6	28.8	69.4
Felix	40.3	80.4	12.8	3.08	166	217	100	0.0	13.8	84.1
Riley 67	40.2	84.0	14.3	2.92	161	196	115	43.8	22.5	81.9
Fertodi 293	40.2	83.0	15.6	2.85	161	209	121	40.6	9.4	85.6
San Pastore	40.1	81.7	14.6	2.91	158	208	101	4.4	30.0	82.5
Atlas 66	39.5	84.3	16.4	2.78	161	209	127	53.8	18.8	89.4
Sturdy	38.6	85.1	14.4	2.86	157	205	91	0.6	6.3	86.9
Stadler	38.6	85.8	12.9	3.06	161	196	117	20.0	10.0	83.1
Yung Kwang	37.9	83.2	14.6	2.89	158	204	117	25.6	13.8	85.0
Benhur	37.7	83.3	15.3	2.84	157	206	107	5.0	8.1	85.0
Timwin	37.0	80.3	14.1	3.01	162	195	95	26.3	23.8	78.8
Arthur	36.8	81.6	14.8	2.92	160	207	110	23.8	31.3	84.4
Bankuti 1201	36.6	83.2	15.3	2.86	161	208	132	67.5	14.4	85.6
Gage	36.3	83.1	15.1	2.87	161	209	116	31.9	10.6	86.9
Odin	36.2	79.2	13.8	2.98	167	216	129	0.6	8.8	90.0
Lerma Rojo 64	36.1	84.7	14.9	2.89	156	203	103	24.4	10.0	58.8
Lancer	35.7	85.2	14.9	2.87	162	208	118	50.0	15.6	83.1
Parker	33.8	83.2	15.7	2.88	160	207	106	3.1	15.6	87.5
Scout 66	32.7	82.6	16.4	2.79	160	207	117	68.8	13.1	85.6
Shawnee	32.6	84.8	13.2	2.94	162	209	117	5.6	18.1	77.5
Winalta	32.4	84.9	14.2	2.88	162	209	121	53.1	26.3	82.5
NB 67730	31.2	82.9	16.7	2.84	159	206	129	56.9	11.9	85.0
Purdue 4930A6-28-2-1	29.4	83.7	18.3	2.71	159	206	122	9.4	38.8	86.3
Triumph 64	27.9	83.9	17.1	2.80	157	206	115	46.3	16.9	87.5
INIA 66	20.8	82.5	15.2	2.83	153	203	87	0.6	17.5	46.9
Mean	37.0	82.6	14.7	2.91	161	207	110	23.4	17.4	82.5
Coefficient of variation (%)	6.9	1.5	2.8	1.88	0.6	4.6	3.0	69.3	57.0	6.0
Standard error	0.16	0.08	0.03	0.004	0.06	0.62	0.21	1.05	0.64	0.32

Table 57. Two-year means for agronomic and grain quality traits of 28 cultivars grown in the "1st and 2nd International Winter Wheat Performance Nurseries" at Svalof, Sweden in 1969 and 1970.

Cultivar	Yield q/ha	Test weight kg/hl	Protein %	Lysine % of protein	Date of Flowering (Days from Jan 1)	Date of Ripening (Days from Jan 1)	Plant height cm.	Lodging %	Shattering %	Winter survival %
Odin	70.2	82.2	13.9	2.92	175	232	105	8.1	0.4	95.3
Heine VII	65.9	79.4	13.4	2.83	173	227	86	19.4	0.0	86.8
Bezostaia	65.5	82.9	14.3	2.82	170	225	80	6.3	0.0	96.0
Stadler	64.9	83.9	14.9	2.83	169	222	97	26.9	0.9	93.8
Felix	61.5	79.8	13.6	2.93	175	229	82	0.0	0.0	86.6
Timwin	59.4	81.1	15.5	2.88	170	222	77	25.6	1.9	97.1
Fertodi 293	59.3	80.5	16.6	2.72	169	220	92	23.8	0.0	98.9
Riley 67	56.8	81 8	16.7	2.76	169	223	86	27.5	1.3	93.8
Lancer	56.6	82.6	15.9	2.70	170	222	89	36.3	0.4	96.5
Parker	56.2	82.7	16.5	2.72	167	221	81	5.0	0.0	93.6
Yorkstar	55.5	79.2	15.5	2.82	170	224	88	26.1	2.7	92.4
Blueboy	54.9	80.4	16.5	2.78	171	232	83	6.9	1.7	88.8
Scout 66	54.2	80.0	17.4	2.70	167	218	86	41.3	0.0	98.4
Sturdy	53.9	80.6	15.3	2.74	167	219	71	0.0	0.0	93.0
Cappelle Desprez	53.9	78.3	14.8	2.78	172	225	78	5.0	0.0	66.8
Gaines	52.9	79.5	13.9	2.92	170	226	66	3.8	0.0	94.9
Arthur	50.7	79.2	17.2	2.74	168	222	83	16.3	2.3	95.5
Gage	49.7	79.3	17.4	2.69	168	221	85	15.0	0.0	93.6
Yung Kwang	47.7	79.5	17.8	2.73	166	217	81	33.8	0.0	92.4
Shawnee	47.6	81.8	16.2	2.68	169	224	91	11.3	0.0	96.5
Triumph 64	47.3	80.5	16.4	2.74	166	217	85	28.8	0.0	97.3
Winalta	46.3	80.5	16.5	2.73	170	223	91	28.8	0.0	97.1
NB 67730	45.9	78.4	19.5	2.62	166	217	97	35.0	0.0	98.4
Atlas 66	45.1	81.0	18.6	2.63	170	229	88	17.5	1.0	64.4
Bankuti 1201	42.8	79.0	18.1	2.74	169	222	98	43.8	0.0	96.4
Purdue 4930A6-28-2-1	42.3	79.5	20.5	2.53	167	220	90	23.8	2.8	95.5
San Pastore[a]	.	..	13.6	3.00	167	216	70	2.5	2.7	67.5
Benhur[a]		..	17.4	2.63	166	220	87	6.3	0.0	97.1
Mean	54.1	80.5	16.2	2.76	169	222	85	18.7	0.6	91.6
Coefficient of variation (%)	9.6	0.7	3.2	3.2	0.2	0.2	3.4	40.5	133.4	5.9
Standard error	0.36	0.37	0.03	0.006	0.03	0.03	0.20	0.51	0.06	0.36

[a] Damaged by birds in 1970.

Table 58. Two-year means for agronomic and grain quality traits of 30 cultivars grown in the "1st and 2nd International Winter Wheat Performance Nurseries" at Milano, Italy in 1969 and 1970.

Cultivar	Yield q/ha	Test weight kg/hl	Protein %	Lysine % of protein	Date of Flowering (Days from Jan. 1)	Date of Ripening (Days from Jan. 1)	Plant height cm.	Lodging %	Winter survival %
Timwin	58.6	77.8	12.6	3.01	144	189	83	26.3	95.8
Yung Kwang	57.9	78.8	13.4	2.86	141	189	108	43.8	95.5
Blueboy	57.6	74.0	12.0	3.06	146	190	92	0.0	94.6
Arthur	56.4	80.5	13.1	2.97	141	187	106	48.8	92.6
San Pastore	56.3	78.2	11.5	3.08	138	182	96	3.8	92.9
Yorkstar	54.1	72.7	11.0	3.18	146	189	103	23.1	95.0
Shawnee	53.7	81.6	12.3	2.92	144	188	117	50.6	93.1
Parker	53.1	82.8	13.0	2.90	141	187	100	27.8	95.6
Lerma Rojo 64	53.1	80.4	14.0	2.78	136	180	88	23.8	91.9
Fertodi 293	53.0	79.7	13.0	2.90	143	186	120	50.0	94.8
Stadler	52.9	79.5	11.4	3.10	143	187	116	[illegible]	96.9
Bezostaia	51.5	81.8	12.7	2.80	141	188	93	14.0	93.5
Sturdy	51.1	79.6	13.9	2.82	140	186	74	6.5	95.5
Heine VII	50.9	73.5	12.4	2.94	151	191	103	5.0	93.8
Benhur	49.9	80.8	13.9	2.79	139	185	108	27.5	92.5
Triumph 64	48.7	81.0	14.3	2.76	140	183	113	61.3	97.0
Gage	46.9	80.1	13.3	2.84	144	186	113	46.9	95.9
Purdue 4930A6-28-2-1	45.8	81.7	15.5	2.77	142	186	123	38.8	94.3
Scout 66	45.5	80.4	13.0	2.89	142	187	113	67.5	95.4
Bankuti 1201	45.0	81.4	14.1	2.78	145	189	129	68.8	94.9
Cappelle Desprez	44.5	73.2	14.3	2.79	152	192	95	13.1	96.0
Atlas 66	44.2	77.7	16.8	2.66	144	190	127	48.8	94.1
Riley 67	44.2	77.4	12.3	3.02	143	184	106	39.4	97.1
Gaines	42.8	71.2	11.0	3.20	147	187	73	0.6	96.8
Felix	41.3	71.4	11.7	3.00	152	190	92	0.0	96.1
INIA 66	41.0	79.3	14.8	2.70	134	179	73	6.3	92.3
Lancer	39.5	78.9	13.5	2.87	145	188	116	57.5	96.0
Winalta	38.8	81.3	13.0	2.92	147	189	115	55.0	95.5
Odin	35.5	72.3	12.8	3.01	155	194	121	18.8	95.6
NB 67730	35.2	80.0	15.3	2.76	142	186	121	47.5	95.6
Mean	48.3	78.3	13.2	2.90	144	187	105	31.9	94.9
Coefficient of variation (%)	9.2	1.3	4.8	2.7	0.3	0.3	3.8	59.8	2.7
Standard error	0.29	0.07	0.04	0.005	0.02	0.03	0.26	1.23	0.17

Table 59. Two-year means for agronomic and grain quality traits of 30 cultivars grown in the "1st and 2nd International Winter Wheat Performance Nurseries" at Rieti, Italy in 1969 and 1970.

Cultivar	Yield q/ha	Test weight kg/hl	Protein %	Lysine % of protein	Date of Flowering (Days from Jan. 1)	Date of Ripening (Days from Jan. 1)	Plant height cm.	Lodging %
Bezostaia	55.7	82.8	12.9	2.79	143	191	108	6.3
Timwin	52.6	78.3	13.0	2.96	144	190	92	6.3
Blueboy	52.5	73.7	12.6	2.94	148	199	110	0.0
Arthur	51.1	80.9	13.4	2.82	142	190	115	25.0
Sturdy	50.6	79.9	13.7	2.85	138	187	87	0.0
Benhur	50.6	81.4	13.7	2.72	139	188	114	12.5
Yung Kwang	50.3	75.4	13.1	2.85	143	190	114	18.8
Lerma Rojo 64	50.1	80.4	14.0	2.76	133	183	90	0.0
Shawnee	49.9	82.4	12.5	2.87	146	189	126	0.0
Fertodi 293	49.4	77.9	14.0	2.79	148	192	131	37.5
Scout 66	46.8	81.1	13.8	2.81	143	189	121	62.3
Atlas 66	46.7	80.4	17.1	2.58	147	195	131	25.0
Parker	45.6	82.1	12.7	2.96	142	189	113	24.8
Purdue 4930A6-28-2-1	45.0	81.6	16.3	2.68	144	189	133	16.8
Gage	44.4	80.4	13.8	2.84	146	191	122	37.5
Triumph 64	43.6	81.3	14.7	2.76	136	187	118	43.5
Lancer	42.1	81.1	13.2	2.84	149	192	129	50.0
San Pastore	41.8	76.5	11.9	2.95	136	182	102	0.0
INIA 66	41.0	79.9	14.6	2.66	129	183	83	0.0
NB 67730	40.5	80.4	16.2	2.67	143	190	133	62.3
Winalta	39.4	80.8	12.5	2.86	151	191	129	31.3
Bankuti 1201	37.5	78.7	14.0	2.76	147	190	135	62.5
Riley 67	33.0	71.9	11.1	3.18	143	186	121	25.0
Cappelle Desprez	31.8	67.8	14.0	2.75	157	196	97	0.0
Stadler	29.8	70.1	10.9	3.26	142	184	128	6.3
Heine VII	29.7	69.0	12.4	2.93	155	196	114	0.0
Yorkstar	25.0	66.3	9.8	3.37	151	188	116	0.0
Gaines	23.0	65.0	12.1	3.17	151	187	84	0.0
Felix	18.3	65.2	13.8	2.91	162	195	106	0.0
Odin	15.5	65.0	14.2	2.88	163	195	133	0.0
Mean	41.1	76.6	13.4	2.87	145	190	115	18.5
Coefficient of variation (%)	12.8	1.8	4.6	2.9	1.5	0.6	3.8	..
Standard error	0.34	0.09	0.04	0.005	0.14	0.07	0.28	.

Table 60. Two-year means for agronomic and grain quality traits of 29 cultivars grown in the "1st and 2nd International Winter Wheat Performance Nurseries" at Novi Sad, Yugoslavia in 1969 and 1970.

Cultivar	Yield q/ha	Test weight kg/hl	Protein %	Lysine % of protein	Date of flowering days from Jan. 1	Plant height cm	Lodging %
Arthur	59.9	77.1	15.6	2.81	144	96	59.6
Benhur	54.9	77.6	16.2	2.72	142	98	46.0
Parker	53.3	79.1	14.7	2.95	146	97	54.8
Yung Kwang	52.4	71.9	14.0	2.89	144	101	78.4
Gage	52.3	75.3	15.6	2.87	149	110	96.6
Timwin	52.2	73.2	15.8	2.91	148	85	78.1
Scout 66	52.0	75.9	15.3	2.83	146	103	86.9
Bezostaia	52.0	76.2	15.0	2.84	145	91	49.9
Atlas 66	52.0	73.8	18.5	2.69	150	109	84.4
Stadler	50.6	77.2	14.2	2.88	145	110	80.8
NB 67730	50.5	75.6	17.3	2.70	145	114	96.6
Riley 67	49.8	74.0	15.2	2.93	145	108	96.6
Purdue 4930A6-28-2-1	49.1	77.6	19.1	2.67	144	111	61.1
Bankuti 1201	48.8	76.1	16.1	2.78	147	116	99.0
San Pastore	48.7	72.1	14.4	2.87	143	90	48.6
Lerma Rojo 64	48.4	74.5	17.1	2.66	138	89	78.3
Sturdy	47.2	75.9	14.8	2.80	144	78	7.5
Shawnee	47.0	77.3	14.5	2.78	149	113	74.9
Triumph 64	46.4	77.4	15.4	2.81	142	99	86.9
Fertodi 293	45.9	72.2	15.9	2.82	149	114	99.0
Blueboy	42.0	67.7	14.9	2.91	151	98	37.4
Lancer	41.9	74.8	15.5	2.82	150	108	95.5
Gaines	36.2	64.2	15.2	2.98	153	78	15.1
Yorkstar	36.0	64.7	14.8	3.01	152	103	86.8
Winalta	34.2	74.1	14.4	2.88	151	111	96.6
Cappelle Desprez	33.1	65.8	18.0	2.78	156	87	38.8
Heine VII	32.6	63.1	16.7	2.77	154	96	35.0
Odin	26.0	63.1	16.5	2.90	159	111	7.5
Felix	22.8	60.6	16.3	2.89	156	92	5.0
Mean	45.5	72.7	15.8	2.83	148	101	64.9
Coefficient of variation (%)	9.6	1.5	1.9	2.0	0.01	5.0	20.8
Standard error	0.29	0.07	0.02	0.004	0.00	0.33	0.89

Table 61. Two-year means for agronomic and grain quality traits of 28 cultivars grown in the "1st and 2nd International Winter Wheat Performance Nurseries" at Fundulea, Romania in 1969 and 1970.

Cultivar	Yield q/ha	Test weight kg/hl	Protein %	Lysine % of protein	Date of Flowering (Days from Jan 1)	Date of Ripening (Days from Jan 1)	Plant height cm	Lodging %	Shattering %	Winter survival %
Scout 66	36.6	81.3	14.8	2.77	141	181	100	37.5	0.2	49.5
Lancer	33.7	81.9	14.4	2.85	145	184	105	30.6	0.3	49.5
Timwin	33.2	78.0	15.4	2.88	144	181	85	28.1	1.1	48.4
Fertodi 293	33.0	78.9	14.6	2.85	144	181	110	30.6	0.2	48.4
Gage	32.8	79.9	15.1	2.81	142	182	98	12.5	1.6	49.5
Stadler	32.2	81.3	14.8	2.91	142	180	103	8.1	0.4	49.5
Arthur	31.6	79.9	15.2	2.82	140	180	88	8.1	1.2	49.5
Riley 67	30.9	79.0	16.2	2.82	142	180	100	17.5	1.8	49.5
Parker	30.8	81.6	15.4	2.77	141	182	90	12.5	0.5	49.5
Shawnee	30.8	81.0	13.8	2.88	143	183	106	5.6	0.3	49.5
Triumph 64	30.4	81.4	15.8	2.73	138	178	92	36.9	0.5	49.5
Yung Kwang	30.2	77.1	15.5	2.83	140	180	91	8.1	0.4	49.5
Benhur	30.1	80.4	16.1	2.72	138	180	92	2.5	0.8	49.5
NB 67730	29.7	80.1	16.9	2.72	140	182	104	40.6	0.3	49.5
Purdue 4930A6-28-2-1	29.6	79.9	17.9	2.72	142	181	105	4.4	1.2	49.5
Yorkstar	29.2	72.9	12.1	3.20	148	184	102	10.6	0.7	49.5
Bankuti 1201	29.0	80.7	15.7	2.72	145	182	112	32.5	0.2	49.5
Winalta	27.5	81.3	14.1	2.84	148	182	112	30.0	0.2	49.5
San Pastore	27.3	76.8	14.3	2.87	139	179	80	0.0	3.0	49.5
Sturdy	26.7	79.1	16.3	2.77	140	182	72	0.0	.0.5	49.5
Bezostaia	26.1	79.3	14.5	2.82	142	184	83	2.5	0.4	43.1
Atlas 66	25.0	73.8	19.6	2.59	147	188	99	23.1	0.4	48.4
Blueboy	20.7	71.4	14.9	2.82	149	184	90	0.0	0.3	49.5
Heine VII	18.2	66.0	17.0	2.76	139	193	89	0.6	0.1	40.0
Gaines	16.7	68.7	15.3	2.87	148	185	69	0.0	0.2	49.5
Cappelle Desprez	15.2	62.7	18.9	2.72	158	193	83	0.0	0.2	49.5
Felix	15.1	64.1	16.1	2.89	156	194	84	0.0	0.2	49.5
Odin	8.9	59.4	16.8	2.83	143	194	103	0.0	0.3	49.5
Mean	27.2	76.3	15.6	2.81	144	183	94	13.7	0.6	48.8
Coefficient of variation (%)	16.1	1.3	3.1	3.01	0.2	0.04	5.7	91.6	148.2	3.3
Standard error	0.29	0.07	0.03	0.006	0.02	0.01	0.36	0.84	0.06	0.11

Table 62. Two-year means for agronomic and grain quality traits of 30 cultivars grown in the "1st and 2nd International Winter Wheat Performance Nurseries" at Ankara, Turkey in 1969 and 1970.

Cultivar	Yield q/ha	Protein %	Lysine % of protein	Winter Survival %
Bezostaia	42.6	13.4	2.91	61.9
Scout 66	41.1	13.3	2.97	61.9
Timwin	40.0	13.9	2.94	61.9
Yorkstar	37.1	11.7	3.24	61.9
Shawnee	35.9	13.4	2.88	61.9
Fertodi 293	35.0	15.5	2.80	61.9
Lancer	34.6	12.3	3.00	61.9
Bankuti 1201	34.2	15.2	2.86	61.9
Gage	33.8	13.7	3.04	61.9
San Pastore	33.7	13.5	2.89	61.9
Triumph 64	33.0	14.5	2.81	61.9
NB 67730	33.0	15.5	2.80	61.9
Arthur	32.3	13.5	2.92	61.9
Riley 67	32.2	14.0	2.94	61.9
Parker	32.1	14.4	2.79	61.9
Sturdy	31.7	15.2	2.80	61.9
Benhur	30.8	13.4	2.83	61.9
Yung Kwang	30.7	14.4	2.84	61.9
Stadler	30.6	12.8	3.08	61.9
Lerma Rojo 64	28.9	15.3	2.79	40.5
Blueboy	27.2	13.5	2.95	61.9
Atlas 66	25.9	18.3	2.67	61.9
Heine VII	25.1	14.4	2.80	61.9
Purdue 4930A6-28-2-1	25.1	15.8	2.76	61.9
Felix	24.8	14.5	2.83	61.9
Winalta	23.6	13.9	2.86	61.9
Cappelle Desprez	23.0	16.1	2.73	61.9
Gaines	21.0	11.6	3.19	61.9
Odin	19.2	14.8	2.91	61.9
INIA 66	11.6	14.5	2.84	11.9
Mean	30.3	14.2	2.89	59.5
Coefficient of variation (%)	13.3	5.4	2.98	13.5
Standard error	0.26	0.05	0.006	0.52

Table 63. Two-year means for agronomic and grain quality traits of 30 cultivars grown in the "1st and 2nd International Winter Wheat Performance Nurseries" at Eskisehir, Turkey in 1969 and 1970.

Cultivar	Yield q/ha	Protein %	Lysine % of protein	Date of Flowering (Days from Jan. 1)	Date of Ripening (Days from Jan. 1)	Plant height cm.	Lodging %
Parker	36.7	13.7	2.88	145	189	85	0.4
Heine VII	36.6	14.7	2.78	155	198	89	0.0
San Pastore	36.2	14.3	2.85	138	184	87	0.0
Bezostaia	34.7	13.1	2.99	146	191	89	0.0
Lancer	34.3	12.5	2.92	147	189	96	4.3
Lerma Rojo 64	33.9	15.3	2.78	141	184	75	1.0
Bankuti 1201	33.8	14.9	2.86	151	194	99	6.9
Cappelle Desprez	33.5	15.1	2.76	158	199	88	0.0
Blueboy	33.5	15.8	2.90	151	198	79	2.8
Fertodi 293	33.1	13.6	2.85	150	190	100	2.4
Scout 66	32.6	12.9	2.96	145	188	99	4.4
Sturdy	31.6	14.8	2.73	148	188	68	0.0
Winalta	31.4	12.7	2.95	152	192	97	8.1
Odin	30.3	14.8	2.96	167	196	88	2.0
Felix	29.4	15.5	2.82	161	192	88	0.0
Timwin	29.0	13.9	2.97	150	192	71	0.6
Shawnee	28.4	13.3	2.91	148	190	97	4.8
Triumph 64	28.4	14.2	2.79	143	186	85	5.0
Arthur	27.9	12.6	3.05	144	187	87	1.6
NB 67730	27.6	14.7	2.82	146	189	105	8.8
Gage	26.5	12.6	2.95	150	195	88	5.3
Benhur	26.1	13.3	2.95	142	187	83	0.6
Gaines	25.2	11.5	3.14	155	195	58	0.0
Riley 67	25.0	12.4	3.15	146	188	85	1.0
Stadler	24.1	12.9	3.06	145	188	93	4.5
Yorkstar	22.8	11.7	3.11	152	193	88	0.0
Yung Kwang	22.5	13.0	2.95	145	188	80	2.3
Atlas 66	19.9	16.3	2.75	150	191	112	5.4
Purdue 4930A6-28-2-1	17.4	15.4	2.83	146	189	99	3.6
INIA 66	17.4	14.3	2.79	140	183	64	0.0
Mean	29.0	13.8	2.91	148	190	87	2.5
Coefficient of variation (%)	18.7	5.3	4.71	0.9	0.8	4.9	127.2
Standard error	0.35	0.05	0.009	0.09	0.10	0.28	0.21

Table 64. Two-year means for agronomic traits of 30 cultivars grown in the "1st and 2nd International Winter Wheat Performance Nurseries" at Sulaimaniya, Iraq in 1969 and 1970.

Cultivar	Yield q/ha	Date of Flowering (Days from Jan. 1)	Date of Ripening (Days from Jan. 1)	Plant height cm.
Lerma Rojo 64	19.8	102	142	108
Sturdy	19.5	118	149	93
Bezostaia	19.3	119	149	109
Blueboy	17.8	120	151	108
San Pastore	16.8	115	147	106
Scout 66	15.5	123	151	121
Triumph 64	15.2	116	147	116
Parker	14.7	118	148	111
Arthur	14.6	116	146	107
Lancer	14.5	127	155	122
Timwin	14.4	122	150	97
Gage	14.1	122	150	122
Fertodi 293	14.0	124	152	133
INIA 66	13.3	96	142	93
NB 67730	13.0	123	151	135
Shawnee	13.0	123	152	111
Benhur	13.0	115	146	109
Heine VII	12.6	125	157	105
Atlas 66	11.7	119	149	139
Riley 67	11.6	117	146	118
Yorkstar	10.9	124	152	108
Winalta	10.5	127	155	126
Bankuti 1201	9.9	125	154	135
Yung Kwang	9.9	122	152	112
Cappelle Desprez	9.2	138	164	96
Stadler	9.0	118	148	121
Purdue 4930A6-28-2-1	9.0	121	150	113
Gaines	8.7	127	155	84
Felix	7.8	135	162	92
Odin	5.5	141	168	101
Mean	13.0	121	151	112
Coefficient of variation (%)	12.9	2.5	1.3	5.6
Standard error	0.11	0.20	0.13	0.40

Table 65. Two-year means for agronomic and grain quality traits of 29 cultivars grown in the "1st and 2nd International Winter Wheat Performance Nurseries" at Karaj, Iran in 1969 and 1970.

Cultivar	Yield q/ha	Protein %	Lysine % of protein	Date of flowering: Days from Jan. 1	Plant height cm.	Winter survival %
Timwin	34.6	13.3	3.07	124	78	96.0
Yung Kwang	34.4	12.6	2.99	123	93	97.6
Fertodi 293	33.4	12.7	3.02	120	115	98.8
NB 67730	33.1	14.7	2.99	119	112	98.5
Bezostaia	32.7	12.0	3.01	116	87	98.1
Bankuti 1201	32.6	13.6	2.97	120	114	98.3
Sturdy	32.1	13.4	2.90	123	76	93.5
Lancer	31.7	12.6	3.04	124	99	93.8
Riley 67	31.4	13.1	3.06	120	94	94.5
Parker	31.3	14.4	2.91	122	89	93.0
Gaines	31.0	11.7	3.21	130	72	96.8
San Pastore	30.2	12.2	3.12	116	83	96.8
Benhur	30.0	13.4	2.98	118	80	98.8
Atlas 66	29.9	16.1	2.79	119	106	98.3
Cappelle Desprez	29.8	14.2	2.91	130	93	98.4
Stadler	29.8	12.7	3.11	121	93	95.3
Lerma Rojo 64	29.7	13.4	2.90	109	83	91.3
Triumph 64	29.6	13.0	2.99	118	91	96.9
Heine VII	29.6	13.8	3.00	129	93	98.6
Gage	29.0	12.6	3.09	121	89	95.3
Winalta	28.7	13.0	2.97	126	103	91.4
Blueboy	28.6	12.7	3.05	126	83	87.5
Odin	28.5	15.2	3.05	140	98	87.6
Shawnee	28.1	12.6	3.03	123	91	92.8
Srout 66	27.6	12.5	3.01	120	94	97.8
Purdue 4930A6-28-2-1	27.5	15.1	2.93	120	100	97.0
Arthur	27.1	12.8	3.03	121	84	97.1
Felix	26.9	15.3	2.91	136	86	93.1
Yorkstar	26.8	12.2	3.20	128	89	97.3
Mean	30.2	13.3	3.01	123	92	95.5
Coefficient of variation (%)	21.6	9.7	1.68	4.3	7.6	6.7
Standard error	0.43	0.08	0.009	0.12	0.46	0.42

Table 66. Two-year means for agronomic and grain quality traits of 30 cultivars grown in the "1st and 2nd International Winter Wheat Performance Nurseries" at Kabul, Afghanistan in 1969 and 1970.

Cultivar	Yield q/ha	Test weight kg/hl	Protein %	Lysine % of protein	Date of Flowering (Days from Jan. 1)	Date of Ripening (Days from Jan. 1)	Plant height cm.	Lodging %	Winter survival %
Bezostaia	76.8	84.3	13.3	3.01	134	174	116	18.8	60.6
Yorkstar	69 4	78.8	12.8	3.13	138	176	114	5 6	60.0
Timwin	65.6	78.8	15.1	2.96	135	176	98	26 9	71.3
Blueboy	65.3	77.7	13.5	2 03	137	179	104	3.1	73.8
Scout 66	64.9	85.0	14.7	2.77	126	167	117	38.8	73.8
Shawnee	63.9	84.1	14.5	2.88	132	173	120	33.1	75.6
Sturdy	62.4	82.8	14.4	2.71	129	173	96	0.0	61.9
Heine VII	61.7	79.7	15.3	2.78	144	181	111	0 0	58.8
Bankuti 1201	60 6	83.5	15.5	2.84	130	172	131	43.1	75.5
Lancer	59.8	84.1	14.6	2.87	133	173	113	35.6	72.5
Stadler	59.5	82.8	14.5	2.96	131	172	126	48.1	73.8
Parker	58 6	84.9	15.5	2.80	128	172	110	11.9	63.8
Fertodi 293	58.1	81.8	15.7	2.81	132	171	124	12.5	66.3
San Pastore	57.8	82.0	15.4	2.83	126	168	111	10.6	70.0
Gage	57.6	82.9	16.1	2 74	128	171	116	26.8	76.3
Yung Kwang	57.5	78.4	14.6	2.92	133	174	116	30 6	68.8
Felix	57.1	77.7	15 6	2.86	151	189	107	0 0	63.1
NB 67730	55 7	82.0	18.3	2.79	129	170	127	53.6	83.5
Riley 67	54.6	83.5	15.6	2.87	131	169	116	27.3	61.9
Arthur	53.5	82.4	15.9	2 85	127	168	113	3.1	59.4
Benhur	52 6	82.7	15.4	2.83	126	169	122	21.9	65.6
Cappelle Desprez	52 6	77 8	16.2	2.77	146	180	99	0.0	73.1
Gaines	51.1	78.2	13 1	3.12	142	178	81	0.0	72.5
Winalta	48.9	83.9	15.0	2.89	141	174	124	38.1	74.4
Atlas 66	48.9	80.6	18.0	2.70	130	169	123	12.5	62.5
INIA 66	48.7	83.8	14.7	2.73	117	168	81	0.0	23.8
Lerma Rojo 64	48 7	83.6	16.5	2.75	112	167	99	5.0	41.3
Triumph 64	47.1	84.8	17.1	2.75	125	168	117	18 8	70.6
Odin	46 8	77.5	15.4	2.96	150	187	119	2.5	61.9
Purdue 4930A6-28-2-1	45.7	81.5	18.4	2.75	130	168	128	9.4	61.9
Mean	57.1	81.7	15.4	2 85	132	173	113	17.9	55.9
Coefficient of variation (%)	9.8	1.2	6.5	3.0	1.2	2.0	6.3	102.8	10.4
Standard error	0.36	0.06	0.06	0 006	0.10	0.22	0.45	1.19	0.44

Table 67. Two-year means for agronomic and grain quality traits of 28 cultivars grown in the "1st and 2nd International Winter Wheat Performance Nurseries" at Suwon, Korea in 1969 and 1970.

Cultivar	Yield q/ha	Test weight kg/hl	Protein %	Lysine % of protein	Date of Flowering (Days from Jan. 1)	Date of Ripening (Days from Jan. 1)	Plant height cm.	Winter survival %
Bezostaia	49.6	72.3	13.9	2.81	143	182	88	86.3
Yung Kwang	44.6	67.9	17.2	2.67	141	182	94	85.6
Parker	40.7	73.1	15.2	2.49	141	181	88	85.6
Purdue 4930A6-[illegible]-1	36.8	70.5	18.4	2.64	143	180	97	85.0
Arthur	36.5	69.3	15.7	2.73	141	178	89	82.5
Sturdy	36.3	66.3	16.5	2.67	139	180	72	82.5
Riley 67	34.9	67.1	15.6	2.81	144	181	92	83.1
Berthur	34.5	68.3	15.3	2.74	139	172	91	81.9
Stadler	34.1	66.3	14.6	2.85	142	180	95	81.9
Yorkstar	34.0	60.1	14.0	3.00	147	183	93	84.4
NB 67730	31.5	69.1	17.2	2.62	141	180	100	82.5
Atlas 66	31.4	63.5	19.3	2.60	148	187	99	51.3
Gage	31.1	70.2	15.4	2.73	144	181	89	80.6
Scout 66	30.2	69.6	14.4	2.82	140	179	89	83.1
Blueboy	29.8	66.3	16.5	2.74	146	187	88	70.6
Winalta	28.6	69.3	14.7	2.78	147	184	92	86.3
Timwin	28.3	65.6	16.9	2.72	144	182	76	76.9
Heine VII	28.3	61.1	17.1	3.32	154	193	89	73.1
Fertodi 293	27.5	66.4	16.1	2.79	146	184	93	77.5
Shawnee	27.2	68.5	15.6	2.79	145	183	93	75.6
Triumph 64	26.0	71.3	14.8	2.75	139	178	84	75.6
Lancer	25.3	68.2	15.3	2.85	146	176	90	80.6
Bankuti 1201	24.7	65.8	16.9	2.74	145	186	98	73.1
San Pastore	23.5	69.6			141	181	78	65.0
Gaines	19.9	57.5	14.8	2.91	148	185	70	78.8
Cappelle Desprez	16.8	55.6	18.5	2.88	159	196	85	66.9
Felix	11.8	54.5	19.2	2.89	160	190	89	65.6
Odin	11.5	56.8	16.7	2.80	160	195	102	68.1
Mean	29.8	66.1	16.1	2.78	145	183	89	77.5
Coefficient of variation (%)	11.9	2.8	6.3	12.0	0.7	3.1	4.9	7.0
Standard error	0.24	0.12	0.07	0.023	0.07	0.37	0.29	0.36

Table 68. Two-year means for agronomic traits of 30 cultivars grown in the "1st and 2nd International Winter Wheat Performance Nurseries" at Sapporo, Japan in 1969 and 1970.

Cultivar	Yield q/ha	Date of Flowering (Days from Jan. 1)	Date of Ripening (Days from Jan. 1)	Plant height cm.	Winter survival %
Stadler	53.2	172	208	125	84.1
Timwin	51.5	173	209	100	74.0
Bezostaia	46.5	172	208	103	69.0
Riley 67	41.9	171	208	111	64.6
Yorkstar	38.9	174	210	115	64.4
Benhur	38.2	168	208	111	82.5
Triumph 64	33.8	168	205	109	65.6
Winalta	30.0	173	210	116	55.6
Arthur	28 9	171	208	103	66.9
Odin	26.5	181	217	132	64.1
Sturdy	23.8	171	211	88	36.3
Purdue 4930A6-28-2-1	22.5	171	209	113	41.1
Felix	21.4	178	216	96	51.5
Scout 66	16.3	172	209	97	28.8
Lancer	11.7	172	211	104	12.6
Yung Kwang	10.2	173	211	94	6.5
Blueboy	9.2	174	216	97	11.8
NB 67730	8.7	171	211	106	13.5
Shawnee	8.4	173	214	110	9.3
Parker	6.1	171	213	92	5.6
Fertodi 293	5.6	173	214	100	8.6
Gage	5.5	173	213	92	2.6
Heine VII	5.4	179	216	91	3.8
Gaines	4.3	176	215	79	4.3
Bankuti 1201	2.1				0.1
San Pastore	2.1				0.6
Atlas 66	0.2				0.3
Cappelle Desprez					0
INIA 66					0
Lerma Rojo 64					0
Mean	20.5	173	210	104	30.9
Coefficeint of variation (%)	28.3	0.5	0.5		
Standard error	0.39	0.07	0.09		

Table 69. Two-year agronomic and grain quality traits of 28 cultivars grown in the "1st and 2nd International Winter Wheat Performance Nurseries" at Bordenave, Argentina in 1969 and 1970.

Cultivar	Yield q/ha	Test weight kg/hl	Protein %	Lysine % of protein	Date of Flowering (Days from Jan. 1)	Date of Ripening (Days from Jan. 1)	Plant height cm.
Blueboy	32.0	76.1	13.7	2.84	312	354	82
Parker	28.3	82.6	14.6	2.82	311	354	91
Sturdy	27.7	80.8	14.9	2.85	307	352	81
Scout 66	26.5	82.0	14.3	2.93	312	352	100
Benhur	26.3	78.0	15.0	2.85	313	355	91
Triumph 64	26.2	81.9	14.4	2.93	308	350	100
Gage	25.4	79.2	14.3	2.98	313	354	97
San Pastore	25.3	75.3	14.5	2.92	301	347	85
Shawnee	24.8	81.3	13.5	2.99	312	352	102
Timwin	24.4	73.9	16.0	2.90	317	356	79
Bezostaia	24.2	81.2	14.4	2.88	312	354	86
Arthur	23.2	79.3	14.8	2.93	310	353	82
Stadler	22.8	76.1	14.8	2.97	316	358	99
NB 67730	22.8	80.8	17.0	2.76	312	353	108
Fertodi 293	22.7	75.9	15.6	2.88	317	357	99
Winalta	21.7	81.7	14.0	2.90	319	358	102
Atlas 66	21.2	77.5	18.7	2.68	314	354	109
Yung Kwang	20.9	75.1	15.0	2.79	318	357	90
Gaines	20.7	72.6	14.0	3.01	320	359	77
Riley 67	20.3	75.6	15.8	2.84	316	356	89
Yorkstar	19.9	71.9	12.8	3.20	319	359	88
Lerma Rojo 64	19.1	77.1	15.4	2.79	291	346	82
Lancer	18.8	78.4	14.2	2.94	319	359	94
INIA 66	17.4	79.9	15.2	2.72	292	340	71
Bankuti 1201	16.7	81.3	15.3	2.88	319	358	106
Purdue 4930A6-28-2-1	16.3	79.3	17.3	2.85	317	355	101
Cappelle Desprez	16.1	67.1	16.6	2.77	325	361	84
Odin[a]							
Mean	22.7	77.8	15.0	2.88	313	354	92
Coefficient of variation (%)	13.3	1.2	5.5	2.7	0.8	0.6	5.9
Standard error	0.2	0.06	0.06	0.005	0.18	0.13	0.37

[a]Odin did not mature in 1969.

Table 70. Summary of two-year mean "Yields" (q/ha) for cultivars grown in the "1st and 2nd International Winter Wheat Performance Nurseries," 1969 and 1970.

Cultivar	Davis, Calif. U.S.	Stillwater, Okla. U.S.	Rowan Co., N.C. U.S.	Wageningen, Netherlands	Svalof, Sweden	Milano, Italy	Rieti, Italy	Novi Sad, Yugoslavia	Fundulea, Romania
Bezostaia	37.4	36.8	41.6	44.2	65.5	51.5	55.7	52.0	26.1
Arthur	24.8	43.2	46.0	36.8	50.7	56.4	51.1	59.9	31.6
Timwin	30.3	29.8	36.0	37.0	59.4	58.6	52.6	52.2	33.2
Sturdy	39.6	31.2	35.5	38.6	53.9	51.1	50.6	47.2	26.7
Parker	27.2	34.8	37.2	33.5	56.2	53.1	45.6	53.3	30.8
Scout 66	30.8	36.2	35.1	32.7	54.2	45.5	46.8	52.0	36.6
Yung Kwang	28.0	28.0	35.4	37.9	47.7	57.9	50.3	52.4	30.2
San Pastore	32.3	29.8	43.5	40.1		56.3	41.8	48.7	27.3
Benhur	27.2	34.7	38.7	37.7		49.9	50.6	54.9	30.1
Blueboy	23.6	28.0	43.0	41.0	54.9	57.6	52.5	42.0	20.7
Fertodi 293	25.7	29.2	32.4	40.2	59.3	52.0	49.4	45.9	33.0
Shawnee	23.5	28.5	37.1	32.6	47.6	53.9	49.9	47.0	30.8
Gage	23.6	32.6	36.6	36.3	49.7	46.7	44.4	52.3	32.8
Stadler	22.6	31.3	41.6	38.6	64.9	52.9	29.8	50.6	32.2
Riley 67	21.9	32.9	39.5	40.2	56.8	44.2	33.0	49.8	30.9
Triumph 64	38.5	35.4	32.8	27.9	47.3	48.7	43.6	46.4	30.4
Lancer	29.4	27.4	29.6	35.7	56.6	39.5	42.1	41.9	23.7
Yorkstar	20.9	25.9	41.4	46.1	55.5	54.1	25.0	36.0	29.2
Bankuti 1201	18.1	24.8	31.1	36.6	42.8	45.0	37.5	48.8	29.0
NB 67730	21.3	29.2	30.0	31.2	45.9	35.2	40.5	50.5	29.7
Heine VII	28.3	20.4	37.4	46.8	65.9	50.9	29.7	32.6	18.2
Atlas 66	20.7	19.8	31.8	39.5	45.1	44.2	46.7	52.0	25.0
Purdue 4930A6-28-2-1	18.8	31.1	35.7	29.4	42.3	45.8	45.0	49.1	29.6
Winalta	21.2	26.6	30.3	32.4	46.3	38.8	30.4	34.2	27.5
Gaines	27.0	22.0	38.5	41.7	52.9	42.8	23.0	36.2	16.7
Cappelle Desprez	19.0	15.9	25.4	42.6	53.9	44.5	31.8	33.1	15.2
Felix	16.4	10.5	25.9	40.3	61.5	41.3	18.3	22.8	15.1
Odin	7.1	6.7	24.2	36.2	70.2	35.5	15.5	26.0	8.9
Lerma Rojo 64	49.5			36.1		53.1	50.1	48.4	
INIA 66	51.6			20.8		41.0	41.0		
Mean	26.9	27.9	35.5	37.0	54.1	53.4	41.1	45.5	27.2

Table 70. (Continued)

Cultivar	Ankara, Turkey	Eskisehir, Turkey	Sulaimaniya, Iraq	Karaj Iran	Kabul, Afghanistan	Suwon Korea	Sapporo, Japan	Mean	
								16 locations	14 locations[a]
Bezostaia	42.6	34.7	19.3	32.7	76 8	49.6	46.5	44.5	43.1
Arthur	32.3	27.9	14.6	27.1	53.5	36.5	28.9	38.8	38.7
Timwin	40.0	29.0	14.4	34.6	65.6	28.3	51.5	40.8	38.7
Sturdy	31.7	31.6	19.5	32.1	62.4	36.3	23.8	38.2	38.2
Parker	32.1	36.7	14.7	31.3	58.6	40.7	6.1	37.1	37.9
Scout 66	41.1	32.6	15.5	27.6	64.9	30.2	16.3	37.4	37.7
Yung Kwang	30 7	22.5	9.9	34.4	57.5	44.6	10.2	36.2	37.2
San Pastore	33.7	36.2	16.8	30.2	57.8	23.5	2.1		37.0
Benhur	30.8	26.1	13.0	30.0	52.6	34.5	38.2	.	36.5
Blueboy	27.2	33.5	17.8	28.6	65.3	29.8	9.2	35.9	36.5
Fertodi 293	35.0	33.1	14 0	33.4	58.1	27.5	5 6	36.0	36.5
Shawnee	35.9	28.4	13 0	28.1	63.9	27.2	8.4	35.3	36.4
Gage	33.8	26.5	14.1	29.0	57.6	31.1	5.5	34.5	35.5
Stadler	30.6	24.1	9.0	29.8	59.5	34.1	53.2	37.8	34.8
Riley 67	32.2	25.0	11.6	31.4	54.6	34.9	41.9	36.3	34.5
Triumph 64	33.0	28.4	15.2	29.6	47.1	26.0	33 8	35.3	34.5
Lancer	34.6	34.3	14.5	31.7	59.8	25.3	11.7	34.3	34.2
Yorkstar	37.1	22.8	10.9	26.8	69.4	34.0	38.9	35.9	34.2
Bankuti 1201	34.2	33.8	9.9	32.6	60 6	24.7	2.1	31.9	33.6
NB 67730	33.0	27.6	13.0	33.1	55.7	31.5	8.7	32.3	32.9
Heine VII	25.1	36.6	12.6	29.6	61.7	28.3	5.4	33.1	32.8
Atlas 66	25.9	19.9	11.7	29.9	48.9	31.4	0.2	30.7	32.0
Purdue 4930A6-28-2-1	25.1	17.4	9 0	27.5	45.7	36.8	27.5	32.0	31.9
Winalta	23.6	31.4	10.5	28.7	48.9	28 6	30.0	31.1	30.2
Gaines	21.0	25.2	8.7	31.0	51.1	19.9	4.3	28.9	28.9
Cappelle Desprez	23.0	33.5	9.2	29.8	52.6	16.8			28.0
Felix	24.8	29.4	7.8	26.9	57.1	11.8	21.4	26.9	24.9
Odin	19.2	30.3	5.5	28.5	46.8	11.5	26.5	24.9	21.6
Lerma Rojo 64	28.9	33.9	19.8	29.7	48.7			.	39.9[b]
INIA 66	11.6	17.4	13.3	.	48.7	.	.	.	30.7[c]
Mean	30.3	29.0	13.0	30.2	57.1	29.8	20.5	34.9	32.7

[a] Excluding Svalof, Sweden, and Sapporo, Japan.
[b] Mean of 10 locations for which Bezostaia averaged 32.2 q/ha.
[c] Mean of 8 locations for which Bezostaia averaged 29 6 q/ha.

Table 71. Summary of two-year mean "Test Weights" (kg/hl) for cultivars grown in the "1st and 2nd International Winter Wheat Performance Nurseries," 1969 and 1970.

Cultivar	Wageningen, Netherlands	Svalof, Sweden	Milano, Italy	Rieti, Italy	Novi Sad, Yugoslavia	Fundulea, Romania	Kabul, Afghanistan	Suwon, Korea	Mean	
									8 locations	7 locations[a]
Parker	83.2	82.7	82.8	82.1	79.1	81.6	84.9	73.1	81.2	81.0
Bezostaia	85.2	82.9	81.8	82.8	76.2	79.3	84.3	72.3	80.6	80.3
Triumph 64	83.9	80.5	81.0	81.3	77.4	81.4	84.8	71.3	80.2	80.2
Shawnee	84.8	81.8	81.6	82.4	77.3	81.0	84.1	68.5	80.2	80.0
Purdue 4930A6-28-2-1	83.7	79.5	81.7	81.6	77.6	79.9	81.5	70.5	79.5	79.5
Winalta	84.9	80.5	81.3	80.8	74.1	81.3	83.9	69.3	79.5	79.4
Scout 66	82.6	80.0	80.4	81.1	75.9	81.3	85.0	69.6	79.5	79.4
Benhur	83.3		80.8	81.4	77.6	80.4	82.7	68.3		79.2
Lancer	85.2	82.6	78.9	81.1	74.8	81.9	84.1	68.2	79.6	79.2
Gage	83.1	79.3	80.1	80.4	75.3	79.9	82.9	70.2	78.9	78.8
Arthur	81.6	79.2	80.5	80.9	77.1	79.9	82.4	69.3	78.9	78.8
NB 67730	82.9	78.4	80.0	80.4	75.6	80.1	82.0	69.1	78.6	78.6
Bankuti 1201	83.2	79.0	81.4	78.7	76.1	80.7	83.5	65.8	78.6	78.5
Sturdy	85.1	80.6	79.6	79.9	75.9	79.1	82.8	66.3	78.7	78.4
Stadler	85.8	83.9	79.5	70.1	77.2	81.3	82.8	66.3	78.4	77.6
Fertodi 293	83.0	80.5	79.7	77.9	72.2	78.9	81.8	66.4	77.6	77.1
San Pastore	81.7		78.2	76.5	72.1	76.8	82.0	69.6		76.7
Riley 67	84.0	81.8	77.4	71.9	74.0	79.0	83.5	67.1	77.3	76.7
Atlas 66	84.3	81.0	77.7	80.4	73.8	73.8	80.6	63.5	76.9	76.3
Yung Kwang	83.2	79.5	78.8	75.4	71.9	77.1	78.4	67.9	76.5	76.1
Timwin	80.3	81.1	77.8	78.3	73.2	78.0	78.8	65.6	76.6	76.0
Blueboy	78.6	80.4	74.0	73.7	67.7	71.4	77.7	66.3	73.7	72.8
Yorkstar	79.0	79.2	72.7	66.3	64.7	72.9	78.8	60.1	71.7	70.6
Heine VII	81.1	79.4	73.5	69.6	63.1	66.0	79.7	61.1	71.6	70.5
Gaines	78.7	79.5	71.2	65.0	64.2	68.7	78.2	57.5	70.4	69.1
Cappelle Desprez	79.5	78.3	73.2	67.8	65.8	62.7	77.8	55.6	70.1	68.9
Felix	80.4	79.8	71.4	65.2	60.6	64.1	77.7	54.5	69.2	67.7
Odin	79.2	82.2	72.3	65.0	63.1	59.4	77.5	56.8	69.4	67.6
Lerma Rojo 64	84.7		80.4	80.4	74.5		83.6			80.7[b]
INIA 66	82.5		79.3	79.9			83.8			81.4[c]
Mean	82.6	80.5	78.3	76.6	72.7	76.3	81.7	66.1	76.9	76.3

[a] Excluding Svalof, Sweden.
[b] Mean of 5 locations for which Bezostaia averaged 82.1 kg/hl.
[c] Mean of 4 locations for which Bezostaia averaged 83.5 kg/hl.

Table 72. Summary of two-year mean "Grain Protein" contents (%) for cultivars grown in the "1st and 2nd International Winter Wheat Performance Nurseries," 1969 and 1970.

Cultivar	Wageningen, Netherlands	Svalof, Sweden	Milano, Italy	Rieti, Italy	Novi Sad, Yugoslavia	Fundulea, Romania	Ankara, Turkey	Eskisehir, Turkey	Karaj, Iran	Kabul, Afghanistan	Suwon, Korea	Mean	
												11 loc.	10 loc.[a]
Atlas 66	16.4	18.6	16.8	17.1	18.5	19.6	18.3	16.3	16.1	18.0	19.3	17.7	17.6
Purdue 4930A6-28-2-1	18.3	20.5	15.5	16.3	19.1	17.9	15.8	15.4	15.1	18.4	18.4	17.3	17.2
NB 67730	16.7	19.5	15.3	16.2	17.3	16.9	15.5	14.7	14.7	18.3	17.2	16.6	16.5
Cappelle Desprez	14.7	14.8	14.3	14.0	18.0	18.9	16.1	15.1	14.2	16.2	18.5	15.9	15.6
Bankuti 1201	15.3	18.1	14.1	14.0	16.1	15.7	15.2	14.9	13.6	15.5	16.9	15.4	15.3
Triumph 64	17.1	16.4	14.3	14.7	15.4	15.8	14.5	14.2	13.0	17.1	14.8	15.2	15.3
Odin	13.8	13.9	12.8	14.2	16.5	16.8	14.8	14.8	15.2	15.4	16.7	15.0	14.8
Benhur	15.3	17.4	13.9	13.7	15.2	16.1	13.4	13.3	13.4	15.4	15.3	14.9	14.8
Fertodi 293	15.6	16.6	13.0	14.0	15.9	14.6	15.5	13.6	12.7	15.7	16.1	14.8	14.7
Parker	15.7	16.5	13.0	12.7	14.7	15.4	14.4	13.7	14.4	15.5	15.2	14.7	14.6
Sturdy	14.4	15.3	13.9	13.7	14.8	16.3	15.2	14.8	13.4	14.4	16.5	14.8	14.6
Felix	12.8	13.6	11.7	13.8	16.3	16.1	14.5	15.5	15.3	15.6	19.2	14.9	14.5
Gage	15.1	17.4	13.3	13.8	15.6	15.1	13.7	12.6	12.6	16.1	15.4	14.6	14.5
Arthur	14.8	17.2	13.1	13.4	15.6	15.2	13.5	12.6	12.8	15.9	15.7	14.5	14.4
Scout 66	16.4	17.4	13.0	13.8	15.3	14.8	13.3	12.9	12.5	14.7	14.4	14.4	14.4
Heine VII	13.2	13.4	12.4	12.4	16.7	17.0	14.4	14.7	13.8	15.3	17.1	14.6	14.3
Yung Kwang	14.6	17.8	13.4	13.1	14.0	15.5	14.4	13.0	12.6	14.6	17.2	14.6	14.3
Timwin	14.1	15.5	12.6	13.0	15.8	15.4	13.9	13.9	13.3	15.1	16.9	14.5	14.3
Riley 67	14.3	16.7	12.3	11.1	15.2	16.2	14.0	12.4	13.1	15.6	15.6	14.2	14.1
Winalta	14.2	16.5	13.0	12.5	14.4	14.1	13.9	12.7	13.0	15.0	14.7	14.0	13.9
Lancer	14.9	15.9	13.5	13.2	15.5	14.4	12.3	12.5	12.6	14.6	15.3	14.1	13.9
Blueboy	13.1	16.5	12.0	12.6	14.9	14.9	13.5	13.8	12.7	13.5	16.5	14.0	13.8
San Pastore	14.6	13.6	11.5	11.9	14.4	14.3	13.5	14.3	12.2	15.4			13.6
Shawnee	13.2	16.2	12.3	12.5	14.5	13.8	13.4	13.3	12.6	14.5	15.6	13.8	13.6
Bezostaia	13.4	14.3	12.7	12.9	15.0	14.5	13.4	13.1	12.0	13.3	13.9	13.5	13.5
Stadler	12.9	14.9	11.4	10.9	14.2	14.8	12.8	12.9	12.7	14.5	14.6	13.3	13.2
Gaines	12.6	13.9	11.0	12.1	15.2	15.3	11.6	11.5	11.7	13.1	14.8	13.0	12.8
Yorkstar	12.2	15.5	11.0	9.8	14.8	12.1	11.7	11.7	12.2	12.8	14.0	12.5	12.4
Lerma Rojo 64	14.9	.	14.0	14.0	17.1		15.3	15.3	13.4	16.5			15.1[b]
INIA 66	15.2		14.8	14.6	.		14.5	14.3		14.7			14.7[c]
Mean	14.7	16.2	13.2	13.4	15.8	15.6	14.2	13.8	13.3	15.4	16.1	14.7	14.6

[a] Excluding Suwon, Korea.
[b] Mean of 8 locations for which Bezostaia averaged 13.2%.
[c] Mean of 6 locations for which Bezostaia averaged 13.1%.

Table 73. Summary of two-year mean "Lysine" contents (percent of protein) for cultivars grown in the "1st and 2nd International Winter Wheat Performance Nurseries," 1969 and 1970.

Cultivar	Wageningen, Netherlands	Svalof, Sweden	Milano, Italy	Rieti, Italy	Novi Sad, Yugoslavia	Fundulea, Romania	Ankara, Turkey	Eskisehir, Turkey	Karaj, Iran	Kabul, Afghanistan	Suwon, Korea	Mean 11 loc.	Mean 10 loc.[a]
Yorkstar	3.19	2.82	3.18	3.37	3.01	3.20	3.24	3.11	3.20	3.13	3.00	3.13	3.15
Gaines	3.10	2.92	3.20	3.17	2.98	2.87	3.19	3.14	3.21	3.12	2.91	3.07	3.09
Stadler	3.06	2.83	3.10	3.26	2.88	2.91	3.08	3.06	3.11	2.96	2.85	3.01	3.03
Riley 67	2.92	2.76	3.02	3.18	2.93	2.82	2.94	3.15	3.06	2.87	2.81	2.95	2.97
Timwin	3.01	2.88	3.01	2.96	2.91	2.88	2.94	2.97	3.07	2.96	2.72	2.94	2.96
Blueboy	3.05	2.78	3.06	2.94	2.91	2.82	2.95	2.90	3.05	3.03	2.74	2.93	2.95
San Pastore	2.91	3.00	3.08	2.95	2.87	2.87	2.89	2.85	3.12	2.83			2.94
Odin	2.98	2.92	3.01	2.88	2.90	2.83	2.91	2.96	3.05	2.96	2.80	2.93	2.94
Felix	3.08	2.93	3.00	2.91	2.89	2.89	2.83	2.82	2.91	2.86	2.89	2.91	2.91
Bezostaia	2.96	2.82	2.80	2.79	2.84	2.82	2.91	2.99	3.04	3.01	2.81	2.89	2.90
Arthur	2.92	2.74	2.97	2.82	2.81	2.82	2.92	3.05	3.03	2.85	2.73	2.88	2.89
Winalta	2.88	2.73	2.92	2.86	2.88	2.84	2.86	2.95	2.97	2.89	2.78	2.87	2.88
Yung Kwang	2.89	2.73	2.86	2.85	2.89	2.83	2.84	2.95	2.99	2.92	2.67	2.86	2.88
Lancer	2.87	2.70	2.87	2.84	2.82	2.85	3.00	2.92	3.04	2.87	2.85	2.88	2.88
Shawnee	2.94	2.68	2.92	2.87	2.78	2.88	2.88	2.91	3.08	2.88	2.79	2.87	2.88
Gage	2.87	2.69	2.84	2.84	2.87	2.81	3.04	2.95	3.09	2.74	2.73	2.86	2.87
Heine VII	2.99	2.83	2.94	2.93	2.77	2.76	2.80	2.78	3.00	2.78	3.32	2.90	2.86
Parker	2.88	2.72	2.90	2.96	2.95	2.77	2.79	2.88	2.91	2.80	2.49	2.82	2.86
Scout 66	2.79	2.70	2.89	2.81	2.83	2.77	2.97	2.96	3.01	2.77	2.82	2.85	2.85
Fertodi 293	2.85	2.72	2.90	2.73	2.82	2.86	2.90	2.85	3.02	2.81	2.79	2.84	2.84
Bankuti 1201	2.86	2.74	2.78	2.76	2.78	2.72	2.86	2.86	2.97	2.84	2.74	2.81	2.82
Benhur	2.84	2.63	2.79	2.72	2.72	2.72	2.88	2.95	2.98	2.83	2.74	2.80	2.81
Sturdy	2.86	2.74	2.82	2.85	2.80	2.77	2.80	2.73	2.90	2.71	2.67	2.79	2.80
Cappelle Desprez	2.86	2.78	2.79	2.75	2.78	2.72	2.73	2.76	2.91	2.77	2.88	2.79	2.79
Triumph 64	2.80	2.74	2.76	2.76	2.81	2.73	2.81	2.79	2.99	2.75	2.75	2.79	2.79
NB 67730	2.84	2.62	2.76	2.67	2.70	2.72	2.80	2.82	2.99	2.79	2.62	2.76	2.77
Purdue 4930A6-28-2-1	2.71	2.53	2.77	2.68	2.67	2.72	2.76	2.83	2.93	2.75	2.64	2.73	2.74
Atlas 66	2.78	2.63	2.66	2.58	2.69	2.59	2.67	2.75	2.79	2.70	2.60	2.68	2.68
Lerma Rojo 64	2.89		2.78	2.76	2.66		2.79	2.78	2.90	2.75			2.79[b]
INIA 66	2.83		2.70	2.66			2.84	2.79		2.73			2.76[c]
Mean	2.91	2.76	2.90	2.87	2.83	2.81	2.89	2.91	3.01	2.85	2.78	2.87	2.87

[a] Excluding Suwon, Korea.
[b] Mean of 8 locations for which Bezostaia averaged 2.92%.
[c] Mean of 6 locations for which Bezostaia averaged 2.91%.

Table 74. Summary of two-year mean "Dates of Flowering" (days from Jan. 1) for cultivars grown in the "1st and 2nd International Winter Wheat Performance Nurseries," 1969 and 1970.

Cultivar	Wageningen, Netherlands	Svalof, Sweden	Milano, Italy	Rieti, Italy	Novi Sad, Yugoslavia	Fundulea, Romania	Eskisehir, Turkey
San Pastore	158	167	138	136	143	139	138
Benhur	157	166	139	139	142	138	142
Triumph 64	157	166	140	136	142	138	143
Arthur	160	168	141	142	144	140	144
Sturdy	157	167	140	138	144	140	148
Yung Kwang	158	166	141	143	144	140	145
NB 67730	159	166	142	143	145	140	146
Parker	160	167	141	142	146	141	145
Scout 66	160	167	142	143	146	141	145
Purdue 4930A6-28-2-1	159	167	142	144	144	142	146
Riley 67	161	169	143	143	145	142	146
Stadler	161	169	143	142	145	142	145
Bezostaia	161	170	141	143	145	142	146
Gage	161	168	144	146	149	142	150
Bankuti 1201	161	169	145	147	147	145	151
Fertodi 293	161	169	143	148	149	144	150
Atlas 66	161	170	144	147	150	147	150
Shawnee	162	169	144	146	149	143	148
Timwin	162	170	144	144	148	144	150
Lancer	162	170	145	149	150	145	147
Blueboy	162	171	146	148	151	149	151
Winalta	162	170	147	151	151	148	152
Yorkstar	162	170	146	151	152	148	152
Heine VII	165	173	151	155	154	139	155
Gaines	163	170	147	151	153	148	155
Cappelle Desprez	165	172	152	157	156	158	158
Felix	166	175	152	162	156	156	161
Odin	167	175	155	163	159	143	167
Lerma Rojo 64	156		136	133	138		141
INIA 66	153		134	129			140
Mean	161	169	144	145	148	144	148

Table 74. (Continued)

Cultivar	Sulaimaniya, Iraq	Karaj, Iran	Kabul, Afghanistan	Suwon, Korea	Sapporo, Japan	Mean	
						12 locations	11 locations[a]
San Pastore	115	116	126	141			138
Benhur	115	118	126	139	168	141	138
Triumph 64	116	118	125	139	168	141	138
Arthur	116	121	127	141	171	143	140
Sturdy	118	123	129	139	171	143	140
Yung Kwang	122	123	133	141	173	144	141
NB 67730	123	119	129	141	171	144	141
Parker	118	122	128	141	171	144	141
Scout 66	123	120	126	140	172	144	141
Purdue 4930A6-28-2-1	121	120	130	143	171	144	142
Riley 67	117	120	131	144	171	144	142
Stadler	118	121	131	142	172	144	142
Bezostaia	119	116	134	143	172	144	142
Gage	122	121	128	144	173	146	143
Bankuti 1201	125	120	130	145			144
Fertodi 293	124	120	132	146	173	147	144
Altas 66	119	119	130	148			144
Shawnee	123	123	132	145	173	146	144
Timwin	122	124	135	144	173	147	144
Lancer	127	124	133	146	172	148	145
Blueboy	120	126	137	146	174	148	146
Winalta	127	126	141	147	173	150	147
Yorkstar	124	128	138	147	174	149	147
Heine VII	125	129	144	154	179	152	149
Gaines	127	130	142	148	176	151	149
Cappelle Desprez	138	130	146	159			154
Felix	135	136	151	160	178	157	155
Odin	141	140	150	160	181	158	156
Lerma Rojo 64	102	109	112				128[b]
INIA 66	96		117				128[c]
Mean	121	123	132	145	173	146	144

[a] Excluding Sapporo, Japan.
[b] Mean of 8 locations for which Bezostaia averaged 138 days from Jan. 1.
[c] Mean of 6 locations for which Bezostaia averaged 141 days from Jan. 1.

Table 75. Summary of two-year mean "Dates of Ripening" (days from Jan. 1) for cultivars grown in the "1st and 2nd International Winter Wheat Performance Nurseries," 1969 and 1970.

Cultivar	Wageningen, Netherlands	Svalof, Sweden	Milano, Italy	Rieti, Italy	Fundulea, Romania	Eskisehir, Turkey	Sulaimaniya, Iraq	Kabul, Afghanistan	Suwon, Korea	Sapporo, Japan	Mean	
											10 locations	9 locations[a]
San Pastore	208	216	182	182	179	184	147	168	181			183
Triumph 64	206	217	183	187	178	186	147	168	178	205	186	183
Riley 67	196	223	18-	186	180	188	146	169	181	208	186	184
Stadler	196	222	187	184	180	188	148	172	180	208	187	184
Purdue 4930A6-28-2-1	206	220	186	189	181	189	150	168	180	209	188	185
Arthur	207	222	187	190	180	187	146	168	178	208	187	185
Scout 66	207	218	187	189	181	188	151	167	179	209	188	185
Sturdy	205	219	186	187	182	188	149	173	180	211	188	185
Yung Kwang	204	217	189	190	180	188	152	174	182	211	189	186
NB 67730	206	217	186	190	182	189	151	170	180	211	188	186
Parker	207	221	187	189	182	189	148	172	181	213	189	186
Timwin	195	222	189	190	181	192	150	176	182	209	189	186
Fertodi 293	209	220	186	192	181	190	152	171	184	214	190	187
Gage	209	221	186	191	182	195	150	171	181	213	190	187
Lancer	208	222	188	192	184	189	155	173	176	211	190	187
Shawnee	209	224	188	189	183	190	152	173	183	214	191	188
Bezostaia	212	225	188	191	184	191	149	174	182	208	190	188
Winalta	209	223	189	19[illegible]	[illegible]	[illegible]	[illegible]	172	184	210	191	189
Bankuti 1201	208	222	189	190	[illegible]	194	154	172	186			189
Yorkstar	211	224	189	188	184	193	152	176	183	210	191	189
Atlas 66	209	229	190	195	188	191	149	169	187			190
Gaines	212	226	187	187	185	195	155	178	185	215	193	190
Blueboy	214	232	190	199	184	198	151	179	187	216	195	193
Cappelle Desprez	214	225	192	196	193	199	164	180	196			195
Heine VII	215	227	191	196	193	198	157	181	193	216	197	195
Felix	217	229	190	195	194	192	162	189	190	216	197	195
Odin	216	232	194	195	194	196	168	187	195	217	199	197
Lerm. Rojo 64	203		180	183		184	142	167				177[b]
INIA 66	203	.	179	183		183	142	168				176[b]
Mean	207	222	187	190	183	190	151	173	183	210	190	187

[a] Excluding Sapporo, Japan.
[b] Mean of 6 locations for which Bezostaia averaged 184 days from Jan. 1.

Table 76. Summary of two-year "Plant Heights" (cm) for cultivars grown in the "1st and 2nd International Winter Wheat Performance Nurseries," 1969 and 1970.

Cultivar	Wageningen, Netherlands	Svalof, Sweden	Milano, Italy	Rieti, Italy	Novi Sad, Yugoslavia	Fundulea, Romania	Eskisehir, Turkey
Gaines	78	66	73	84	78	69	58
Sturdy	91	71	74	87	78	72	68
Timwin	95	77	83	92	85	85	71
Cappelle Desprez	103	78	95	97	87	83	88
San Pastore	101	70	96	102	90	80	87
Felix	100	82	92	106	92	84	88
Blueboy	96	83	92	110	98	90	79
Bezostaia	100	80	93	108	91	83	89
Parker	106	81	100	113	97	90	85
Heine VII	108	86	103	114	96	89	89
Arthur	110	83	106	115	96	88	87
Benhur	107	87	108	114	98	92	83
Yung Kwang	117	81	108	114	101	91	80
Triumph 64	115	85	113	118	99	92	85
Yorkstar	103	88	103	116	103	102	88
Gage	116	86	113	122	110	98	88
Riley 67	115	86	106	121	108	100	85
Scout 66	117	86	113	121	103	100	99
Lancer	118	89	116	129	108	105	96
Shawnee	117	91	117	126	113	106	97
Stadler	117	97	116	128	110	103	93
Odin	129	105	121	133	111	103	88
Winalta	121	91	115	129	111	112	97
Purdue 4930A6-28-2-1	122	90	123	133	111	105	99
Fertodi 293	121	92	120	131	114	110	100
Atlas 66	127	88	127	131	109	99	112
NB 67730	129	97	121	133	114	104	105
Bankuti 1201	132	98	129	135	116	112	99
Lerma Rojo 64	103		88	90	89		75
INIA 66	87		73	83			64
Mean	110	85	105	115	101	94	87

Table 76. (Continued)

Cultivar	Sulaimaniya, Iraq	Karaj, Iran	Kabul, Afghanistan	Suwon, Korea	Sapporo, Japan	Mean	
						12 locations	11 locations[a]
Gaines	84	72	81	70	79	74	74
Sturdy	93	76	96	72	88	81	80
Timwin	97	78	98	76	100	86	85
Cappelle Desprez	96	93	99	85			91
San Pastore	106	83	111	78			91
Felix	92	86	107	89	96	93	93
Blueboy	108	83	104	88	97	94	94
Bezostaia	109	87	116	88	103	96	95
Parker	111	89	110	88	92	97	97
Heine VII	105	93	111	89	91	98	98
Arthur	107	84	113	89	103	98	98
Benhur	109	80	122	91	111	100	99
Yung Kwang	112	93	116	94	94	100	101
Triumph 64	116	91	117	84	109	102	101
Yorkstar	108	89	114	93	115	102	101
Gage	122	89	116	89	92	103	104
Riley 67	118	94	116	92	111	104	104
Scout 66	124	94	117	89	97	105	106
Lancer	122	99	113	90	104	107	108
Shawnee	111	94	120	93	110	108	108
Stadler	121	93	126	95	125	110	109
Odin	101	98	119	102	132	112	110
Winalta	126	103	124	92	116	111	111
Purdue 4930A6-28-2-1	113	100	128	97	113	111	111
Fertodi 293	133	115	124	93	100	113	114
Atlas 66	139	106	123	99			115
NB 67730	135	112	127	100	106	115	116
Bankuti 1201	135	114	131	98			118
Lerma Rojo 64	108	83	99				92[b]
INIA 66	93	.	81	... .	. .	.	80[c]
Mean	112	92	113	89	104	101	100

[a] Excluding Sapporo, Japan.
[b] Mean of 8 locations for which Bezostaia averaged 99 cm.
[c] Mean of 6 locations for which Bezostaia averaged 103 cm.

Table 77. Summary of two-year mean "Lodging" (%) for cultivars grown in the "1st and 2nd International Winter Wheat Performance Nurseries," 1969 and 1970.

Cultivar	Rowan Co., N.C., U.S.	Wageningen, Netherlands	Svalof, Sweden	Milano, Italy	Rieti, Italy	Novi Sad, Yugoslavia	Fundulea, Romania	Eskisehir, Turkey	Kabul, Afghanistan	Mean 9 locations
Felix	1.3	0.0	0.0	0.0	0.0	5.0	0.0	0.0	0.0	0.7
Sturdy	0.0	0.6	0.0	6.5	0.0	7.5	0.0	0.0	0.0	1.6
Gaines	2.5	0.6	3.8	0.6	0.0	15.1	0.0	0.0	0.0	2.5
Odin	11.3	0.6	8.1	18.8	0.0	7.5	0.0	2.0	2.5	5.6
Blueboy	3.8	10.6	6.9	0.0	0.0	37.4	0.0	2.8	3.1	7.2
Heine VII	10.0	0.0	19.4	5.0	0.0	35.0	0.6	0.0	0.0	7.8
Cappelle Desprez	12.5	1.3	5.0	13.1	0.0	38.8	0.0	0.0	0.0	7.9
San Pastore	23.8	4.4	2.5	3.8	0.0	48.6	0.0	0.0	10.6	10.4
Bezostaia	6.3	3.1	6.3	14.0	6.3	49.9	2.5	0.0	18.8	11.9
Benhur	18.8	5.0	6.3	27.5	12.5	46.0	2.5	0.6	21.9	15.7
Parker	23.1	3.1	5.0	27.8	24.8	54.8	12.5	0.4	11.9	18.2
Purdue 4930A6-28-2-1	32.5	9.4	23.8	38.8	18.8	61.1	4.4	3.6	9.4	22.4
Yorkstar	37.5	23.8	26.1	23.1	0.0	86.8	10.6	0.0	5.6	23.7
Shawnee	28.8	5.6	11.3	50.6	0.0	74.9	5.6	4.8	33.1	23.9
Arthur	31.3	23.8	16.3	48.8	25.0	59.6	8.1	1.6	3.1	24.2
Timwin	22.5	26.3	25.6	26.3	6.3	78.1	28.1	0.6	26.9	26.7
Stadler	39.4	20.0	26.9	36.9	6.3	80.8	8.1	4.5	48.1	30.1
Yung Kwang	34.4	25.6	33.8	43.8	18.8	78.1	8.1	2.3	30.6	30.6
Gage	41.9	31.9	15.0	46.9	37.5	96.6	12.5	5.3	26.8	34.9
Riley 67	38.8	43.8	27.5	39.4	25.0	96.6	17.5	1.0	27.3	35.2
Atlas 66	53.1	53.8	17.5	48.8	25.0	84.4	23.1	5.4	12.5	36.0
Fertodi 293	38.8	40.6	23.8	50.0	37.5	99.0	30.6	2.4	12.5	37.2
Triumph 64	49.9	46.3	28.8	61.3	43.5	86.9	36.9	5.0	18.8	41.9
Winalta	44.4	53.1	28.8	55.0	31.3	96.6	30.0	8.1	38.1	42.8
Lancer	57.3	50.0	36.3	57.5	50.0	95.5	30.6	4.3	35.6	46.3
Scout 66	58.6	68.8	41.3	67.5	62.3	86.9	37.5	4.4	38.8	51.8
NB 67730	71.9	56.9	35.0	47.5	62.3	96.6	40.6	8.8	53.6	52.6
Bankuti 1201	50.0	67.5	43.8	68.8	62.5	99.0	32.5	6.9	43.1	52.7
Lerma Rojo 64		24.4		23.8	0.0	78.3		1.0	5.0	22.1[a]
INIA 66		0.6		6.3	0.0			0.0	0.0	1.4[b]
Mean	30.1	23.4	18.7	31.9	18.5	64.9	13.7	2.5	17.9	24.2

[a] Mean of 6 locations for which Bezostaia averaged 15.4%.
[b] Mean of 5 locations for which Bezostaia averaged 8.4%.

Table 78. Summary of two-year mean "Shattering" (%) for cultivars grown in the "1st and 2nd International Winter Wheat Performance Nurseries," 1969 and 1970.

Cultivar	Wageningen, Netherlands	Svalof, Sweden	Fundulea, Romania	Mean 3 locations
Sturdy	6.3	0	0.5	2.3
Heine VII	8.8	0	0.1	3.0
Benhur	8.1	0	0.8	3.0
Yorkstar	38.1	2.7	0.7	3.1
Fertodi 293	9.4	0	0.2	3.2
Odin	8.8	0.4	0.3	3.2
Stadler	10.0	0.9	0.4	3.8
Gage	10.6	0	1.6	4.1
NB 67730	11.9	0	0.3	4.1
Scout 66	13.1	0	0.2	4.4
Felix	13.8	0	0.2	4.6
Yung Kwang	13.8	0	0.4	4.7
Bankuti 1201	14.4	0	0.2	4.9
Gaines	15.0	0	0.2	5.1
Lancer	15.6	0.4	0.3	5.4
Parker	15.6	0	0.5	5.4
Cappelle Desprez	16.3	0	0.2	5.5
Triumph 64	16.9	0	0.5	5.8
Shawnee	18.1	0	0.3	6.1
Bezostaia	8.8	0	0.4	6.2
Atlas 66	18.8	1.0	0.4	6.7
Riley 67	22.5	1.1	1.8	8.5
Winalta	26.3	0	0.2	8.8
Timwin	23.8	1.9	1.1	8.9
Blueboy	28.8	1.7	0.3	10.3
Arthur	31.3	2.3	1.2	11.6
San Pastore	30.0	2.7	3.0	11.9
Purdue 4930A6-28-2 1	38.8	2.8	1.2	14.3
Lerma Rojo 64	10.0			10.0[a]
INIA 66	17.5			17.5[a]
Mean	17.4	0.6	0.6	6.2

[a] Mean of Wageningen, Netherlands for which Bezostaia was 8.8%.

Table 79. Summary of two-year mean "Winter Survival" (%) for cultivars grown in the "1st and 2nd International Winter Wheat Performance Nurseries," 1969 and 1970.

Cultivar	Wagen-ingen, Nether-lands	Svalof, Sweden	Milano, Italy	Fundulea, Romania	Ankara, Turkey	Karaj, Iran	Kabul, Afghan-istan	Suwon, Korea	Sapporo, Japan	Mean 9 locations
Stadler	83.1	93.8	96.9	49.5	61.9	95.3	73.8	81.9	84.1	80.0
Benhur	85.0	97.1	92.5	49.5	61.9	98.8	65.6	81.9	82.5	79.4
Triumph 64	87.5	97.3	97.0	49.5	61.9	96.9	70 6	75.6	65.6	78.0
Timwin	78.8	97.1	95.8	48.4	61.9	96 0	71.3	76.9	74.0	77.8
Bezostaia	89.4	96 0	93.5	43.1	61.9	98.1	60 6	86.3	69.0	77.5
Winalta	82.5	97.1	95.5	49.5	61.9	91.4	74.4	86.3	55.6	77 1
Arthur	84.4	95.5	92.6	49.5	61.9	97.1	59.4	82.5	66.9	76.6
Riley 67	81.9	93 8	97.1	49.5	61.9	94.5	61.9	83.1	64.6	76.5
Yorkstar	82.5	92.4	95.0	49.5	61.9	97.3	60.0	84.4	64.4	76.4
Odin	90.0	95.3	95 6	49.5	61.9	87.6	61.9	68.1	64.1	74.9
Scout 66	85.6	98.4	95.4	49.5	61.9	97.8	73.8	83.1	28.8	74.9
Purdue 4930A6-28-2-1	86 3	95.5	91.3	49.5	61.9	97.0	61.9	85.0	41.1	74.7
NB 67730	85.0	98.4	95.6	49.5	61.9	98.5	82.5	82.5	13.5	74.3
Sturdy	86.9	93.0	95.5	49.5	61.9	93.5	61 9	82.5	36.3	73.4
Felix	84.1	86.6	96 1	49.5	61.9	93.1	63.1	65.6	51.5	72.4
Lancer	83.1	96.5	96.0	49.5	61.9	93.8	72.5	80 6	12 6	71.8
Yung Kwang	85.0	92.4	95 5	49.5	61.9	97.6	68.8	85 6	6.5	71.4
Gage	86.9	93.6	95.9	49.5	61.9	95.3	76.3	80.6	2.6	71.4
Gaines	86 9	94.9	96.8	49.5	61.9	96.8	72.5	78.8	4.3	71.4
Fertodi 293	85.6	98.9	94.8	48.4	61 9	98.8	66.3	77.5	8.6	71.2
Parker	87.5	93 6	95.6	49.5	61.9	93 0	63.8	85.6	5.6	70.7
Bankuti 1201	85.6	96 4	94 9	49.5	61.9	98.3	75.5	73.1	0.1	70.6
Shawnee	77.5	96.5	93.1	49.5	61.9	92 8	75 6	75.6	9.3	70.2
Heine VII	90 4	86.8	93 8	40.0	61 9	98.6	58 8	73.1	3.8	67.5
Blueboy	69.4	88.8	94 6	49.5	61.9	87.5	73.8	70 6	11.8	67.5
Cappelle Desprez	86.3	66 8	96 0	49.5	61.9	98.4	73.1	66.9	0	66.5
San Pastore	82.5	67.5	92.9	49.5	61.9	96 8	70.0	65.0	0.6	65.2
Atlas 66	89.4	64.4	94.1	48.4	61.9	98.5	62.5	51.3	0.3	63.4
Lerma Rojo 64	58.8		91.9		40.5	91.3	41.3		0	54.0[a]
INIA 66	46.9		92.3		11.9		23.8		0	35.0[b]
Mean	82.5	91.6	94.9	48.8	59.5	95.5	65.9	77.5	30.9	71.9

[a] Mean of 6 locations for which Bezostaia averaged 78 8%
[b] Mean of 5 locations for which Bezostaia averaged 74.9%.