

UNITED STATES DEPARTMENT OF AGRICULTURE
AGRICULTURAL RESEARCH SERVICE
PLANT SCIENCE RESEARCH DIVISION
in cooperation with
STATE AGRICULTURAL EXPERIMENT STATIONS

COMPARISON OF
WINTER WHEAT VARIETIES GROWN IN COOPERATIVE
NURSERY EXPERIMENTS IN THE
HARD RED WINTER WHEAT REGION
IN 1971

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This is a joint progress report of cooperative investigations underway in the State Agricultural Experiment Stations and the Agricultural Research Service of the U. S. Department of Agriculture containing preliminary data which have not been sufficiently confirmed to justify general release; interpretations may be modified with additional experimentation. Confirmed results will be published through established channels. The report is primarily a tool for use of cooperators and their official staffs and for those persons having direct and special interest in the development of agricultural research programs.

This report includes data furnished by the State Agricultural Experiment Stations as well as by the Agricultural Research Service and was compiled in the Plant Science Research Division, Agricultural Research Service, U. S. Department of Agriculture. The report is not intended for publication and should not be referred to in literature citations nor quoted in publicity or advertising. Use of the data may be granted for certain purposes upon written request to the agency or agencies involved.

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By

V. A. Johnson¹

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(The asterisk denotes U.S.D.A. employees)

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Hard Red Winter Wheat Region
Rust Investigations
Quality Investigations
Hessian Fly Investigations
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Entomology
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Entomology
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Plant Pathology	
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THE 1971 CROP YEAR

The 1971 winter wheat crop (hard and soft winter) totaled 1,163 million bushels, 5 percent above the 1970 crop of 1,110 million. Planted acreage of 38.7 million was slightly down from last year and the acreage harvested for grain, 33.0 million, was the lowest since 1957. However, the yield of 35.2 bushels per harvested acre was a new record high, exceeding 1970, the previous record year, by 1.9 bushels.

Soil moisture was markedly sub-normal during most of the winter wheat crop year in the Southern Plains. Texas and New Mexico were hardest hit and wheat acreage abandonment in these states exceeded 50 percent. Over 28 percent of the planted acreage in Oklahoma also was abandoned. Excellent conditions throughout the season in Colorado, Kansas, and Nebraska are reflected in low acreage abandonment and high yields.

Wheat disease damage in the hard red winter wheat region was minimal.

Winter wheat production statistics for the Plains States are summarized.

<u>State</u>	<u>Seeded acres 1,000</u>	<u>Harvested acres 1,000</u>	<u>Aban- donment %</u>	<u>Yield per harvested acre bu.</u>	<u>Production (bu.) 1,000</u>
New Mexico	347	160	53.9	25.0	4,000
Texas	3,512	1,496	57.4	21.0	31,416
Oklahoma	4,875	3,475	28.7	20.0	69,500
Colorado	2,740	2,484	9.3	28.0	69,552
Kansas	9,593	9,061	5.5	34.5	312,605
Nebraska	2,644	2,558	3.3	42.0	107,436
Montana	1,913	1,827	4.5	30.0	54,810
Wyoming	229	204	10.9	33.0	6,732
South Dakota	641	553	13.7	36.0	19,908
North Dakota	81	68	16.0	30.0	2,040

Data from Crop Production, 1971 Annual Summary. Crop Reporting Board, CrPr 2-1(72), Statistical Reporting Service, USDA, Washington, D. C.

NEW VARIETIES

Norin 16/C.I.12500/2/Bison, C.I.15324 (TX65A1682) was distributed to farmers under the name 'Tamwheat 101' by the Texas Agricultural Experiment Station in 1971. It was tested in the SRPN in 1969 and 1970 during which time it made a regional average yield of 2763 kg/ha (41.2 bu/a) and ranked sixth in the nursery. Its best record was made in Texas and Oklahoma during the two years. Tamwheat 101 is a short-statured stiff straw variety that averages 1 to 2 days later in maturity than Triumph. Foundation seed of Tamwheat 101 in the amount of 500 bushels was distributed to certified growers in Texas and Oklahoma.

GERMPLASM RELEASES

The semi-dwarf Texas experimental variety 391-56-D1 x Tascosa (TX62A4793-7) was assigned the C.I. number 15283 and released publically as germplasm under the designation 'Tamwheat 102'. The variety was tested in the SRPN from 1968 to 1969 and entered in the International Winter Wheat Performance Nursery in 1971. Tamwheat 102 produces large spikes with high seed set but is deficient in test weight. Its maturity is similar to Scout.

The Oklahoma Agricultural Experiment Station and the Agricultural Research Service, USDA, jointly released the following lines as germplasm:

'Teewon', C.I.15320 (OK66C300) selected from the cross TAP48(C.I.13014)/Wichita (F₁ pollen X-rayed)//Wichita/3/Triumph 64. Teewan is homozygous for an induced translocation involving the Agropyron chromosome and is resistant in the seedling and adult plant stages to a broad spectrum of leaf rust races.

C.I.15321 and C.I.15322 (OK65C77-6 and OK65C93-8 respectively). These lines originated from seed of a 44-chromosome, wheat streak mosaic-resistant wheat x Agropyron derivative irradiated with thermal neutrons in 1963. Plants from the irradiated seed were used as males in crosses with Wichita in 1964. Both lines are stable for resistant reaction to streak mosaic and 42-chromosome number.

'Gaucha', C.I.15323, an octoploid triticales obtained from chromosome doubling in F₁ plants from crosses of Chinese Spring common wheat with a greenbug-resistant strain of rye from Argentina. Gaucha is a composite of several doubled hybrids from the cross. It is resistant to presently-known biotypes of the greenbug. It is tall with heavily-pubescent peduncles.

The following materials were released by the Nebraska Experiment Station and the Agricultural Research Service. High protein wheat germplasm, C.I. numbers 13989-13992, 14014-14017, and 14057-14074 inclusively. All of the 26 lines possess genes for high grain protein from Atlas 66 and exhibited field resistance to leaf rust during their testing period in Nebraska. Some are also resistant to soil-borne mosaic.

'Bolal', C.I.13501, selected from the cross Cheyenne/2/Kenya/Mentana made at Lincoln, Nebraska in 1951. The government of Turkey registered and released Bolal for commercial production in 1971. Bolal possesses field resistance to stem rust. It is early-maturing with moderately short straw.

'Belinda', C.I.15231, selected from the cross Ottawa/2*Cheyenne made at Lincoln, Nebraska in 1956. It possesses moderately short stiff straw, excellent winterhardiness, and resistance to stem rust. The Republic of South Africa will release Belinda for commercial production.

DATA REPORTING

Regional cooperators at the Interregional Workers Conference in Stillwater, Oklahoma voted for the use of metric weights and measures in the reporting of regional data beginning in 1971. In anticipation of such action, grain yield summaries have been reported since 1968 in both English and metric units. All data in this report are in metric units only.

Electronic data processing was utilized for the first time. Its implementation necessitated some changes in nursery organization, note-taking, and reporting which were outlined as follows in a memorandum to cooperators in the spring of 1971.

Plan of Experiment (SRPN and NRPN)

Number of entries will not exceed 30 including the long-term check, Kharkof. Plot size is optional. Number of replications - three. Experimental design - randomized complete block.

Agronomic Notes

Grain yield - unit of measurement: kilograms/hectare preferred, grams/plot acceptable. Number of replications: three. Bushel weight - based on composite of grain from all replications. Unit of measurement: kilograms/hectoliter preferred, pounds/bushel acceptable. Date of flowering - date on which approximately 1/2 of spikes in a plot show anther extrusion. Unit of measurement: number of days from January 1. Number of replications: minimum of two. Date ripe (optional) - date on which plot is sufficiently mature for safe harvest. Unit of measurement: number of days from January 1. Number of replications: minimum of two. Plant height - the distance from soil surface to tip of spikes (awns excluded). Unit of measurement: nearest whole centimeter. Number of replications: minimum of two. Lodging - portion of plot that is lodged at maturity. Unit of measurement: 0-9 scale. Number of replications: minimum of two. Shattering - amount of grain lost from spikes. It is suggested that the note be recorded for border rows of plots one week after harvest. Unit of measurement: 0-9 scale. Number of replications: minimum of two. Winter survival - portion of total plants in a plot that are alive in spring. Unit of measurement: 0-9 scale. Number of replications: minimum of two. Frost injury - damage to leaf tissue from low winter temperatures that does not result in death of plants. Unit of measurement: 0-9 scale. Number of replications: minimum of two.

Disease Notes

Leaf and stem rust: Severity - intensity of infection according to modified Cobb scale. Unit of measurement: percent. Number of replications: minimum of two. Response - classify reaction type as follows:

<u>Symbol</u>	<u>Computer Code</u>	<u>Significance</u>
O	0	Useful
VR	1	"
R	2	"
MR	3	"
M	4	Questionable
M	5	"
M	6	"
MS	7	Not useful
S	8	" "
VS	9	" "

Other plant diseases (septoria, black chaff, false black chaff, etc.) unit of measurement: 0-9 scale. Number of replications: minimum of two. Loose smut and bunt: unit of measurement: 0-9 scale. Number of replications: minimum of two. Insect notes: unit of measurement: 0-9 scale. Number of replications: minimum of two.

General notes to be included with a copy of the data: (1) Station name and location; (2) Cooperator; (3) Date of harvest; (4) Area harvested for yield; (5) Irrigated or dryland; (6) Summary statement (statement of weather, soil moisture, diseases, insects, etc., affecting nursery during fall, winter, and spring growing seasons).

Compliance with the requirements of the new system was good. Nine cooperators reported yields in kg/ha; 25 in grams/plot; and only 3 in bu or lb/acre. Eight cooperators reported test weights in kg/hl and 29 in lb/bu. Plant height was reported in cm by 27 cooperators and in inches by only 9 cooperators. Hopefully, all data from all test sites eventually will be reported in metric units.

Rapid conversions from English to the metric system are:

	<u>Approximate</u>	<u>Exact</u>
15 bu/a	= 1000 kg/ha	1008 kg/ha
60 lb/bu	= 77 kg/hl	77.36 kg/hl
1 inch	= 2.5 centimeters	2.54 centimeters

SOUTHERN REGIONAL PERFORMANCE NURSERY

Thirty-two varieties were evaluated in 1971 of which 15 were station-developed experimentals entered in the nursery for the first time. Twenty-nine replicated yield nurseries were grown at 27 test sites in 11 states. Observation plantings were made at Tetonia and Aberdeen, Idaho and at the Northern Grain Insects Laboratory at Brookings, South Dakota. Seed of each entry was provided to D. V. McVey for seedling reaction to stem rust, to L. E. Browder for seedling reaction to leaf rust, and to R. L. Gallun for hessian fly tests. All entries were included in the Southern Materials Section of the Uniform Winterhardness Nursery. No data were received from South Dakota where the seed arrived too late for planting at Highmore and high winds in the fall and winter at Presho destroyed the nursery.

Pedigrees and C.I. or Selection Numbers of entries are listed. Data from nursery sites appear in table 1. Rust reaction data from the Cooperative Rust Laboratory, St. Paul, Minnesota are contained in table 2.

Entry No.	Variety or Pedigree	C.I. or Sel. No.	Source
1	Kharkof	1442	Check
2	Early Blackhull	8856	"
3	Comanche	11673	"
4	Scout 66	13996	Nebr.
5	Pn/Cnn/3/Pn/2/Ky58/4/Cnn	NB66403	"
6	Ky58/2/Nth/3/Hope/2*Tk/4/Cnn/5/Pk (Centurk)	15075	"
7*	Tmp64/5/Wi/4/(Wi/3/T.sp./Ae/2/Pn) F ₁ x-ray	OK66C3003	Okla.
8*	391-56-D8/Tascosa	TX62A2782-4-2	Texas
9*	391-56-D8/Kaw	TX62A2522-1-4	"
10*	391-56-D8/Kaw	TX62A2522-8-2	"
11*	391-56-D8/Kaw	TX65A1503-1	"
12*	5*Scout/Agent	KS7016	Kans.
13	Scout/C.I.12995	CO653033	Colo.
14*	Ndd63/CO652643/Guide	CO693494	"
15*	Sn64/Tpr 2/CO652961	CO695552	"
16*	Ptc/Y54/Tzp/Nar/Tpr/Wrr	CO696753	"
17*	Ptc/Y54/Tzp/Nar/Tpr/2961	CO696317	"
18	Scoutland (NB65482)	14075	Nebr.
19	Scout Selection (Eagle)	15068	Kans.
20	3*Parker/Bison (KS64H2815)	KS6623	"
21	Palo Duro	14584	DeKalb
22	Satanta	14582	"
23	Chanute	14581	"
24	Yukon	14583	"
25*	Scout/C.I.12995	NB68435	Nebr.
26*	Sut/4/Ky58/Nth/2/Cnn/Tm/M1/Hope/3/ Pn/Cnn	NB68437	"
27*	Bezostala 1	15158	IWWPN
28*	Pronto	---	DeKalb
29*	391-56-D8/Triumph	TX65A1626	Texas
30*	1826-1/Parker	TX65A1268	"
31	391-56-D8/Tascosa	TX62A2712-6	"
32*	Agent/Tascosa	TX63C92	"

*New in 1971

Test Site Information

Denton--Nursery seeded on October 19 in a good seedbed. Precipitation below average for remainder of fall period. 224 kg/ha of 0-20-0 applied at seeding time and 224 kg/ha of NH_4NO_3 applied in March. Mild damage from greenbugs during January and the nursery sprayed for control. Nursery condition in April was poor due to lack of precipitation. Showers in late April and May were beneficial. Total precipitation from October, 1970 through May, 1971 was 276 millimeters compared to a normal of 559 millimeters. C0693494 and C0696753 were damaged by frost during heading. Light hail on May 23 caused mild shattering of most nursery entries.

Chillicothe--Only 202 millimeters of precipitation fell during the crop year. Average for Chillicothe is 510 millimeters. The nursery was a near-failure as was the commercial wheat in the area. Greenbug populations which were present throughout the winter exploded in March and caused heavy damage before control measures were effective.

Bushland--Precipitation for the fall, winter, and spring was below normal and insufficient for dryland wheat production. The dryland nursery was not harvested. The irrigated nursery received one winter and four spring irrigations, each approximately 89 millimeters, and 179 kg/ha of nitrogen. Diseases and insects were not a factor in performance of entries.

Clovis--Dryland nursery seeded September 11. Emerged September 18. 90 mm of precipitation received in the last half of September and only 87 mm more during the remainder of the crop year. Sprayed for greenbugs on March 23.

Irrigated nursery seeded October 1 and emerged October 11. Received 112 kg/ha of nitrogen. Irrigated six times.

Stillwater--Favorable moisture until March when drought stress became evident. No diseases or insects of consequence. There was no winterkilling or lodging. An excellent nursery!

Lahoma--This is a new station in north-central Oklahoma. There was good growth in the fall and early winter but severe drought stress developed in early spring which reduced yields. Damage from Cerco-sporella foot rot was observed. Light leaf rust and stem rust were noted.

Goodwell--An irrigated nursery was grown. There was good growth in the fall and winter. Diseases and insects did not affect performance. Despite irrigation, hot dry winds during the spring probably reduced yields.

Manhattan--Nursery seeded October 3 in excellent seedbed. Fall growth was slow. January was the coldest of record but snow cover provided protection to the nursery and there was no winter damage. Spring was cool and dry. The cool weather continued until maturity with rain after blooming. Harvest was delayed by one week approximately. There were no major disease problems. Overall, the conditions for wheat were excellent. Some inter-plot variation noted. Bunt readings were made on two replications from inoculated seed. The level of infection was very high.

Hays--Conditions near-ideal from fall seeding to May. On May 20 the nursery was heavily damaged by hail with severity ranging from 25 to 75 percent loss. The Texas semi-dwarfs withstood the hail best while the stiff-strawed Bezostaia was most heavily damaged.

Garden City--The nursery planted September 21. There was only limited fall and winter growth. Cool weather in the spring promoted full development. A late frost on May 12 occurred but damage was minimal. Occasional plants infected with wheat streak mosaic were observed.

Colby--Generally ideal weather conditions throughout crop year. Soil moisture slightly above normal at seeding time but fall growth somewhat subnormal due to cool temperatures. There was no winterkilling. March precipitation was average but in April it was above-average. Cool weather persisted throughout the spring. A week of high temperature in late June hastened ripening. No insect or disease problems were encountered.

Colorado Stations--Production conditions not reported. Several of the nursery sites were visited prior to harvest by the writer. At Ft. Collins an excellent nursery was damaged by hail during the spring. The recovery was excellent although trapped heads and broken culms were evident. Reported stem rust at Ft. Collins developed from artificial inoculations in experimental area.

At Springfield the nursery was best in several years. Head size was small but all varieties tillered heavily during the cool spring. There were no diseases. Moisture stress developed during grain maturation.

The yield potential at Burlington and Akron was very high until precipitation stopped in spring. Ideal winter and early spring conditions favored lush growth and heavy tillering. The subsequent dry weather resulted in shrivelled grain and sharply reduced yields.

Sufficient late spring and early summer precipitation was received at Julesburg to allow normal maturation of the wheat. Yields and test weights were substantially higher than at Akron and Burlington.

Grain yields and test weights in a dryland nursery at Yellow Jacket were somewhat below normal.

Mead--Fall, winter, and spring conditions excellent. A hot, dry spell in June hastened ripening and probably reduced yields. Light infections of both leaf and stem rust were recorded. Yields were high but test weights were a little below normal.

Clay Center--Stands were somewhat variable. Conditions were similar to those at Mead although leaf and stem rust were too light for readings. Yields were lower than at Mead.

North Platte--Ideal conditions existed throughout the crop year. There were no diseases of consequence. Yields were very high and test weights about normal.

Sidney--The yield potential here probably was the highest in Nebraska. Heat and moisture stress after anthesis probably reduced yields by 25 percent or more. There were no diseases of importance.

Alliance--Severe wind erosion during the winter forced abandonment of the nursery.

Highmore--The nursery seed was delayed enroute and arrived too late for planting.

Presho--The nursery was seeded at the normal time. High winds during late fall produced severe erosion in which roots were exposed or plants buried in the nursery area. Nursery abandoned.

Columbia--The season was wet until mid-March after which there was no precipitation through April and minimal amounts in May. There was little snow cover during the winter but no killing was detected. Diseases did not develop until mid-June. Leaf rust first noted on June 2 and stem rust one week later. Stem became heavy on late susceptible varieties. Septoria did not develop until June rains. Overall conditions were excellent and yields and test weights were very high.

Ames--Nursery abandoned for yield purposes due to heavy winterkill.

Urbana--Fall moisture adequate and emergence uniform for all entries. Winterkilling more severe than normal and some less hardy varieties heavily damaged. Lack of snow cover a major factor. Spring and early summer conditions ideal. Dry weather prevailed during maturation. Diseases and insects were inconsequential.

Aberdeen--Observation plots grown. Residual Treflan in some plots stunted plants. There were no diseases reported.

Tetonia--Observation plots grown. Stands were spotty and data were not reported.

Lind--Environmental conditions not reported. Yield data highly variable and with many missing plots. Not utilized in regional mean determinations.

St. Paul--Entries in the SRPN were seeded as a part of the Southern Materials section of the Uniform Winterhardiness Nursery. Field reactions to leaf and stem rust were recorded. Also, the entries were tested in the greenhouse for seedling reaction to 3 isolates of stem rust race 32, single isolates of races 15, 15B-2, and 113, and 2 isolates each of races 31 and 151. The rust data were provided by D. McVey of the Cooperative Rust Laboratory.

Table 1.--Yield and other data for varieties grown in the Southern Regional Performance Nursery in 24 trials in the hard red winter wheat region in 1971.

Denton, Texas
Three replications

C.I. or Sel. No.	: Yield	: Volume weight	: Days to heading	: Plant height	: Shat.	: Leaf rust Sev.
	kg/ha	kg/hl		cm	0-9	%
CO696317	3903	78.7	88	88	0	50
CO695552	3426	79.3	86	90	0	20
CI15068	3401	78.7	94	90	0	50
CI13996	3384	79.3	95	96	2	60
TX63C92	3307	78.0	87	87	1	0
KS7016	3286	79.3	96	95	1	0
CI14584	3279	80.0	92	84	1	37
CI14078	3225	80.0	87	76	0	0
KS6623	3160	80.6	93	89	1	50
TX62A2712-6	3146	79.3	94	78	0	40
NB66403	3139	78.0	93	93	3	40
CI14075	3121	78.7	93	93	2	5
TX62A2782-4-2	3052	81.3	95	82	0	15
TX65A1503-1	3038	80.0	98	74	0	35
NB68435	3038	79.3	96	103	1	45
TX62A2522-8-2	3031	78.7	88	65	0	15
CI14582	3017	80.6	93	81	0	30
TX65A1268	3010	78.7	86	61	0	0
CI14581	3006	79.3	94	80	0	25
CI15158	2995	78.7	93	81	0	1
CO653033	2988	80.0	96	105	2	25
NB68437	2981	77.4	96	78	1	40
CI15075	2859	79.3	93	88	2	10
TX62A2522-1-4	2859	81.3	99	74	0	60
CI14583	2834	80.0	93	82	0	30
OK66C3003	2758	78.7	92	84	0	0
CO696753	2726	77.4	80	76	0	15
CI 1442	2708	78.7	100	108	1	30
TX65A1626	2557	74.8	89	70	0	0
CI 8856	2550	78.7	90	91	1	30
CI11673	2540	80.0	97	100	2	30
CO693494	2012	77.4	77	73	2	20

L.S.D. = 467, C.V. = 9.3%

Chillicothe, Texas
Three replications

C.I. or Sel. No.	: Yield kg/ha	: Days to heading	: Days to ripe	: Plant Height cm
KS7016	844	124	155	45
CI15068	781	120	151	48
CI15158	773	117	147	48
NB68435	754	122	154	50
CO653033	732	123	155	50
CI13996	710	125	155	45
CO696753	582	109	142	40
CI 1442	555	130	163	48
TX65A1268	555	112	144	38
KS6623	533	118	148	43
NB68437	533	122	153	40
CI14075	528	123	155	45
TX62A2782-4-2	484	128	160	38
NB66403	459	128	161	43
TX65A1503-1	456	127	158	38
TX62A2522-1-4	454	128	159	40
CI14581	449	124	156	38
OK66C3003	416	121	152	38
CI15075	403	124	155	40
TX63C92	383	121	153	48
CO696317	383	120	151	45
CI14078	358	112	144	35
CI14584	356	122	152	38
CI 8856	355	120	150	48
TX65A1626	340	113	145	38
CI11673	320	130	162	45
CI14582	317	120	150	35
CO695552	309	119	145	43
TX62A2712-6	293	126	157	38
CO693494	281	112	144	38
CI14583	271	123	153	35
TX62A2522-8-2	246	121	152	35

L.S.D. = 280, C.V. = 35.3%

Bushland, Texas
Three replications, irrigated

C.I. or Sel. No.	: Yield	Volume : Weight	Days to : heading	Plant : Height	Surv.
	kg/ha	kg/hl		cm	0-9
TX65A1268	6403	78.2	120	78	7
CO696753	6264	79.0	119	86	7
CI14581	6060	81.9	121	90	6
TX65A1503-1	5991	78.2	126	91	7
CI14582	5811	82.1	121	90	5
TX62A2712-6	5802	79.7	122	88	7
TX62A2522-1-4	5719	78.4	125	88	9
CI14584	5654	81.7	121	93	6
CI14583	5641	80.8	121	88	4
CI14078	5610	82.8	119	96	6
NB68437	5593	78.4	125	91	8
CI15158	5515	78.6	127	91	8
CO696317	5432	76.3	121	93	5
TX62A2782-4-2	5410	80.2	124	88	7
CI13996	5396	79.5	122	97	7
CI15068	5378	79.1	122	93	7
TX65A1626	5167	77.7	120	83	7
TX63C92	5143	78.4	119	92	7
CO695552	5048	79.7	120	94	6
OK66C3003	5012	79.9	122	93	7
CI15075	4876	77.5	126	94	8
TX62A2522-8-2	4833	78.8	118	83	7
NB68435	4738	77.0	126	97	6
KS6623	4734	78.8	125	100	7
NB66403	4566	76.2	125	99	8
KS7016	4548	77.2	126	98	7
CI14075	4478	78.6	121	97	6
CO653033	3973	76.2	127	105	6
CI11673	3870	74.6	127	108	7
CO693494	3780	76.4	120	95	5
CI 8856	3704	78.6	119	99	7
CI 1442	3058	75.5	129	108	8

L.S.D. = 576, C.V. = 6.8%

Clovis, New Mexico
Three replications, dryland

C. I. or Sel. No.	: Yield	: Volume weight	: Days to heading	: Plant height
	kg/ha	kg/hl		cm
CI14581	834	0.0	123	39
NB66403	767	0.0	129	39
CI14075	740	0.0	123	41
TX63092	700	0.0	123	38
CI15158	633	0.0	131	34
CO696317	605	0.0	126	34
CI15075	592	0.0	131	34
TX65A1503-1	592	0.0	130	36
CO653033	592	0.0	130	39
CI13996	578	0.0	128	40
TX62A2712-6	578	0.0	130	37
TX65A1626	565	0.0	125	34
NB68437	565	0.0	129	28
KS7016	538	0.0	130	35
NB68435	538	0.0	129	36
CI 1442	511	0.0	134	37
CI14078	511	0.0	122	38
CI 8856	498	0.0	131	36
CO696753	498	0.0	120	36
CI11673	471	0.0	132	37
TX62A2782-4-2	471	0.0	131	36
CO693494	471	0.0	121	36
KS6623	458	0.0	131	33
CO695552	457	0.0	125	35
CI14582	404	0.0	123	32
CI14583	390	0.0	128	34
CI14584	377	0.0	129	31
TX62A2522-8-2	364	0.0	128	33
TX65A1268	358	0.0	126	29
CI15068	309	0.0	130	28
Ok66C3003	309	0.0	127	36
TX62A2522-1-4	188	0.0	133	30

L.S.D. = 272, C.V. = 31.7%

Clovis, New Mexico
Three replications, irrigated

C. I. or Sel. No.	: Yield	: Volume Weight	: Days to heading	: Plant Height	: Lodging
	kg/ha	kg/hl		cm	0-9
CO696753	5250	79.8	120	88	0
NB66403	4886	79.2	129	101	0
CI15075	4685	80.5	128	95	0
CI14584	4684	81.5	123	86	0
CI14583	4617	81.7	123	85	0
CI15158	4617	80.0	130	90	0
OK66C3003	4590	81.0	127	94	0
TX65A1503-1	4550	79.6	127	85	0
CI14582	4509	81.9	122	83	0
CI13996	4482	80.5	126	100	1
CI15068	4456	78.6	126	90	0
TX62A2522-8-2	4388	80.0	120	77	0
TX62A2712-6	4361	80.1	125	78	0
KS7016	4361	79.3	129	101	0
CI14078	4321	82.2	125	87	1
TX62A2522-1-4	4240	79.8	128	82	0
TX65A1626	4199	77.5	124	77	0
TX62A2782-4-2	4186	81.4	127	86	0
CI 1442	4159	77.9	135	110	0
NB68435	4159	79.3	128	101	0
TX63C92	4119	79.1	128	89	0
CO695552	4106	80.6	121	88	0
CI14581	4079	80.8	125	82	0
TX65A1268	4078	79.3	126	70	0
CI11673	4011	78.6	129	107	0
NB68437	3904	78.3	128	92	0
CI 8856	3607	76.4	129	101	0
CO653033	3553	79.0	129	102	0
CI14075	3526	79.5	126	90	0
CO696317	3432	77.9	126	80	0
KS6623	3205	80.5	127	97	0
CO693494	3109	78.0	125	88	0

L.S.D. = 935, C.V. = 13.4%

Stillwater, Oklahoma
Three replications

C. I. or Sel. No.	: Yield kg/ha	: Volume weight kg/hl	: Days to heading	: Plant height cm	: Leaf Sev. %	: rust Resp. 0-9
CI15068	3724	78.8	116	80	1	8
CO693494	3639	79.4	110	69	2	8
CO696753	3614	80.2	110	68	1	8
CI14584	3609	81.2	113	75	1	8
TX63C92	3558	78.8	114	82	0	0
CI14582	3556	81.7	114	75	1	8
CO695552	3538	79.4	113	82	1	5
CI13996	3497	79.7	115	83	1	8
CI14581	3490	81.0	115	75	1	8
NB66403	3462	79.3	117	83	1	8
TX65A1268	3457	78.8	111	55	1	8
CI15075	3439	79.5	117	78	1	3
KS7016	3376	78.9	118	76	0	0
CO696317	3363	76.3	117	75	1	8
NB68435	3332	77.6	117	81	1	8
NB68437	3314	79.5	117	73	1	8
TX65A1503-1	3275	75.9	120	67	1	8
CI14583	3269	82.3	114	73	1	8
CO653033	3269	77.9	118	83	1	7
TX62A2522-1-4	3264	77.0	120	66	1	8
TX62A2782-4-2	3262	79.2	115	70	1	8
KS6623	3242	80.3	117	83	1	3
CI15158	3219	80.7	115	69	1	2
CI11673	3199	79.4	119	92	1	7
OK66C3003	3161	80.5	113	71	0	0
CI14075	3125	80.2	115	84	1	8
CI 8856	3089	81.4	112	86	1	8
CI14078	3085	82.8	110	68	1	8
TX62A2522-8-2	3071	79.0	113	64	1	5
TX65A1626	3065	78.9	110	59	1	8
TX62A2712-6	2982	79.3	116	73	1	8
CI 1442	2777	78.6	124	87	1	8

L.S.D. = 613, C.V. = 8.5%

Lahoma, Oklahoma
Three replications

C. I. or Sel. No.	: Yield kg/ha	: Volume : weight : kg/hl	: Plant height cm
CO696753	2914	76.2	73
CI15068	2555	74.0	78
CI15158	2522	77.0	71
CI14078	2499	78.8	67
CO695552	2488	74.9	83
CO696317	2421	73.0	75
KS6623	2354	75.9	82
NB68435	2331	70.8	80
CI13996	2309	72.5	82
CI14075	2298	74.9	81
CI14582	2298	77.4	74
CI14581	2242	77.6	77
NB66403	2219	70.9	83
TX65A1268	2208	74.7	62
TX65A1626	2174	72.7	62
KS7016	2141	71.4	77
TX62A2522-8-2	2107	74.9	68
CO693494	2107	75.7	70
NB68437	2096	72.3	68
CI14583	2017	75.9	76
CI 8856	1984	76.1	84
CI11673	1984	70.7	86
TX62A2782-4-2	1950	74.4	68
TX63C92	1950	71.3	79
TX62A2522-1-4	1939	69.1	67
CI14584	1928	75.4	74
OK66C3003	1905	74.3	74
CO653033	1894	69.1	82
TX62A2712-6	1861	74.9	73
TX65A1503-1	1793	69.4	68
CI15075	1782	73.8	71
CI 1442	1412	69.8	80

L.S.D. = 292, C.V. = 8.2%

Goodwell, Oklahoma
Three replications

C. I. or sel. No.	: Yield	: Volume weight	: Days to heading	: Plant height	: Lodging
	kg/ha	kg/hl		cm	0-9
TX65A1268	4630	78.9	122	72	0
CI15158	4195	79.7	129	86	0
NB68435	3811	78.3	128	89	0
TX65A1503-1	3769	79.7	127	73	0
CI13996	3760	79.4	123	84	1
CO695552	3717	78.9	123	88	1
CI14581	3715	79.5	124	83	1
TX62A2522-8-2	3654	77.2	123	69	0
CI 8856	3618	80.6	123	89	2
CI14078	3591	80.6	122	79	0
TX62A2782-4-2	3560	80.7	129	75	0
TX62A2712-6	3545	78.5	124	75	0
CI15068	3529	79.2	127	77	0
KS6623	3529	80.3	125	85	0
CI15075	3515	77.6	129	82	0
CI11673	3513	77.1	127	95	0
TX65A1626	3489	76.1	122	71	0
NB68437	3455	76.8	125	80	0
KS7016	3345	78.6	130	85	0
TX62A2522-1-4	3233	78.6	126	70	0
NB66403	3195	77.6	129	86	0
CO696317	3015	76.5	128	70	0
CI14583	3011	78.4	123	79	0
CI14582	2993	78.4	123	76	1
CO693494	2979	77.1	125	84	0
TX63C92	2973	77.2	125	80	0
CI14075	2923	77.4	124	76	0
OK66C3003	2814	76.2	124	85	1
CO653033	2713	78.0	130	84	0
CO696753	2645	74.1	121	72	0
CI14584	2495	77.9	124	77	0
CI 1442	1851	78.0	137	88	0

L.S.D. = 867, C.V. = 15.6%

Manhattan, Kansas
Three replications

C. I. or Sel. No.	: Yield	: Volume weight	: Days to heading	: Plant height
	kg/ha	kg/hl		cm
CO695552	4509	80.6	134	103
TX63C92	4267	79.3	136	99
CI15075	4177	79.3	136	98
CO696317	4147	79.3	136	92
TX62A2522-1-4	4061	80.0	137	79
NB66403	4011	77.8	137	102
NB68435	3990	78.0	137	101
CO693494	3985	78.9	133	99
CI15158	3934	79.3	137	91
TX62A2782-4-2	3878	80.4	135	87
TX65A1503-1	3858	79.3	137	76
KS7016	3828	77.9	137	102
CI14581	3819	81.1	134	87
CI14583	3809	79.7	135	95
CO653033	3802	78.8	137	106
KS6623	3750	80.7	137	99
CO696753	3749	79.1	133	83
CI14075	3699	78.5	135	101
NB68437	3686	78.9	135	91
CI11673	3673	78.9	137	107
CI15068	3669	79.2	136	95
TX62A2522-8-2	3653	78.9	133	81
CI14584	3649	81.0	135	92
CI 1442	3626	78.6	142	118
TX62A2712-6	3589	79.4	136	83
CI13996	3533	79.6	135	103
TX65A1268	3492	77.3	133	76
CI14582	3434	79.8	134	93
CI 8856	3411	79.3	134	113
OK66C3003	3276	79.8	133	97
TX65A1626	3247	77.6	133	77
CI14078	3149	81.2	133	93

L.S.D. = 566, C.V. = 9.1%

Hays, Kansas
Three replications

C. I. or Sel. No.	: Yield kg/ha	: Volume weight kg/hl	: Days to heading	: Plant height cm	: Shat 0-9
CO696317	2367	78.8	136	86	0
TX65A1503-1	2306	77.1	138	76	1
CI14582	2113	82.6	134	88	0
TX65A1268	2064	78.2	134	76	1
TX62A2712-6	2008	78.5	137	82	0
TX62A2522-8-2	1983	77.9	133	84	1
TX62A2522-1-4	1941	77.7	138	75	2
CO696753	1921	79.0	129	82	0
CI14584	1820	80.3	134	90	0
CI14583	1815	80.1	135	76	0
TX65A1626	1802	76.2	133	82	0
TX62A2782-4-2	1562	78.3	136	77	1
NB68435	1560	78.1	138	88	2
CI14581	1535	80.3	135	82	0
NB68437	1502	77.5	137	84	0
CO695552	1479	79.9	133	91	1
TX63C92	1457	78.0	136	88	0
CI14078	1443	81.6	131	93	0
CI15068	1443	78.6	137	83	0
CI13996	1306	79.3	137	88	1
OK66C3003	1302	78.6	136	91	0
KS7016	1293	78.0	139	88	1
KS6623	1244	79.3	137	87	2
CI15075	1156	78.1	138	78	1
CI11673	1138	76.6	139	90	1
CI 8856	1123	78.6	136	95	1
CI14075	1073	79.0	136	92	1
NB66403	1040	76.8	139	83	4
CO653033	997	77.2	139	87	2
CO693494	973	77.0	133	89	5
CI 1442	932	76.5	143	91	5
CI15158	811	76.6	138	82	0

L.S.D. = 384, C.V. = 9.5%

Garden City, Kansas
Three replications

C. I. or Sel. No.	: Yield kg/ha	: Volume weight kg/hl	: Days to heading	: Plant height cm
NB66403	3316	81.5	137	79
NB68435	3023	82.6	136	81
CI15075	3013	81.1	136	76
CI13996	2920	81.7	135	80
CI15158	2877	80.4	137	81
KS7016	2863	81.3	138	79
TX65A1626	2777	79.3	132	68
TX65A1268	2765	78.9	133	62
OK66C3003	2756	81.7	134	76
NB68437	2756	80.9	133	68
CI15068	2717	81.9	134	73
CO653033	2647	80.2	138	79
TX62A2522-1-4	2638	81.7	136	64
CI 8856	2590	80.4	135	82
CI14078	2539	82.8	133	74
TX62A2712-6	2536	80.4	137	69
TX65A1503-1	2524	81.7	137	63
CI14075	2522	80.4	134	77
KS6623	2520	81.5	136	74
CO696753	2511	81.7	132	70
CI 1442	2476	73.3	138	78
CI11673	2469	80.6	134	81
CO695552	2437	81.3	133	78
CI14584	2418	81.7	134	72
TX63C92	2328	81.5	137	75
TX62A2522-8-2	2300	79.8	132	68
CO696317	2293	81.3	136	72
CI14581	2289	83.4	134	74
CI14582	2265	83.6	133	70
CI14583	2240	83.2	134	73
CO693494	2203	78.9	134	68
TX62A2782-4-2	2115	81.7	136	68

L.S.D. = 584, C.V. = 13.6%

Colby, Kansas
Three replications

C. I. or Sel. No.	: Yield	Volume : weight	Days to : heading	Plant : height	: Shat.
	kg/ha	kg/hl		cm	0-9
CI14583	3923	80.0	145	92	0
CO696753	3906	78.0	142	83	0
CO696317	3904	77.4	145	88	0
CI14582	3815	80.6	145	91	0
CI14581	3794	80.6	145	90	0
CI15075	3794	76.8	149	102	0
CI13996	3788	78.0	147	97	0
TX65A1268	3756	74.8	147	80	0
NB68435	3738	76.8	150	109	1
TX62A2522-8-2	3729	78.0	144	83	0
TX62A2522-1-4	3713	78.0	148	85	0
TX62A2782-4-2	3678	80.6	147	90	0
CO695552	3613	78.7	145	99	0
TX62A2712-6	3586	78.0	148	86	1
NB66403	3584	75.5	150	105	1
TX65A1626	3567	76.8	146	82	0
TX65A1503-1	3552	77.4	150	85	0
CI14075	3529	78.7	147	99	0
CI14078	3525	81.3	145	96	0
CI15068	3523	76.8	147	94	0
CI14584	3500	80.6	145	89	0
NB68437	3456	78.0	147	91	0
OK66C3003	3434	78.7	148	94	0
TX63C92	3384	77.4	145	98	1
KS6623	3375	79.3	150	105	0
CI15158	3298	78.7	150	96	0
CO693494	3298	73.5	145	93	3
KS7016	3221	76.8	149	106	0
CO653033	3146	76.8	150	108	1
CI11673	3044	75.5	151	107	0
CI 8856	2915	78.7	144	105	1
CI 1442	2623	75.5	156	113	2

L.S.D. = 338, C.V. 5.8%

Fort Collins, Colorado
Three replications

C. I. or Sel. No.	: Yield	: Volume weight	: Days to heading	: Plant height	: Stem rust Sev.
	kg/ha	kg/hl		cm	%
CO696317	7646	80.6	162	99	3
CO693494	6834	78.9	162	107	7
TX62A2712-6	6534	80.9	160	89	50
TX63C92	6458	80.5	160	109	7
NB66403	6421	78.6	161	114	5
TX65A1503-1	6377	80.5	161	86	60
CO696753	6327	79.9	160	89	5
CI15075	6287	77.4	162	102	5
TX62A2522-1-4	6058	80.1	161	86	65
TX65A1268	5812	77.7	161	79	55
OK66C3003	5771	80.6	163	99	12
KS7016	5718	77.8	162	102	5
CO653033	5699	79.2	162	114	10
NB68437	5686	77.1	161	84	7
NB68435	5596	80.6	160	94	12
TX62A2782-4-2	5408	80.9	161	86	27
CI14584	5359	81.5	161	94	45
TX65A1626	5296	78.3	160	86	32
CO695552	5296	79.9	160	94	32
CI14583	5179	81.3	161	89	27
TX62A2522-8-2	5179	79.3	161	84	27
KS6623	5157	80.8	162	109	10
CI15068	5144	78.9	160	99	15
CI14581	5116	81.5	160	86	55
CI14582	4977	81.4	160	89	50
CI13996	4847	78.9	161	102	20
CI 1442	4794	76.8	167	102	60
CI14078	4744	81.4	160	91	35
CI14075	4650	78.2	161	99	10
CI11673	4632	77.8	162	107	37
CI 8856	4610	79.7	160	107	45
CI15158	4394	77.4	163	86	50

L.S.D. = 844, C.V. = 9.1%

Springfield, Colorado
Three replications

C. I. or Sel. No.	: Yield	: Volume weight	: Days to heading	: Days to ripe	: Plant height
	kg/ha	kg/hl			cm
CI14582	3656	76.8	130	171	66
CI15075	3555	73.7	138	174	69
TX65A1268	3541	72.8	130	172	57
CI15068	3521	77.7	133	173	64
NB66403	3478	73.5	137	175	74
NB68435	3464	76.6	127	170	70
CI14584	3392	75.7	130	170	66
TX62A2712-6	3376	74.6	129	170	63
CI14581	3362	77.4	129	172	62
CO695552	3356	77.1	129	172	69
CI13996	3355	76.2	131	172	74
NB68437	3330	74.0	132	174	59
OK66C3003	3292	76.1	132	172	70
CI14078	3284	76.8	126	167	66
CI14583	3244	76.0	128	170	63
CO696753	3235	76.4	125	167	63
CI 8856	3215	77.9	127	168	71
TX65A1503-1	3191	74.9	135	174	58
TX62A2522-8-2	3182	76.0	126	169	57
CO696317	3175	71.1	131	171	61
CI11673	3169	75.3	135	174	72
KS6623	3131	76.5	136	174	66
TX63C92	3115	71.6	131	171	68
KS7016	3084	75.6	136	174	67
CI14075	3076	78.0	132	172	67
CI15158	3048	75.2	140	176	62
TX62A2522-1-4	3040	76.8	135	174	57
CO693494	2996	76.1	130	172	67
TX62A2782-4-2	2988	76.6	131	173	61
CO653033	2851	74.9	137	174	73
TX65A1626	2821	74.6	128	168	56
CI 1442	2521	73.3	143	177	73

L.S.D. = 412, C.V. = 7.7%

Burlington, Colorado
Three replications

C.I. or Sel. No.	: Yield	: Volume weight	: Plant height
	kg/ha	kg/hl	cm
CI14581	3042	77.0	92
TX62A2522-8-2	2965	71.1	84
CO696753	2927	70.3	87
TX62A2522-1-4	2806	69.8	84
TX62A2712-6	2799	71.3	86
CI14582	2786	74.8	91
CO695552	2778	70.2	102
TX65A1626	2765	68.1	82
CI14583	2729	74.6	95
TX65A1503-1	2668	68.5	79
TX65A1268	2662	68.4	79
NB68437	2634	70.4	97
CO693494	2597	66.6	102
CI15068	2541	70.4	102
CI15158	2535	68.4	96
CI14075	2418	70.0	100
TX62A2782-4-2	2395	71.2	87
KS6623	2392	71.3	108
CI15075	2379	67.6	103
NB68435	2368	68.2	104
CI14584	2348	71.3	96
KS7016	2266	67.1	106
CO653033	2217	67.6	105
CO696317	2121	65.8	84
CI11673	2113	68.4	115
CI13996	2071	69.1	101
TX63C92	2066	63.5	99
CI14078	2025	72.4	106
OK66C3003	1918	66.3	100
CI 8856	1910	69.0	107
NB66403	1756	58.4	105
CI 1442	1718	65.5	102

L.S.D. = 536, C.V. = 13.2%

Akron, Colorado
Three replications

C. I. or Sel. No.	: Yield kg/ha	: Volume weight kg/hl	: Days to heading	: Plant height cm
CI13996	2596	69.3	156	102
CO696753	2539	60.9	155	76
CI15158	2513	71.6	160	81
CO695552	2415	66.4	155	97
CI14582	2322	64.6	154	86
NB68435	2308	65.7	155	91
TX62A2522-8-2	2307	65.8	154	71
TX65A1626	2294	67.1	154	66
CI14075	2290	68.6	155	97
CO653033	2272	67.6	156	102
CI14584	2271	63.2	155	91
CI11673	2227	69.3	157	97
CI14581	2208	65.8	155	86
TX63C92	2191	63.2	155	91
CI 8856	2181	70.9	154	102
OK66C3003	2171	67.6	156	97
NB66403	2163	65.1	157	97
TX62A2712-6	2156	61.8	154	81
KS6623	2116	68.5	156	97
CO696317	2115	59.9	158	76
KS7016	2095	69.4	157	91
TX65A1268	2051	60.2	154	66
TX65A1503-1	2050	65.3	156	71
CI14078	2042	66.4	154	81
CI15075	2037	65.3	159	97
NB68437	1982	64.5	155	86
TX62A2782-4-2	1978	68.1	154	76
CI14583	1970	62.3	154	86
CI15068	1947	68.6	156	97
CO693494	1934	64.0	156	102
TX62A2522-1-4	1897	62.2	155	71
CI 1442	1785	71.9	163	86

L.S.D. = 423, C.V. = 11.7%

Julesburg, Colorado
Three replications

C. I. or Sel. No.	: Yield	: Volume weight	: Plant height
	kg/ha	kg/hl	cm
CO695552	3856	78.0	119
CI14582	3851	78.8	102
TX62A2712-6	3713	78.4	97
TX62A2522-1-4	3655	76.5	97
CI14078	3628	81.1	109
CI14583	3615	78.9	104
CI15075	3573	76.0	127
CI14581	3556	78.8	102
CO696317	3546	76.1	104
CI14584	3510	78.6	102
TX65A1268	3500	74.4	89
CI15068	3477	78.4	114
NB68435	3433	79.1	112
TX65A1503-1	3279	77.9	97
TX62A2522-8-2	3264	78.0	97
TX62A2782-4-2	3255	78.8	97
CI 8856	3187	79.6	122
KS7016	3182	78.9	122
CI14075	3096	79.2	117
TX65A1626	3095	75.6	89
NB66403	3092	74.7	127
KS6623	3026	79.5	124
CO696753	2989	73.7	102
NB68437	2934	77.3	107
CO653033	2924	78.2	130
CI11673	2921	76.6	127
TX63C92	2877	78.0	102
CI13996	2853	77.5	117
OK66C3003	2768	78.4	124
CO693494	2690	75.2	124
CI15158	2549	78.3	102
CI 1442	2316	77.0	142

L.S.D. = 552, C.V. = 10.3%

Yellow Jacket, Colorado
Three replications

C. I. or. Sel. No.	: Yield	: Volume weight	: Plant height
	kg/ha	kg/hl	cm
KS6623	2052	75.3	66
TX62A2522-8-2	2018	76.1	60
CO696317	2003	73.3	65
CI 8856	1994	72.6	72
NB68437	1946	72.9	55
TX65A1268	1945	69.5	58
CI14582	1932	77.3	73
TX62A2712-6	1924	70.4	62
CI11673	1922	73.0	75
CI14581	1902	75.9	65
CI15068	1881	74.6	69
CI 1442	1873	74.2	69
NB68435	1869	75.6	75
CO693494	1850	72.6	66
CI14075	1824	75.2	70
CI15075	1822	73.1	64
CI15158	1803	73.3	74
CI14583	1802	74.2	67
TX65A1503-1	1789	73.4	54
CO695552	1774	73.7	72
TX65A1626	1758	73.0	64
NB66403	1748	72.0	69
CI14584	1715	74.6	72
CO696753	1702	71.9	70
OK66C3003	1642	74.0	75
KS7016	1633	72.9	66
CO653033	1597	73.0	70
CI13996	1580	73.4	68
TX62A2522-1-4	1562	76.9	51
TX62A2782-4-2	1542	77.1	67
TX63C92	1532	69.0	68
CI14078	1526	70.8	73

L.S.D. = 418, C.V. = 14.0%

Mead, Nebraska
Three replications

C.I. or Sel. No.	Yield kg/ha	Volume Weight kg/hl	Days to Heading	Plant Height cm	Lodg. 0-9	Disease Data			
						Leaf	rust	Stem	rust
						Sev. %	Resp. 0-9	Sev. %	Resp. 0-9
KS7016	4905	77.1	152	112	1	0	2	0	2
CI15075	4793	75.5	150	106	2	7	8	0	2
TX62A2522-8-2	4793	76.5	146	84	0	0	1	0	2
TX63C92	4793	75.3	150	105	1	0	2	0	2
CI13996	4739	76.4	150	108	1	25	8	0	2
TX62A2782-4-2	4703	78.6	148	89	0	1	5	0	2
CI15068	4616	74.7	150	98	1	3	8	0	2
TX65A1503-1	4614	73.7	149	84	1	0	1	0	2
CI14075	4598	76.5	149	104	1	2	4	0	2
NB68437	4554	75.1	149	97	1	10	8	0	2
CI11673	4514	75.2	150	113	2	30	8	0	2
NB68435	4496	73.9	150	108	1	12	8	0	2
CO696317	4452	73.5	149	97	1	30	7	7	3
TX62A2522-1-4	4450	73.0	149	84	0	1	5	0	2
CI14582	4310	78.0	147	92	1	10	4	2	2
KS6623	4309	76.5	150	104	1	3	8	2	4
OK66C3003	4303	78.7	148	104	2	0	1	0	2
NB66403	4283	71.9	152	108	1	12	8	0	2
CI14581	4259	78.4	147	90	1	5	4	0	2
CO695552	4225	73.3	149	105	1	5	8	0	2
CI15158	4036	76.4	149	93	1	5	8	30	7
CO653033	3934	74.2	152	111	1	7	8	0	2
CI14583	3689	76.1	147	96	1	0	0	0	2
TX65A1626	3571	74.2	145	79	1	0	0	0	2
TX62A2712-6	3569	73.8	149	91	1	0	1	0	2
CI14584	3555	76.6	148	91	1	5	4	0	2

Mead, Nebraska (concluded)

C. I. or Sel. No.	Yield kg/ha	Volume Weight kg/hl	Days to Heading	Plant Height cm	Lodg. 0-9	Disease Data			
						Leaf Sev. %	rust Resp. 0-9	Stem Sev. %	rust Resp. 0-9
TX65A1268	3555	71.5	145	80	4	0	0	0	2
CI 1442	3360	71.7	156	112	4	55	8	7	3
CI14078	3308	78.3	145	94	1	0	0	0	2
CO696753	3165	68.2	146	87	1	0	0	0	2
CO693494	3067	70.3	148	102	1	0	4	0	2

L.S.D. = 499, C.V. = 7.2%

Clay Center, Nebraska

Three replications

C. I. or Sel. No.	: Yield	: Volume Weight	: Days to Heading	: Plant Height
	kg/ha	kg/hl		cm
TX62A2522-8-2	4265	75.7	147	83
TX62A2522-1-4	3882	74.0	152	85
TX65A1503-1	3858	73.5	151	85
CI14584	3797	76.1	149	96
TX62A2782-4-2	3673	74.9	151	88
CO695552	3649	74.7	149	108
CI14582	3649	77.4	149	90
CI15068	3641	74.2	149	102
TX65A1626	3607	73.8	147	81
CI15158	3583	75.6	151	100
OK66C3003	3549	76.9	147	101
CI14583	3529	75.5	149	90
KS6623	3523	76.4	150	111
NB68435	3521	73.5	152	110
NB68437	3521	73.9	149	92
CI14581	3519	76.2	150	91
TX62A2712-6	3507	73.9	151	92
CO696317	3486	72.4	151	101
CI14075	3483	75.7	149	102
KS7016	3464	74.3	152	107
CO653033	3452	73.8	153	117
TX65A1268	3445	72.8	147	79
CI13996	3390	74.4	149	107
CO693494	3344	72.2	146	108
CI14078	3300	77.0	146	98
CI15075	3272	73.1	151	106
TX63C92	3264	71.5	151	108
CI11673	3045	71.2	152	114
CO696753	2963	72.0	146	88
NB66403	2832	69.5	153	108
CI 1442	2754	72.8	157	119

L.S.D. = 463, C.V. = 8.0%

North Platte, Nebraska
Three replications

C.I. or Sel. No.	: Yield	: Volume Weight	: Days to Heading	: Plant Height
	kg/ha	kg/hl		cm
KS7016	4743	77.8	156	121
CI15075	4675	75.7	155	106
TX65A1268	4666	76.9	153	86
CO695552	4662	78.0	154	114
TX65A1626	4650	76.0	153	88
TX62A2782-4-2	4646	78.3	154	96
TX62A2712-6	4634	75.2	156	88
TX62A2522-1-4	4612	76.8	156	91
TX65A1503-1	4578	76.8	156	86
KS6623	4478	78.4	154	111
CI13996	4364	76.2	154	114
OK66C3003	4341	78.3	154	106
CO653033	4301	75.5	156	126
NB68435	4269	74.4	156	119
TX62A2522-8-2	4235	78.4	153	86
CI14581	4219	78.3	154	96
CI14582	4201	78.4	154	96
CI15158	4159	77.4	156	104
CI14078	4145	78.8	153	106
CO696317	4138	73.7	156	91
CO693494	4135	73.7	155	119
CI14584	4085	78.3	154	96
CI14583	4079	77.9	154	96
TX63C92	4040	74.4	157	106
NB68437	4026	76.1	154	106
CO696753	3994	73.9	153	88
CI15068	3954	77.1	155	104
CI14075	3912	78.9	154	109
NB66403	3768	71.9	157	116
CI11673	3711	74.7	155	124
CI 1442	3320	73.3	161	129

L.S.D. = 537, C.V. = 7.6%

Sidney, Nebraska
Three replications

C. I. or Sel. No.	: Yield	: Volume Weight	: Days to Heading	: Plant Height
	kg/ha	kg/hl		cm
CO695552	3822	74.3	164	107
TX62A2522-1-4	3798	74.3	165	84
NB68437	3780	76.1	162	96
TX65A1503-1	3773	74.9	164	81
CI15158	3773	77.7	165	99
TX62A2782-4-2	3762	77.3	161	88
NB68435	3744	76.6	166	111
TX62A2522-8-2	3692	72.9	160	82
CI13996	3679	77.4	166	110
CO696753	3670	70.8	161	90
CI14582	3625	76.2	163	93
CI14581	3621	76.0	162	93
CO696317	3605	70.9	162	98
CI15075	3585	74.0	166	105
TX65A1268	3585	69.5	164	77
CI11673	3556	74.4	166	111
CI14584	3517	74.8	164	93
CI15068	3466	76.5	167	100
CI14075	3434	77.5	165	102
TX65A1626	3423	72.6	161	81
TX62A2712-6	3410	71.6	163	89
KS6623	3383	77.7	166	107
CO653033	3376	76.2	166	109
CI14078	3347	75.5	161	105
NB66403	3338	73.3	166	112
OK66C3003	3266	73.7	163	108
KS7016	3208	75.7	165	109
CO693494	3188	73.3	166	108
TX63C92	3166	72.4	166	108
CI 1442	3154	78.0	165	116
CI14583	3056	73.0	161	93

L.S.D. = 565, C.V. = 9.7%

Columbia, Missouri
Three replications

C. I. or Sel. No.	:	Yield	Volume weight	Days to heading	Plant height	Lodg.	Rust	
							Leaf sev.	Stem sev.
		kg/ha	kg/hl		cm	0-9	%	%
CI15075		6442	78.7	140	109	0	2	0
KS7016		6287	79.3	143	114	0	2	0
NB68435		6153	78.7	142	114	0	50	0
CI14075		6133	80.6	137	114	0	47	0
NB68437		5823	78.7	139	102	0	33	0
TX65A1268		5790	79.3	134	81	0	43	1
CO695552		5736	80.0	138	109	0	47	12
KS6623		5716	80.6	140	112	0	23	2
CI13996		5689	80.0	139	109	0	37	1
CO653033		5689	78.7	142	117	0	5	1
TX62A2522-1-4		5669	80.6	140	86	0	47	7
OK66C3003		5635	80.6	135	96	3	5	0
CO693494		5635	78.0	145	107	1	63	25
CO696317		5568	78.7	143	109	0	70	0
CI15158		5548	79.3	140	99	0	2	28
TX62A2522-8-2		5514	80.6	135	86	0	5	1
CI11673		5386	77.4	141	114	1	47	2
NB66403		5353	77.4	142	109	1	67	0
TX65A1503-1		5346	81.3	140	81	0	47	7
CI14581		5292	83.2	139	96	1	50	8
CI14582		5016	82.6	140	94	1	53	3
CO696753		4983	77.4	135	91	0	11	2
TX62A2712-6		4969	80.6	141	86	0	30	2
TX62A2782-4-2		4848	80.0	140	89	0	2	1
TX63C92		4848	79.3	141	107	1	2	0
CI14584		4714	81.9	140	96	1	47	1
CI14583		4673	82.6	140	94	2	43	1
CI15068		4660	79.3	139	107	1	73	1
CI 1442		4626	77.4	145	127	1	37	8
TX65A1626		4539	79.3	135	84	0	2	1
CI 8856		4472	77.4	142	119	0	27	4
CI14078		4451	83.2	134	96	2	53	2

L.S.D. = 13.9, C.V. = 6.2%

Ames, Iowa
Three replications

C. I. or Sel. No.	: Yield	: Volume weight	: Days to: head	: Days to: ripe	: Plant height	: Winter: surv.	: Lodg-: ing	: Leaf rust sev
	kg/ha	kg/hl			cm	0-9	0-9	%
CI1442	3443	75.2	159	189	85	5	0	10
CI 13996	2744	74.4	155	187	75	5	0	10
CI 14075	2690	74.7	154	186	73	6	0	10
NB68435	2394	74.7	157	189	73	3	0	1
NB66403	2340	74.3	157	188	75	5	0	1
NB68437	2287	75.5	155	188	65	6	0	15
KS7016	1480	74.8	158	191	68	1	0	1
CO653033	1338	75.3	158	192	75	2	0	0
TX62A255-8-2	1298	75.6	154	185	58	5	2	1
CI15075	1271	73.5	157	190	65	2	0	1
CI15158	1258	71.5	155	188	60	2	0	0
CI15068	1083	75.3	156	188	63	3	0	10
TX65A1268	942	72.8	154	188	50	3	0	1
CI 8856	740	--	157	190	78	0	0	20
KS 6623	679	--	155	191	65	0	0	0
CO 696753	659	--	154	188	55	2	0	10
TX65A1626	417	--	155	188	58	0	0	1
CI11673	0	--	159	189	70	0	0	15
OK66C3003	0	--	--	--	--	0	-	--
TX62A2782-4-2	0	--	157	190	53	1	0	1
TX62A2522-1-4	0	--	157	189	58	0	0	0
TX65A1503-1	0	--	158	192	55	0	0	1
CO693494	0	--	--	--	58	0	0	1
CO695552	0	--	157	189	68	0	0	5
CO696317	0	--	--	--	--	0	-	--
CI14584	0	--	--	--	--	0	-	--
CI14582	0	--	--	--	--	0	-	--
CI14581	0	--	--	--	--	0	-	--
CI14583	0	--	--	--	--	0	-	--
CI14078	0	--	--	--	--	0	-	--
TX62A2712-6	0	--	--	--	--	0	-	--
TX63C92	0	--	--	--	--	0	-	--

Urbana, Illinois
Three replications

C. I. or Sel. No.	: Yield	: Volume	: Days to heading	: Plant height	: Surv.
	kg/ha	kg/hl		cm	0-9
TX65A1268	4729	75.3	140	71	9
CI15158	4634	75.2	145	86	9
TX62A2522-8-2	4455	74.7	141	73	9
CI15068	4397	76.2	144	92	9
TX65A1626	4394	75.5	140	74	9
KS6623	4300	75.7	144	96	9
NB68437	4197	73.7	144	84	9
KS7016	4195	77.0	145	95	9
CO695552	4186	75.7	142	96	9
CO696753	4137	71.3	141	78	9
NB68435	4110	75.3	145	96	9
CI15075	4089	73.4	145	92	9
CI14075	4051	75.5	143	92	9
CI13996	4024	74.8	143	93	9
CI11673	3939	74.9	145	97	9
TX62A2522-1-4	3912	71.7	144	77	9
OK66C3003	3856	77.0	141	89	9
TX65A1503-1	3834	72.9	143	75	9
CI 8856	3771	78.0	141	95	9
CI14583	3771	76.5	142	82	9
NB66403	3737	69.9	146	92	9
TX62A2782-4-2	3708	77.1	144	75	9
CI14582	3706	76.4	142	80	9
CI14581	3673	76.8	142	82	9
TX62A2712-6	3527	74.3	144	75	6
CO653033	3520	75.3	146	101	9
CO693494	3372	74.9	143	91	5
CI14584	3369	74.9	142	82	8
CI14078	3352	77.1	139	80	9
CI 1442	3206	76.6	149	95	9
CO696317	2542	74.9	146	88	2
TX63C92	1116	72.9	0	0	2

L.S.D. = 725, C.V. = 11.5%

Lind, Washington
Four replications

C. I. or Sel. No.	: Yield kg/ha	: Volume weight kg/hl	: Days to head	: Plant height cm
NB68435	2818 ¹	82.2	145	74
CO696317	2771 ¹	81.7	144	66
CI15075	2751	82.8	145	66
CI15158	2737 ¹	81.8	145	74
TX63C92	2703 ¹	82.4	143	71
CO693493	2683	81.7	144	74
NB66403	2515	81.8	145	69
CI 1442	2455	81.8	149	79
CO653033	2428	81.7	145	76
CI11673	2421	82.3	145	74
KS 6623	2421	82.8	145	69
CI15068	2401	81.5	143	66
CI14075	2367	81.5	142	71
TX62A2712-6	2354 ¹	81.7	142	58
OK66C3003	2334 ¹	81.7	143	66
CI13996	2327	81.9	142	66
KS 7016	2280 ²	81.0	145	69
CO696753	2266 ¹	81.4	142	64
TX62A2782-4-2	2246	81.0	144	58
TX65A1268	2219	81.8	143	56
NB68437	2199	80.8	143	64
CO695552	2118	82.7	144	71
CI14078	2004	82.6	142	69
TX62A2522-1-4	1950 ¹	81.1	144	61
TX62A1503-1	1944	81.1	144	58
CI14581	1816	80.9	142	64
TX65A1626	1796	77.3	142	61
CI14584	1775	81.4	141	61
CI 8856	1762	79.5	142	76
CI14582	1762	81.1	141	66
CI14583	1668	81.3	142	61
TX62A2522-8-2	1513	79.0	142	56

¹Mean yield from 3 replications only.

²Mean yield from 2 replications only.

Table 2.--Seedling reaction to isolates of stem rust and field reaction to leaf and stem rust of entries in the Southern Regional Performance Nursery at St. Paul, Minnesota in 1971. (Data provided by D. McVey, Cooperative Rust Laboratory.)

C. I. or Sel. No.	Puccinia graminis tritici Race and Isolate										Field Reaction			
	32			15	15B2	31		151		113	Leaf rust		Stem rust	
	70-21-523(1)	70-M-003(1)	70-11-98(2)	70-39-659(2)	65-39-2	70-18-231(1)	70-21-1413(4)	70-21-528(1)	70-41-71(1)	70-39-661(1)	Severity (%)	Response	Severity (%)	Response
1442	3+	3	23	3+	4	3	3	3	3	3	-	-	-	-
8856	2	2	2	3	4	0;1	2-	2	2	2	40	S	60	MS-S
11673	3+	3	3	3+	4	23	3	3	3	3	60	S	60	MS-S
13996	23	23	0;1	X-	0;1	2	23	3	0;	0;1	40	S	5	R-S
NB66403	3	3	3	0;	0;	0;	23	23	3	3	20	S	20	R-MR
15075	3+	3	0;	0;	0;	0;	3	3	0;	0;1	5	MS	20	MS-S
OK66C3003	2-	2-	0;1	2	23	0;1	0;1	2	0;1	0;1	T	MS	5	R
TX62A2782-4-2	3	23	3	3+	3+	2	23	23	0;1	2	T	MR-MS	10	MS-S
TX62A2522-1-4	3	23	3	3+	3+	23	32	0;	3	3	-	-	60	MR-MS
TX62A2522-8-2	23	23	23	3	3+	23	32	23	0;1	23	--	-	60	MR-MS
TX65A1503-1	23	23	23	3	3+	23	32	23	0;1	23	-	-	60	MR-MS
KS7016	2-	0;1	0;	0;	0;	2	0;1	2	0;	0;	T	R	T	R
C0653033	23	23	X-	3	3	23	3	23	X-	2	5	R-MR	5	MR-MS
C0693494	-	3	3	0;1	0;1	0;	3	3+	3	3	40	S	60	MS
C0695552	3	3	3	0;	3	3	3	3+	3	3+	40	S	60	MS-S
C0696753	3	3	3	3	3	3	3	3+	3	3	5	R-MR	T	R
C0696317	0;1	3	0;1	3	0;	0;	2?	-	0;1	0;	40	S	5	R-MR
14075	3	3+	0;1	0;1	3+	3+	3	3+	0;1	0;	40	S	T	R-MR

Table 2.--(concluded)

C. I. or Sel. No.	Puccinia graminis tritici Race and Isolate										Field Reaction			
	32			15	15B2	31		151		113	Leaf rust		Stem rust	
	70-21-523(1)	70-M-003(1)	70-11-98(2)	70-39-659(2)	65-39-2	70-18-231(1)	70-21-1413(4)	70-21-528(1)	70-41-71(1)	70-39-661(1)	Severity (%)	Response	Severity (%)	Response
15068	3	23	23	3+	3	23	23	23	23	2	40	S	20	MR-S
KS6623	3	23	23	3+	3	23	23	3	23	2	40	S	40	MS-S
14584	3	3	23	3	3	3	23	-	23	0;	40	S	40	MS-S
14582	3	32	-	3	3	3+	23	-	-	0;	40	S	60	MS-S
14581	3	32	23	3+	3	3	2	23	23	3	40	S	60	MS-S
14583	3	32	-	3+	3	23	2	23	-	0;	40	S	60	MS-S
NB68435	23	23	0;	0;	2	3	X-	-	0;	0;	40	S	5-40	R-S
NB68437	3+	3	0;	0;	0;	0;	3	0;	0;	0;	40	MS-S	5	R
15158	3+	3+	3+	3+	3+	3+	3	3	3+	3	5	MS	40	S
Pronto	23	3	3	3+	3+	0;	23	-	3	3	40	S	60	MS-S
TX65A1626	3-	23	3	3+	3	2	23	-	3	0;	-	-	40	MR-S
TX65A1268	2=	2	0;	3+	3	0;1	2	0;1	0;	0;	5	S	40	MR-MS
TX62A2712-6	3	3	3	3+	3	23	23	23	23	3	20	S	40	MR-MS
TX63C92	0;1	0;1	-	0;	0;	-	0;1	0;1	-	-	-	-	-	-

Summary of SRPN Yields

Regional yields of varieties in the SRPN are summarized in table 3. State averages and ranks also are reported. For the first year since it was entered in the SRPN, Centurk failed to be the highest-yielding on a region-wide basis. Texas semi-dwarfs 65A1268 and 65A1503-1 and Colorado experimental 695552 all had slightly higher regional average yields than Centurk in 1971. TX65A1268 ranked first in Texas, Oklahoma, and Illinois and no lower than seventh in Kansas, Colorado, and Missouri. TX65A1503-1 ranked eighth or higher in every state except Oklahoma, Illinois, and Missouri. C0695552 ranked very high in all states except Texas and New Mexico. Centurk performed poorly in Texas and Oklahoma where it probably overtilled and was hurt by the severe spring drought. There was less consistency of performance among varieties in 1971 than is normally the case. The severe moisture stress in the south undoubtedly contributed.

Yield data for 15 varieties grown at 22 sites in 1970 and 1971 are summarized with state averages and ranks in table 4. Centurk continues to have the best 2-year performance record with an average yield of 3244 kg/ha (48.7 bu/a). It ranks no worse than fifth on a 2-year basis in any state. Scout 66 occupies second place and TX62A2712 third place. Eagle, the recently released Kansas selection from Scout, has made a 2-year rank of sixth and Scoutland only eleventh.

Three parameters in addition to mean yield, $b_{y \cdot x}$, r , and r^2 , are reported in table 4a. $b_{y \cdot x}$ is the regression of individual variety yield on nursery mean yield over reporting stations in 1971. As slope of the regression line, $b_{y \cdot x}$ is a measure of variety response to changes in environment (in this case identified by nursery mean yield). The degree of association of individual variety yield with nursery mean yield is indicated by the correlation coefficient r . The coefficient of determination r^2 is the percent of total variation of individual variety yield that is associated with or explainable by the general response of all varieties and is a measure of the closeness of fit of variety yield to its regression line.

In 1971 TX65A1268, TX65A1503-1, C0695552, and Centurk produced the highest mean yields. Of this group Centurk responded most strongly to changes in environment ($b_{y \cdot x} = 1.16$) and would be expected to produce higher yields under favorable conditions than the other three varieties. TX62A2522-1-4 and NB68437 had the most predictable performance based on closest fit to their regression lines ($r^2 = .98$). TX63C92 had the least predictable performance ($r^2 = .82$). The weakest response to changes in environment occurred in CI1442 and CI8856 ($b_{y \cdot x} = .80$ and $.81$ respectively).

Summary of Agronomic Data

Agronomic data for varieties grown in the SRPN in 1971 are summarized in table 5. Stem rust was reported from only 3 stations and leaf rust from 4. Several varieties exhibited low combined severity readings to stem and leaf rust among which were Centurk, TX62A2522-8-2, C0696753, KS7016, TX62A2782-4-2, OK66C3003, and TX63C92. NB68437 and KS6623 had the highest winter survival ratings. TX65A1268 was the shortest variety and C0696753 headed as early as Early Blackhull. No experimental variety was as tall as Kharkof and Comanche.

Table 3. Summary of mean yields made by 32 varieties grown in the Southern Regional Performance Nursery in 24 trials in 1971, with state averages and ranks.

Variety	C. I.		Texas			Illinois	
	or		Chilli-	Bush-			
	Sel. No.	Denton	cothe	land	Average	Rank	Urbana:Rank
				irrig			
1826-1/Parker	TX65A1268	3010	555	6403	3323	1	4729 1
391-56-D8/Kaw	TX65A1503-1	3038	456	5991	3162	7	3834 18
Sn64/Tpr 2/CO652961	CO695552	3426	309	5048	2928	17	4186 9
Centurk	CI15075	2859	403	4876	2713	24	4089 12
Scout/C.I.12995	NB68435	3038	754	4738	2843	20	4110 11
Ptc/Y54/Tzp/Nar/Tpr/2961	CO696317	3903	383	5432	3239	2	2542 31
391-56-D8/Kaw	TX62A2522-1-4	2859	454	5719	3011	14	3912 16
391-56-D8/Kaw	TX62A2522-8-2	3031	246	4833	2703	26	4455 3
Ptc/Y54/Tzp/Nar/Tpr/Wrr	CO696753	2726	582	6264	3191	3	4137 10
Chanute	CI14581	3006	449	6060	3172	5	3673 24
Scout 66	CI13996	3384	710	5396	3163	6	4024 14
Eagle	CI15068	3401	781	5378	3187	4	4397 4
Satanta	CI14582	3017	317	5811	3048	12	3706 23
5*Scout/Agent	KS7016	3286	844	4548	2893	19	4195 8
391-56-D8/Tascosa	TX62A2712-6	3146	293	5802	3080	10	3527 25
Sut/4/Ky 58/Nth/2/Cnn/Tm/Mi/Hope/3/Pn/Cnn	NB68437	2981	533	5593	3636	13	4197 7
Bezostaia l	CI15158	2995	773	5515	3094	9	4634 2
Pn/Cnn/3/Pn/2/Ky58/4/Cnn	NB66403	3139	459	4566	2721	23	3737 21
391-56-D8/Tascosa	TX62A2782-4-2	3052	484	5410	2982	15	3708 22
3*Parker/Bison (KS64H2815)	KS6623	3160	533	4734	2809	21	4300 6
Palo Duro	CI14584	3279	356	5654	3096	8	3369 28
Yukon	CI14583	2834	271	5641	2915	18	3771 20
391-56-D8/Triumph	TX62A1626	2557	340	5167	2688	27	4394 5
Scoutland	CI14075	3121	528	4478	2709	25	4051 13
Tmp 64/5/Wi/4/(Wi/3/T.sp./Ae/2/Pn)F ₁ x-ray	OK66C3003	2758	416	5012	2729	22	3856 17
Agent/Tascosa	TX63C92	3307	383	5143	2944	16	1116 32
Pronto	CI14078	3225	358	5610	3064	11	3352 29
Scout/C.I.12995	CO653033	2988	732	3973	2564	28	3520 26
Ndd63/CO652643/Guide	CO693494	2012	281	3780	2024	32	3372 27
Comanche	CI11673	2540	320	3870	2243	29	3939 15
Early Blackhull	CI8856	2550	355	3704	2203	30	3771 19
Kharkof	CI1442	2708	555	3058	2107	31	3206 30

Table 3. (continued)

C. I. or Sel. No.	New Mexico				Oklahoma				Kansas						
	:Clovis:		:Aver-:		:Still-:		:Good-:		:Aver-:		:Manhat-:		:Garden:		
	irrig	dryl	age	Rank	water	well	Lahoma	age	Rank	tan	Colby	Hays	City	Average	Rank
TX65A1268	4078	358	2218	25	3457	4630	2208	3432	1	3492	3756	2064	2765	3019	7
TX65A1503-1	4550	592	2571	5	3275	3769	1793	2946	15	3858	3552	2306	2524	3060	4
CO695552	4106	457	2282	22	3538	3717	2488	3248	4	4509	3613	1479	2437	3010	8
CI15075	4685	592	2639	3	3439	3515	1782	2912	19	4177	3794	1156	3013	3035	5
NB68435	4159	538	2349	19	3332	3811	2331	3158	6	3990	3738	1560	3023	3078	3
CO696317	3432	605	2019	30	3363	3015	2421	2933	17	4147	3904	2367	2293	3178	1
TX62A2522-1-4	4240	188	2214	26	3264	3233	1939	2812	25	4061	3713	1941	2638	3088	2
TX62A2522-8-2	4388	364	2376	18	3071	3654	2107	2944	16	3653	3729	1983	2300	2916	12
CO696753	5250	498	2874	1	3614	2645	2914	3058	8-9	3749	3906	1921	2511	3022	6
CI14581	4079	834	2457	10-11	3490	3715	2242	3149	7	3819	3794	1535	2289	2859	15-16
CI13996	4482	578	2530	7	3497	3760	2309	3189	5	3533	3788	1306	2920	2887	14
CI15068	4456	309	2383	16	3724	3529	2555	3269	3	3669	3523	1443	2717	2838	20
CI14582	4509	404	2457	10-11	3556	2993	2298	2949	14	3434	3815	2113	2265	2907	13
KS7016	4361	538	2450	12-13	3376	3345	2141	2954	13	3828	3221	1293	2863	2801	22
TX62A2712-6	4361	578	2470	9	2982	3545	1861	2796	26	3589	3586	2008	2536	2930	11
NB68437	3904	565	2235	24	3314	3455	2096	2955	12	3686	3456	1502	2756	2850	17
CI15158	4617	633	2625	4	3219	4195	2522	3312	2	3934	3298	811	2877	2730	23
NB66403	4886	767	2827	2	3462	3195	2219	2959	11	4011	3584	1040	3316	2988	9
TX62A2782-4-2	4186	471	2329	21	3262	3560	1950	2924	18	3878	3678	1562	2115	2808	21
KS6623	3205	458	1832	31	3242	3529	2354	3042	10	3750	3375	1244	2520	2722	24
CI14584	4684	377	2531	6	3609	2495	1928	2677	29	3649	3500	1820	2418	2847	19
CI14583	4617	390	2504	8	3269	3011	2017	2766	28	3809	3923	1815	2240	2947	10
TX62A1626	4199	565	2382	17	3065	3489	2174	2909	20	3247	3567	1802	2777	2848	18
CI14075	3526	740	2133	27	3125	2923	2298	2782	27	3699	3529	1073	2522	2706	25
OK66C3003	4590	309	2450	12-13	3161	2814	1905	2627	30	3276	3434	1302	2756	2692	26
TX63C92	4119	700	2410	15	3558	2973	1950	2827	24	4267	3384	1457	2328	2859	15-16
CI14078	4321	511	2416	14	3085	3591	2499	3058	8-9	3149	3525	1443	2539	2664	27
CO653033	3553	592	2073	28	3269	2713	1894	2625	31	3802	3146	997	2647	2648	28
CO693494	3109	471	1790	32	3639	2979	2107	2908	21	3985	3298	973	2203	2615	29
CI11673	4011	471	2241	23	3199	3513	1984	2899	22	3673	3044	1138	2469	2581	30
CI8856	3607	498	2053	29	3089	3618	1984	2897	23	3411	2915	1123	2590	2510	31
CI1442	4159	511	2335	20	2777	1851	1412	2013	32	3626	2623	932	2476	2414	32

Table 3. (continued)

C. I. or Sel. No.	Nebraska							Colorado						
	: Mead	: Clay : Center	: North : Platte	: Sidney	: Average	: Rank	: Fort : Collins	: Akron	: Burling- : ton	: Spring- : field	: Yellow: Jacket	: Jules- : burg	: Average	: Rank
TX65A1268	3555	3445	4666	3585	3813	20-21	5812	2051	2662	3541	1945	3500	3252	6
TX65A1503-1	4614	3858	4578	3773	4206	2	6377	2050	2668	3191	1789	3279	3226	8
CO695552	4225	3649	4662	3822	4090	5	5296	2415	2778	3356	1774	3856	3246	7
CI15075	4793	3272	4675	3585	4081	6	6287	2037	2379	3555	1822	3573	3276	4
NB68435	4496	3521	4269	3744	4008	9	5596	2308	2368	3464	1869	3433	3173	10
CO696317	4452	3486	4138	3605	3920	13	7646	2115	2121	3175	2003	3546	3434	1
TX62A2522-1-4	4450	3882	4612	3798	4186	4	6058	1897	2806	3040	1562	3655	3170	11
TX62A2522-8-2	4793	4265	4235	3692	4246	1	5179	2307	2965	3182	2018	3264	3153	12
CO696753	3165	2963	3994	3670	3448	29	6327	2539	2927	3235	1702	2989	3287	3
CI14581	4259	3519	4219	3621	3904	15	5116	2208	3042	3362	1902	3556	3198	9
CI13996	4739	3390	4364	3679	4043	8	4847	2596	2071	3355	1580	2853	2884	27
CI15068	4616	3641	3954	3466	3919	14	5144	1947	2541	3521	1881	3477	3085	17-18
CI14582	4310	3649	4201	3625	3946	11	4977	2322	2786	3656	1932	3851	3245	5
KS7016	4905	3464	4743	3208	4080	7	5718	2095	2266	3084	1633	3182	2996	21
TX62A2712-6	3569	3507	4634	3410	3780	22	6534	2156	2799	3376	1924	3713	3417	2
NB68437	4554	3521	4026	3780	3970	10	5686	1982	2634	3330	1946	2934	3085	17-18
CI15158	4036	3583	4159	3773	3888	16	4394	2513	2535	3048	1803	2549	2807	31
NB66403	4283	2832	3768	3338	3555	27	6426	2163	1756	3478	1748	3092	3110	14
TX62A2782-4-2	4703	3673	4646	3762	4196	3	5408	1978	2395	2988	1542	3255	2928	23
KS6623	4309	3523	4478	3383	3923	12	5157	2116	2392	3131	2052	3026	2979	22
CI14584	3555	3797	4085	3517	3739	24	5359	2271	2348	3392	1715	3510	3099	15
CI14583	3689	3529	4079	3056	3588	26	5179	1970	2729	3244	1802	3615	3090	16
TX62A1626	3571	3607	4650	3423	3813	20-21	5296	2294	2765	2821	1758	3095	3005	20
CI14075	4598	3483	3912	3434	3857	18	4650	2290	2418	3076	1824	3096	2892	26
OK66C3003	4303	3549	4341	3266	3865	17	5771	2171	1918	3292	1642	2768	2927	24
TX63C92	4793	3264	4040	3166	3816	19	6458	2191	2066	3115	1532	2877	3040	19
CI14078	3308	3300	4145	3347	3525	28	4744	2042	2025	3284	1526	3628	2875	28
CO653033	3934	3452	4301	3376	3766	23	5699	2272	2217	2851	1597	2924	2927	25
CO693494	3067	3344	4135	3188	3434	30	6834	1934	2597	2996	1850	2690	3150	13
CI11673	4514	3045	3711	3556	3707	25	4632	2227	2113	3169	1922	2921	2831	30
CI8856	--	--	--	--	--	--	4610	2181	1910	3215	1994	3187	2850	29
CI1442	3360	2754	3320	3154	3147	31	4794	1785	1718	2521	1873	2316	2501	32

Table 3. (concluded)

C. I. or Sel. No.	Missouri	Rank	test Average
TX65A1268	5790	6	3419
TX65A1503-1	5346	19	3378
CO695552	5736	7	3370
CI15075	6442	1	3367
NB68435	6153	3	3345
CO696317	5568	14	3319
TX62A2522-1-4	5669	17	3316
TX62A2522-8-2	5514	16	3301
CO696753	4983	22	3300
CI14581	5292	20	3295
CI13996	5689	9	3285
CI15068	4660	28	3280
CI14582	5016	21	3273
KS7016	6287	2	3268
TX62A2712-6	4969	23	3267
NB68437	5823	5	3261
CI15158	5548	15	3249
NB66403	5353	18	3192
TX62A2782-4-2	4848	24	3188
KS6623	5716	8	3154
CI14584	4714	26	3142
CI14583	4673	27	3132
TX62A1626	4539	30	3132
CI14075	6133	4	3105
OK66C3003	5635	12	3094
TX63C92	4848	25	3043
CI14078	4451	32	3042
CO653033	5689	10	3006
CO693494	5635	13	2937
CI11673	5386	17	2974
CI8856	4472	31	2739 ^{1/}
CI1442	4626	29	2588

^{1/} Average based on 4 stations less than the number shown.

Table 4. Summary of 2-year mean yields for 15 varieties grown in the Southern Regional Performance Nursery in 18 trials in 1970 and 1971, with state averages and ranks.

	: C. I. :	Texas					New Mexico				
	: or :	:Chilli-:		:Bush-:		:Aver-:		:Aver-:			
Variety	: Sel. No.:	Denton:	coth	land	: age	: Rank:	Clovis:	Clovis:	: age	: Rank	
							dryl.	irrig.			
Ky 58/2/Nth/3/Hope/2*Tk/4/Cnn/5/Pk (Centurk)	CI15075	3023	1271	4674	3013	5	1295	4800	3018	2	
Scout 66	CI13996	2938	1511	4991	2823	10	1273	4410	2528	12	
391-56-D8/Tascosa	TX62A2712-6	2920	974	5144	3146	1	1404	4631	2841	7	
Satanta	CI14582	2687	952	5230	2942	9	1277	4215	2910	4	
Chanute	CI14581	2773	1279	5306	2956	8	1431	4295	2746	9	
Scout Selection (Eagle)	CI15068	2951	1337	4987	2989	6	1118	4544	3047	1	
3*Parker/Bison (KS64H2815)	KS6623	2991	1487	4438	2972	7	1354	3509	2432	13	
Pn/Cnn/3/Pn/2/Ky 58/4/Cnn	NB66403	2471	929	4360	2586	12	1398	4531	2964	3	
Palo Duro	CI14584	2832	1190	5200	3091	3	1107	4678	2831	8	
Yukon	CI14583	2525	1115	5187	3074	4	1230	4591	2893	5	
Scoutland (NB65482)	CI14075	2839	1402	4228	3119	2	1394	3663	2863	6	
Scout/C.I. 12995	CO653033	2920	1646	3705	2757	11	1320	3522	2421	14	
Comanche	CI11673	2507	1214	3904	2542	13	1134	4060	2597	10	
Early Blackhull	CI8856	2305	1205	3785	2431	14	1410	3723	2566	11	
Kharkof	CI1442	2141	1129	3502	2257	15	827	3805	2316	15	

Table 4. (continued)

C. I.	Oklahoma				Kansas					Missouri		Illinois		
or	Still-	Good-	Aver-	Man-		Garden	Aver-	Colum-						
Sel. No.	water	well	age	Rank	hattan	Hays	Colby	City	age	Rank	bia	Rank	Urbana	Rank
CI15075	3391	3610	3367	4	3687	1923	2512	2800	2729	4	4558	1	3950	3
CI13996	3307	3380	3271	7	2908	2046	2700	2617	2568	9	3873	3	3940	4
TX62A2712-6	3000	3733	3344	5	3126	2339	2543	2497	2626	8	3604	8	3706	8
CI14582	3068	3592	3205	9	3451	2388	2703	2500	2760	2	3725	6	3806	5-6
CI14581	3111	3849	3330	6	3625	2055	2729	2439	2712	6	3593	9	3757	7
CI15068	3389	3352	3500	1	3126	2071	2449	2577	2556	10	3226	12	4066	1
KS6623	3095	3382	3239	8	3246	1973	--	2568	2707	7	4050	2	4025	2
NB66403	3054	3130	3092	11	3694	2016	2471	2834	2754	3	3568	10	3684	9
CI14584	3277	2961	3371	3	3436	2307	2598	2526	2717	5	3284	11	3365	14
CI14583	3023	3388	3119	10	3773	2239	2765	2387	2791	1	3216	13	3597	11
CI14075	3325	3216	3480	2	3182	1982	2371	2373	2477	12	3804	4	3806	5-6
CO653033	3117	2834	2975	14	3441	1924	2094	2656	2529	11	3741	5	3446	13
CI11673	2960	3178	3069	13	3288	1883	2080	2449	2425	13	3632	7	3670	10
CI8856	2823	3349	3086	12	2887	1658	2047	2389	2245	14	3153	14	3515	12
CI1442	2530	2170	2350	15	3012	1670	1719	2385	2196	15	3054	15	3048	15

Table 4. (concluded)

C. I.	Colorado							Nebraska					22-	
or	Fort	Bur-	Spring-	Yellow-	Aver-	Clay	North	Aver-	test					
Sel. No.	Collins:	Akron:	lington:	field:	Jacket:	age	Rank:	Mead	Center:	Platte:	Sidney:	age:	Rank:	Average
CI15075	6677	2583	1824	2686	1595	3073	1	3975	2965	3683	3896	3629	2	3244
CI13996	5243	2734	1713	2712	1568	2794	6	4025	3331	3498	3911	3691	1	3119
TX62A2712-6	5821	2293	2136	2771	1633	2931	3	3202	2767	3687	4110	3441	9	3093
CI14582	5121	2388	2156	2982	1639	2857	4	3734	2822	3677	3918	3538	4	3092
CI14581	4757	2356	2233	2507	1524	2675	12	3632	2589	3585	4080	3471	6	3068
CI15068	5335	2363	1928	2822	1639	2817	5	3908	3270	3224	3639	3510	5	3060
KS6623	5038	2377	1846	2464	1703	2685	11	3827	3121	3423	3834	3551	3	3043 ^{2/}
NB66403	6630	2645	1592	2489	1601	2991	2	3880	2654	3271	4048	3463	7	3042
CI14584	5247	2457	1918	2652	1502	2755	8	3300	2987	3403	4018	3427	10	3011
CI14583	5334	2222	2067	2487	1523	2726	9	3333	2903	3355	3848	3360	11	3005
CI14075	5104	2502	1794	2410	1619	2686	10	3821	3105	2899	3595	3355	12	2929
C0653033	5612	2585	1761	2483	1472	2783	7	3586	3027	3468	3718	3449	8	2912
CI11673	4648	2613	1782	2408	1692	2628	13	3717	2747	3008	3659	3282	13	2829
CI8856	4547	2403	1652	2511	1729	2568	14	--	--	--	--	2786 ^{1/}	15	2633 ^{1/}
CI1442	4028	2157	1509	1840	1672	2241	15	2985	2422	2704	3670	2945	14	2453

^{1/} Averaged based on 4 trials less than the number shown.

^{2/} Averaged based on 1 trial less than the number shown.

Table 4a.--Average yield, regression coefficient, correlation coefficient, and coefficient of determination from linear regression analyses of variety yield on nursery mean yield for entries in the Southern Regional Performance Nursery in 1971.

C.I. or Sel. No.	Average yield : over 24 locations : (kg/ha)	Regression : coefficient : ($b_{y.x}$)	Correlation : coefficient : (r)	Coefficient of determination : (r^2)
TX65A1268	3419	1.08	.96	.92
TX65A1503-1	3377	1.10	.98	.96
CO695552	3370	1.03	.98	.97
CI15075	3367	1.16	.98	.97
NB68435	3348	1.01	.99	.97
CO696317	3319	1.08	.92	.85
TX62A2522-1-4	3316	1.12	.99	.98
TX62A2522-8-2	3301	1.00	.97	.94
CO696753	3300	1.02	.93	.87
CI14581	3295	.98	.98	.96
CI13996	3285	1.00	.97	.95
CI15068	3280	.95	.97	.95
CI14582	3273	.97	.97	.94
KS7016	3268	1.06	.97	.95
TX62A2712-6	3267	1.05	.97	.94
NB68437	3261	1.05	.99	.98
CI15158	3248	.96	.94	.89
NB66403	3192	1.03	.96	.92
TX62A2782-4-2	3188	1.03	.98	.97
KS6623	3154	.97	.97	.95
CI14584	3142	.98	.97	.93
CI14583	3132	.98	.97	.94
TX62A1626	3132	.92	.97	.94
CI14075	3105	.94	.96	.92
OK66C3003	3094	1.07	.99	.97
TX63C92	3043	1.01	.90	.82
CI14078	3042	.91	.96	.92
CO653033	3006	.95	.96	.94
CO693494	2937	1.01	.93	.85
CI11673	2974	.91	.96	.93
CI8856 ¹	2739	.81	.96	.93
CI1442	2588	.80	.93	.87

¹Average calculated from 4 locations less than the number shown.

Table 5. Summary of agronomic and yield data for varieties grown in the Southern Regional Performance Nursery in 1971.

C. I. or Sel. No.	: Days to : : head:ripe:	: Plant : : height:	: Rust : : Leaf :stem:	: : : sev.:resp.:sev.:	: : : Surv.:	: : : ing :	: : : Shatt-:	: : : ering:	: : : Volume:	: : : age	
	cm	%	%	0-9	0-9	0-9	kg/hl	kg/ha			
Number of Trials	21	2	24	4	2	3	3	5	3	23	24
TX65A1268	135	158	69	11	M	19	6.3	1.0	0.3	75.1	3410
TX65A1503-1	140	166	74	21	M	22	5.3	0.4	0.3	76.2	3378
CO695552	136	159	90	18	MS	15	5.3	0.8	0.3	77.3	3379
CI15075	140	165	88	5	M	2	6.3	1.6	1.0	76.0	3381
NB68435	139	162	93	27	S	4	6.0	0.6	1.3	76.4	3382
CO696317	138	161	82	38	S	3	2.3	0.6	0.0	75.2	3383
TX62A2522-1-4	140	167	74	27	MS	24	6.3	0.2	0.7	76.4	3384
TX62A2522-8-2	135	161	73	5	MR	9	7.3	0.0	0.3	76.9	3385
CO696753	133	155	78	7	M	2	6.0	0.6	0.0	75.4	3386
CI14581	137	164	81	20	M	21	5.0	1.0	0.0	78.9	3287
CI13996	138	164	92	31	S	7	7.0	1.4	1.0	77.2	3288
CI15068	138	162	87	32	S	5	6.3	0.8	0.0	77.1	3289
CI14582	136	161	81	24	M	18	4.7	1.0	0.0	78.9	3273
KS 7016	139	165	92	1	VR	2	6.0	1.0	0.7	76.7	3261
TX62A2712-6	138	164	78	18	M	17	4.3	0.4	0.3	76.4	3262
NB68437	138	164	81	21	S	2	8.0	0.6	0.3	76.0	3263
CI15158	140	162	83	2	M	36	6.7	0.4	0.0	77.3	3264
NB66403	141	168	93	30	S	2	7.3	2.0	2.7	74.3	3187
TX62A2782-4-2	138	167	78	5	MS	9	5.3	0.0	0.3	78.2	3188
KS6623	139	161	91	19	M	5	8.0	0.4	1.0	78.1	3189
CI14584	137	161	82	23	M	15	4.7	0.6	0.3	77.9	3140
CI14583	137	162	81	19	M	9	4.3	1.0	0.0	78.0	3131
TX62A1626	135	157	72	1	M	11	5.3	0.4	0.0	75.3	3132
CI14075	137	164	90	14	M	3	7.0	0.6	1.0	77.5	3103
OK66C3003	137	162	88	1	VR	4	5.3	2.0	0.0	77.4	3084
TX63C92	137 ^{1/}	162	88 ^{1/}	1	VR	2	3.0	0.8	0.7	75.4	3085
CI14078	134	156	84	14	M	12	5.0	1.0	0.0	79.0	3086
CO653033	140	165	96	10	S	4	6.0	0.8	1.7	76.0	3087
CO693494	136	158	88	21	M	11	3.3	1.0	3.3	75.2	2988
CI11673	140	168	97	27	S	13	5.3	2.0	1.0	75.7	2989
CI8856	133 ^{2/}	159	91 ^{2/}	19 ^{1/}	S ^{1/}	25 ^{1/}	5.7	2.0 ^{1/}	1.0	77.5 ^{2/}	2780
CI1442	145	170	97	31	S	25	7.7	2.4	2.7	75.1	2581

^{1/} Average based on 1 trial less than the number shown

^{2/} Average based on 4 trials less than the number shown

NORTHERN REGIONAL PERFORMANCE NURSERY

Nineteen varieties were included in the nursery, 6 of which were new in 1971 and 3 of which were entered in 1971 from the Southern Regional Performance Nursery. Test sites numbered 19 of which 2 (Mead, Nebraska and Aberdeen, Idaho) grew only observation plots. Data were received from 15 sites. Wind erosion during the winter destroyed the nurseries at Alliance, Nebraska and Presho, South Dakota. The Dickinson, North Dakota nursery was abandoned due to poor stand establishment and winterkill. At Waseca, Minnesota the nursery was destroyed by utility installation. Hail in early summer destroyed the Williston, North Dakota NRPN. Entries in the 1971 nursery appear in the listing that follows. Data from reporting nursery sites are contained in table 6. Cooperative Rust Laboratory data are summarized in table 7.

<u>Entry No.</u>	<u>Variety or Pedigree</u>	<u>C.I. or Sel. No.</u>	<u>Source</u>
1	Kharkof	1442	Check
2	Warrior	13190	"
3	Pn/Cnn/3/Pn/2/Ky58/4/Cnn	NB66403	Nebr.
4	Wrr/3/Atl 66/2/Cnn/4/Cnn/Ot	NB68513	"
5**	Ky58/2/Nth/3/Hope/2*Tk/4/Cnn/5/Pk	NB66425	"
6*	Frontana/Cnn/Lancer	NB68493	"
7*	Wrr/2/Atl 66/Cnn/3/Lancer	NB68510	"
8*	Cheyenne/Kharkof MC22 (Sundance)	5520-8	Lethbridge
9*	Bezostaia 1	15158	IWWPN
10	Winoka	14000	So. Dak.
11	Gage/Hume	SD6717	"
12	Recurrent Sel. Series I, Cycle II	SD6753	"
13	Froid	13872	Mont.
14	Trader	13998	Nebr.
15	Trapper	13999	"
16**	Scout Selection (Eagle)	15068	Kans.
17**	Scoutland	14075	Nebr.
18*	Gage/Lancer	NB68427	"
19*	Pnc/3*Cnn/2/Sk/2*Cnn	NB68723	"

** entered from SRPN

* new entry in 1971

Test Site Information

Nebraska Stations--See information for the SRPN.

Archer--Excellent stands in the fall. All entries survived the winter well. There was no effective precipitation after June 3 and yields were reduced. Diseases and insects were no problem.

Sheridan--Stands excellent. Nursery uniform. No winterkill. No effective precipitation after June 3 but entries finished well from stored soil moisture. No diseases or insects of consequence.

Highmore--Fall stand establishment was good. The winter produced excellent differential survival of entries. Drought was severe in early spring but precipitation in June and July was abundant. Grain yields were high.

Presho--Nursery destroyed by high winds in late fall.

Dickinson--Failure due to poor fall stand establishment and heavy winterkill.

Williston--Nursery destroyed by hail.

Casselton--Nursery seeded 2 weeks later than normal because of wet ground. Plants had reached the 2-3 leaf stage at onset of winter. There was good snow cover until the end of February. Heavy winter-killing occurred from low temperatures in March when there was no snow cover. Spring and summer temperatures were moderate and precipitation adequate. Leaf and stem rust became heavy on susceptible entries.

St. Paul--Production conditions not reported.

Waseca--Nursery destroyed by utility installation.

Sidney (Montana)--Excellent conditions in the fall and good stands established. Minimum temperatures as low as -30F° in January and February resulted in good differential winterkill. Spring moisture adequate but drought in early summer forced early ripening of the nursery entries. Diseases and insects were not a problem. Total precipitation for the crop season was approximately 50 mm below normal.

Moccasin--Production conditions not reported. A late freeze partially sterilized the early varieties in the nursery.

Tetonia--Conditions not reported. Stands in the spring were spotty due to winterkilling.

Lethbridge--Excellent nursery. No winterkilling. Conditions during the crop season were generally dry but the limited precipitation was timely and a good crop was made. The spring was cool but there was a period of high temperatures in mid-July.

Clovis--See information for the SRPN.

Table 6.--Yield and other data for varieties grown in
the Northern Regional Performance Nursery in 1971.

North Platte, Nebraska
Three replications

C. I. or Sel. No.	: Yield	: Volume weight	: Plant height
	kg/ha	kg/hl	cm
CI15075	4057	77.1	96
NB68427	3908	77.3	101
NB68493	3898	77.4	104
NB68510	3733	76.2	109
SD6753	3639	76.6	106
CI15074	3625	78.7	106
SD6717	3623	76.9	106
CI13190	3555	75.1	106
NB68723	3528	77.5	106
CI14075	3477	78.2	96
CI15068	3472	76.9	96
CI14000	3400	77.7	114
NB66403	3380	73.1	106
CI13998	3360	75.6	114
CI15158	3302	77.1	93
5520-8	3198	71.6	124
CI13999	3186	74.4	114
CI13872	3141	74.2	126
CI 1442	3029	74.2	119

L.S.D. = 400, C.V. = 6.8%

Sidney, Nebraska
Three replications

C. I. or Sel. No.	: Yield	: Volume weight	: Days to heading	: Plant height
	kg/ha	kg/hl		cm
CI15158	3017	76.4	165	101
CI15068	3009	74.7	166	99
CI15075	2965	70.8	166	109
CI15074	2939	75.7	165	114
CI13190	2913	72.6	167	114
NB68493	2744	75.7	166	110
CI14075	2738	74.8	164	105
NB66403	2716	70.6	167	113
CI13998	2672	77.1	166	114
NB68427	2610	75.2	166	107
CI13999	2597	74.9	166	113
NB68510	2590	72.9	166	117
CI14000	2570	78.4	166	112
5520-8	2527	76.5	167	112
CI 1442	2431	76.8	166	118
NB68723	2423	73.7	165	111
SD6717	2329	72.6	166	106
SD6753	2118	70.9	166	107
CI13872	2078	74.2	166	118

L.S.D. = 416, C.V. = 9.5%

Mead, Nebraska
Observation plots

C. I. or Sel. No.	:	:	Days	:	:	Disease data				
						Yield:	Volume:	to	Plant:	Lodg-:
		weight:	heading:	height:	ing	Sev.:	Resp.:	Sev.	Resp.	
		kg/ha	kg/hl	cm	0-9	%	0-9	%	0-9	
NB68427		4288	76.8	155	107	3	10	8	0	2
NB68493		4276	76.1	152	117	1	10	8	0	2
NB68513		4048	76.8	151	114	1	60	8	0	2
CI14075		3947	76.1	150	107	2	20	8	0	2
CI15075		3911	74.8	151	112	1	5	8	0	2
CI15158		3749	76.1	150	99	0	5	8	20	7
NB68723		3714	76.1	152	117	4	20	8	5	3
CI15068		3696	73.5	151	104	4	20	8	0	2
SD6753		3558	74.8	154	114	3	10	8	0	2
SD6717		3289	74.8	152	119	4	40	8	0	2
NB66403		3271	71.0	155	112	4	20	8	0	2
CI14000		3229	74.8	158	119	4	40	8	0	2
CI1442		3223	72.2	157	112	5	50	8	30	8
CI13190		3169	71.0	155	109	5	40	8	5	7
CI13998		3080	72.2	156	112	5	60	8	5	8
5520-8		3050	67.7	159	119	2	70	8	30	8
CI13999		2894	72.2	156	109	6	60	8	5	8
NB68510		2769	73.5	153	114	4	60	8	0	2
NB13872		2619	70.3	159	117	5	40	8	0	2

Archer, Wyoming
Three replications

C. I. or Sel. No.	: Yield kg/ha	: Volume weight kg/hl	: Days to heading	: Plant height cm
CI14075	1792	76.4	167	87
CI15075	1732	74.3	170	77
CI15074	1641	74.2	167	89
SD6717	1555	76.2	168	82
CI15158	1537	75.6	170	77
NB68427	1530	75.7	170	82
CI15068	1526	73.7	167	82
CI13190	1524	77.1	171	81
CI 1442	1441	76.0	172	86
CI14000	1404	76.8	171	79
NB66403	1387	72.4	169	83
NB68493	1335	75.9	169	83
CI13872	1315	71.3	173	87
5520-8	1291	73.5	173	80
SD6753	1290	71.7	169	80
CI13998	1262	75.7	170	75
NB68723	1236	75.2	170	83
CI13999	1233	73.7	170	76
NB68510	1186	72.0	170	75

L.S.D. = 339, C.V. = 14.2%

Sheridan, Wyoming
Three replications

C. I. or Sel. No.	: Yield kg/ha	: Volume weight kg/hl
CI15075	3209	77.0
CI15158	3188	76.8
NB66403	3112	74.8
NB68493	3062	77.4
5520-8	2979	74.4
CI13998	2943	77.8
NB68427	2938	75.7
CI13190	2871	76.1
CI14000	2734	77.8
CI13999	2722	77.1
CI14075	2715	78.0
SD6717	2686	76.0
CI13872	2576	76.8
SD6753	2568	76.4
NB68723	2553	76.4
CI 1442	2545	76.5
CI15068	2516	77.0
NB68510	2431	78.0
CI15074	2172	77.3

L.S.D. = 563, C.V. 12.2%

Highmore, South Dakota
Three replications

C. I. or Sel. No.	: Yield	: Volume weight	: Plant height	: Surv.	: Lodg.	: Shat.	: Stem Sev.	rus Res
	kg/ha	kg/hl	cm	0-9	0-9	0-9	%	0-9
NB66403	4283	79.1	99	5	0	0	1	2
CI15075	4128	78.9	94	2	0	0	0	2
CI14075	3991	81.3	90	7	0	0	0	2
SD6717	3894	79.6	98	5	0	0	0	2
CI15068	3881	80.8	86	3	0	0	1	2
CI13998	3852	79.2	101	5	0	0	25	8
CI13190	3733	79.3	103	6	0	0	99	8
NB68493	3718	79.9	97	2	0	1	0	2
CI15074	3692	80.6	99	6	0	2	1	8
SD6753	3676	80.0	100	8	0	0	0	2
NB68723	3633	80.4	103	3	0	1	10	8
CI14000	3542	81.0	102	8	2	0	1	8
NB68510	3529	79.6	98	3	0	1	0	2
CI13999	3525	79.2	99	5	0	0	5	8
CI 1442	3479	78.6	106	5	1	0	65	8
NB68427	3427	80.6	96	5	0	1	1	2
CI15158	3346	78.3	81	1	0	0	99	8
5520-8	3298	73.0	110	8	0	0	99	8
CI13872	3149	76.8	110	8	1	0	40	8

L.S.D. = 592, C.V. = 9.7%

Casselton, North Dakota
Three replications

C. I. or Sel. No.	: Yield	: Volume weight	: Days to heading	: Plant height	: Surv:	: Leaf Sev.:	: rust: Resp:	: Stem Sev.
	kg/ha	kg/hl		cm	0-9	%	0-9	%
CI14000	3232	78.7	206	91	7	30	8	5
CI13872	2874	76.8	209	103	8	20	8	5
CI13190	2579	74.2	206	88	1	60	8	80
SD6753	2371	77.4	207	88	3	20	8	5
SD6717	2304	76.1	204	91	4	10	3	5
NB68427	2211	77.4	209	85	1	20	8	0
CI14075	2196	77.4	204	80	2	30	8	0
CI13999	2129	76.1	210	87	0	50	8	20
CI15075	2019	72.2	205	83	2	1	3	5
NB68723	2013	76.1	207	90	1	10	3	50
NB68510	1998	76.1	208	88	1	40	8	0
CI15074	1874	77.4	206	85	2	60	8	0
NB68493	1793	73.5	206	90	1	10	7	10
CI13998	1716	74.2	209	90	1	60	8	20
CI15068	1611	74.8	204	76	1	60	8	30
5520-8	1386	65.8	212	100	7	20	8	80
CI 1442	1177	69.7	210	101	3	70	8	80
CI15158	877	70.9	206	68	2	5	3	99
NB66403	719	67.1	206	85	1	70	8	60

L.S.D. = 1115, C.V. = 36.9%

St. Paul, Minnesota
Three replications

C. I. or Sel. No.	: Yield	: Volume weight	: Days to heading	: Plant height	: Lodg.
	kg/ha	kg/hl		cm	0-9
CI15075	3309	76.8	156	92	0
CI13998	3273	77.4	158	108	0
CI15158	3226	77.4	155	88	0
NB68493	3163	78.0	156	100	0
NB68723	3141	78.7	156	111	4
CI13999	3085	76.8	157	104	0
SD6753	3042	77.4	156	106	0
CI13190	3031	76.8	156	85	0
NB66403	3015	74.2	156	100	0
NB68427	2910	77.4	157	100	2
5520-8	2883	76.1	164	108	0
CI14000	2878	78.7	157	110	0
SD6717	2849	77.4	156	101	0
CI 1442	2614	77.4	157	102	0
CI15074	2603	78.0	154	102	0
CI14075	2576	77.4	155	95	0
CI13872	2571	76.8	157	106	0
NB68510	2477	76.1	157	101	0
CI15068	2199	76.8	154	100	0

L.S.D. = 575, C.V. 11.9%

Sidney, Montana
Three replications

C. I. or Sel. No.	: Yield	: Volume : weight	: Daye to : heading	: Plant : height	: Surv	: Shat
	kg/ha	kg/hl		cm	0-9	0-9
CI15068	2910	79.3	160	84	5	2
CI14075	2829	80.0	160	83	6	6
CI15074	2735	80.0	162	96	5	6
CI15075	2686	75.5	165	89	5	4
NB68427	2641	77.4	165	89	5	6
CI14000	2533	77.4	166	96	6	4
CI15158	2508	77.4	167	83	4	1
CI 1442	2479	74.8	167	99	6	8
SD6753	2479	74.8	163	93	6	2
CI13190	2477	75.5	164	90	5	1
NB68723	2416	77.4	165	94	5	1
SD6717	2396	76.8	162	92	6	6
5520-8	2383	70.3	170	101	7	2
CI13872	2367	72.2	167	106	7	4
CI13999	2336	74.8	167	93	5	2
NB66403	2325	74.2	164	87	4	6
NB68493	2318	76.8	166	89	3	2
NB68510	2215	74.2	167	95	4	2
CI13998	2114	74.8	167	94	4	6

L.S.D. = 258, C.V. = 6.2%

Moccasin, Montana
Three replications

C. I. or Sel. No.	: Yield	: Volume weight	: Daye to heading	: Plant height
	kg/ha	kg/hl		cm
NB68427	2907	79.6	170	78
NB66403	2882	78.6	170	77
CI13190	2817	79.1	171	84
NB68723	2770	80.2	170	81
CI13998	2734	79.3	172	79
CI13999	2716	79.9	172	81
CI15075	2687	79.6	171	79
NB68493	2667	80.6	170	85
CI 1442	2656	78.8	174	89
NB68510	2622	77.5	172	84
SD6753	2595	77.9	169	85
SD6717	2476	77.7	168	91
CI13872	2387	77.3	174	88
CI14000	2313	80.0	174	81
5520-8	2310	74.3	177	85
CI15074	2241	80.0	170	81
CI15158	2129	79.5	171	75
CI15068	1770	77.9	168	75
CI14075	878	75.3	168	77

L.S.D. = 434, C.V. 10.6%

Tetonia, Idaho
Three replications

C. I. or Sel. No.	: Yield	: Volume weight	: Days to heading	: Plant height	: Surv
	kg/ha	kg/hl		cm	0-9
5520-8	2894	75.9	191	82	8
CI14000	2862	78.4	188	76	7
CI 1442	2502	75.3	189	80	7
CI13998	2475	76.8	187	78	7
CI13999	2435	76.8	189	75	7
CI13190	2383	75.2	183	76	7
SD6753	2260	74.6	185	72	8
NB66403	2237	74.0	184	67	6
CI15074	2208	76.5	183	74	7
NB68493	2181	76.2	186	77	6
NB68427	2177	76.5	183	69	7
CI13872	2136	74.9	190	88	7
NB68723	2004	76.6	183	75	6
CI15075	1845	78.0	184	72	5
SD6717	1762	74.9	183	78	5
NB68510	1733	76.4	187	75	5
CI14075	1610	77.1	181	71	5
CI15068	1606	77.5	183	67	5
CI15158	1474	76.8	186	70	4

L.S.D. = 555, C.V. = 15.5%

Aberdeen, Idaho
Observation plots

C. I. or Sel. No.	: Yield	: Volume weight	: Days to heading	: Plant height	: Lodg- ing
	kg/ha	kg/hl		cm	0-9
CI15075	7492	81.9	162	104	3
NB68427	6588	82.0	165	99	1
NB68513	6559	82.9	165	109	5
CI14000	6472	82.9	168	132	3
CI13998	6117	81.3	167	114	6
NB68723	6103	81.9	162	104	1
NB66403	6099	80.8	165	109	7
CI15068	5979	81.9	161	99	2
CI13872	5859	79.7	170	127	6
CI13190	5785	78.2	167	112	7
NB68493	5693	81.3	162	114	1
CI13999	5683	81.9	167	119	6
SD 6717	5674	82.9	160	122	3
SD 6753	5660	81.4	161	114	3
NB68510	5527	78.9	167	114	3
CI15158	5388	80.8	165	99	1
CI 1442	4973	77.5	168	122	7
CI14075	4761	82.2	161	97	1
5520-8	4396	75.7	--	112	3

Lethbridge, Alberta
Three replications

C. I. or Sel. No.	: Yield	: Volume weight	: Days to heading	: Days to ripe	: Plant height	: Surv
	kg/ha	kg/hl			cm	0-9
CI13190	2781	80.0	159	197	77	9
NB66403	2749	80.6	159	197	76	9
CI15075	2687	81.1	159	197	72	9
CI14075	2678	82.4	159	198	74	9
CI15068	2539	81.1	159	198	72	9
NB68493	2510	82.4	160	197	76	9
5520-8	2477	75.6	166	198	80	9
NB68510	2459	79.3	159	197	77	9
CI15158	2449	81.1	160	197	77	9
CI13999	2423	80.6	161	198	84	9
NB68427	2397	81.8	159	198	75	9
CI15074	2377	83.1	159	197	79	9
CI13998	2375	80.0	161	198	77	9
SD6753	2301	79.3	160	197	76	9
CI14000	2282	80.0	163	197	79	9
NB68723	2272	81.1	159	198	82	9
CI13872	2198	76.2	166	198	89	9
CI 1442	2152	79.3	162	197	80	9
SD6717	1887	80.0	159	197	74	9

L.S.D. = 306, C.V. = 7.6%

Clovis, New Mexico
Three replications, Irrigated

C. I. or Sel. No.	: Yield	: Volume weight	: Days to heading	: Plant height
	kg/ha	kg/hl		cm
NB66403	4886	79.2	129	101
CI15075	4685	80.5	128	95
CI15158	4617	70.0	130	90
CI15068	4456	78.6	126	90
CI15074	4240	79.7	130	96
CI 1442	4159	77.9	135	110
SD6753	4079	78.2	128	96
CI13999	4038	77.1	132	106
NB68723	4025	77.8	128	97
NB68427	3863	79.8	131	94
CI13190	3850	78.2	132	95
NB68510	3836	78.8	131	101
CI14000	3729	79.1	136	103
CI13998	3581	77.1	131	106
CI14075	3526	79.3	126	90
SD6717	3513	77.5	128	97
NB68493	3500	79.3	130	96
CI13872	3150	76.6	136	106
5520-8	1615	77.4	136	100

L.S.D. = 956, C.V. = 14.9%

Clovis, New Mexico
Three replications, Dryland

C. I. or Sel. No.	: Yield kg/ha	: Days to heading	: Plant height cm
NB68493	929	126	44
CI13998	875	130	39
NB66403	767	129	39
NB68723	767	128	40
CI13999	740	131	41
CI14075	740	123	41
CI15158	632	133	34
NB68510	619	129	36
CI15075	592	131	34
NB68427	565	132	35
CI13872	536	134	39
CI 1442	511	134	37
CI15074	498	127	41
CI13190	471	131	34
SD6753	417	131	33
CI14000	350	131	39
SD6717	350	127	36
CI15068	309	130	28
5520-8	215	134	35

L.S.D. = 300, C.V. = 31.4%

Table 7.--Seedling reaction to isolates of stem rust and field reaction to leaf and stem rust of entries in the Northern Regional Performance Nursery at St. Paul, Minnesota in 1971. (Data provided by D. McVey, Cooperative Rust Laboratory.)

C. I. or Sel. No.	<u>Puccinia graminis tritici</u> Race and Isolate										Field Reaction			
	32			15	15B-2	31		151		113	Leaf rust		Stem rust	
	70-21-523(1)	70-M-003(1)	70-11-98(2)	70-39-659(2)	65-39-2	70-18-231(1)	70-21-1413(4)	70-21-528(1)	70-41-71(1)	70-39-661(1)	Severity (%)	Response	Severity (%)	Response
1442	3	3	3	3+	3	3+	3	3	3	3	-	-	-	-
13190	3	23	23	3+	3	3	23	23	3	3	60	S	60	MS-S
NB66403	3	3	3	0;	0;	-	2	23	3	3	20	S	20	R-MR
NB68513	3	3	0;	0;	0;	3	3	-	0;	0;	60	S	60	MS-S
15075	3	3+	0;	0;	0;	0;	3	3	0;	0;	5	MS	20	MS-S
NB68493	2	0;	3	0;	0;	2	3	3	3	0;	7	MR-MS	10	MS-S
NB68510	2	23	0;	0;	0;	0;	32	23	0;	0;	20	S	7	R
5520-8	3+	3	3	3+	3+	3	3	3	3	3	40	S	60	S
15158	3	3	3	3	3	3	3	3	3	3	5	MS	40	S
14000	3	3	3	3+	3	3	3	23	3	3	40	S	7	R
SD6717	23	23	0;	X-	3	0;1	23	23	0;	0;	20	MS-S	7	R
SD6753	2-	23	0;	0;	0;	2	2-	-	0;	0;	40	MS-S	5	R
13872	23	23	0;	3	3	23	23	3	0;	0;	40	MS-S	T-20	R-S
13998	3	0;	23	0;1	0;	0;	3-	3	23	3	40	S	4	MR-S
13999	3	3	3	0;	0;	0;	3	3	3	3	60	S	20	MS-S
15068	23	23	0;	3+	3	3	2-	-	0;	0;	40	S	20	MR-S
14075	3+	3	0;	0;1	0;	3+	3	3	0;	0;	40	S	7	R-MR
NB68427	2-	2	0;	X	0;	0;1	2-	0;1	0;	0;	20	MS-S	7	R-MR
NB68723	3	13	-	0;1	0;	0;	1	13	-	0;	40	S	60	MS-S

Summary of NRPN Yields

Yields reported from 13 test sites are summarized in table 8. Centurk, Warrior, NB66403 and NB68427 were highest yielding. Centurk ranked first in Nebraska, Wyoming, and Minnesota, and second in South Dakota, New Mexico, and Montana. Its regional mean yield was 2815 kg/ha (42.2 bu/a). Warrior also exhibited consistently good performance.

The 2-year mean yields for 10 varieties tested in the NRPN in 1970 and 1971 are summarized in table 9. The highest mean yield of 2952 kg/ha over 2 years was recorded for NB66403. Trapper, Warrior, and Trader in that order have made the next best mean yields.

Regression coefficients, correlation coefficients, and coefficients of determination from linear regression analyses of variety yield on nursery mean yield for entries in the Northern Regional Performance Nursery in 1971 appear in table 9a together with mean yields. Centurk was substantially higher yielding on the average than other varieties and exhibited the strongest response to favorable environment ($b_{y \cdot x} = 1.21$). Its yield also was most highly correlated with nursery mean yield ($r = .99$) and its yields showed the closest fit to the regression line ($r^2 = .97$). The least response to environmental changes was shown by 5520-8. The yields of 5520-8 also were least correlated with nursery mean yields and only 52% of its total variation in yield was explainable by the nursery mean.

Summary of Agronomic Data

Agronomic data for varieties in the NRPN are summarized in table 10. Centurk exhibited the best combined resistance to leaf and stem rust. Scoutland was earliest heading on the average and Bezostaia had the shortest straw. CI13872 and Sundance had the best winter survival ratings and Bezostaia the poorest. Bezostaia was the only variety for which no lodging was recorded and it and Warrior shattered the least. Highest test weight was made by Winoka.

Table 8. Summary of mean yields for 19 varieties grown in the Northern Regional Performance Nursery at 13 sites in 1971, with state averages and ranks.

	: C. I. :	: New Mexico :			: Nebraska :			:South Dakota:		
	: or :	: Aver-:			:North:			:Aver-: :High-:		
Variety	: Sel. No.:	Clovis:	Clovis:	age	:Rank:	Platte:	Sidney:	age	:Rank:	more:Rank
		dryl irrig								
Centurk	CI15075	592	4685	2639	2	4057	2965	3511	1	4128 2
Warrior	CI13190	471	3850	2161	14	3555	2913	3234	6	3733 7
Pn/Cnn/3/Pn/2/Ky 58/4/Cnn	NB66403	767	4886	2827	1	3380	2716	3048	10	4283 1
Gage/Lancer	NB68427	565	3863	2214	13	3908	2610	3259	4	3427 16
Winoka	CI14000	350	3729	2040	16	3400	2570	2985	12	3542 12
Frontana/Cnn//Lancer	NB68493	929	3500	2215	12	3898	2744	3321	2	3718 8
Trader	CI13998	875	3581	2228	10-11	3360	2672	3016	11	3852 6
Trapper	CI13999	740	4038	2389	5	3186	2597	2892	15	3525 14
Wrr/3/Atl 66/2/Cnn/4/Cnn/Ot (NB68513)	CI15074	498	4240	2369	7	3625	2939	3282	3	3692 9
Recurrent Sel. Series I, Cycle II	SD6753	417	4079	2248	9	3639	2118	2879	16	3676 10
Pnc/3Cnn/2/Sk/2 Cnn	NB68723	767	4025	2396	4	3528	2423	2976	13-14	3633 11
Bezostaia 1	CI15158	632	4617	2625	3	3302	3017	3159	8	3346 17
Scout Selection (Eagle)	CI15068	309	4456	2383	6	3472	3009	3241	5	3881 5
Scoutland	CI14075	740	3526	2133	15	3477	2738	3108	9	3991 3
Gage/Hume	SD6717	350	3513	1932	17	3623	2329	2976	13-14	3894 4
Wrr/2/Atl 66/Cnn/3/Lancer	NB68510	619	3836	2228	10-11	3733	2590	3162	7	3529 13
Kharkof	CI1442	511	4159	2335	8	3029	2431	2730	18	3479 15
Froid	CI13872	536	3150	1843	18	3141	2078	2610	19	3149 19
Cheyenne/Kharkof MC 22 (Sundance)	5520-8	215	1615	915	19	3198	2527	2863	17	3298 18

Table 8. (continued)

C. I.	:North Dakota :			Wyoming :			Montana :				Idaho :	
or	:Cassel-:			:Sheri-:			: Moc-:				:	
Sel. No:	ton	:Rank	:Archer:	dan	:Average:	Rank	: casin:	Sidney:	Average:	Rank	: Tetonia	: Rank
CI15075	2019	9	1732	3209	2471	1	2687	2686	2687	2	1845	14
CI13190	2579	3	1524	2871	2198	7	2817	2477	2647	3	2383	6
NB66403	719	19	1387	3112	2250	4	2882	2325	2604	4	2237	8
NB68427	2211	6	1530	2938	2234	5	2907	2641	2774	1	2177	10
CI14000	3232	1	1404	2734	2069	11	2313	2533	2423	12	2862	2
NB68493	1793	13	1335	3062	2199	6	2667	2318	2493	9	2181	12
CI13998	1716	14	1262	2943	2103	10	2734	2114	2424	13	2475	5
CI13999	2129	8	1233	2722	1978	14	2716	2336	2526	8	2435	4
CI15074	1874	12	1641	2172	1907	17	2241	2735	2488	10	2208	9
SD6753	2371	4	1290	2568	1929	16	2595	2479	2537	7	2260	7
NB68723	2013	10	1236	2553	1895	18	2770	2416	2593	5	2004	13
CI15158	877	18	1537	3188	2363	2	2129	2508	2319	18	1474	19
CI15068	1611	15	1526	2516	2021	12	1770	2910	2340	17	1606	18
CI14075	2196	7	1792	2715	2254	3	878	2829	1854	19	1610	17
SD6717	2304	5	1555	2686	2121	9	2476	2396	2436	11	1762	15
NB68510	1998	11	1186	2431	1809	19	2622	2215	2419	14	1733	16
CI1442	1177	17	1441	2545	1993	13	2656	2479	2568	6	2502	3
CI13872	2874	2	1315	2576	1946	15	2387	2367	2377	15	2136	11
5520-8	1386	16	1291	2979	2135	8	2310	2383	2347	16	2894	1

Table 8. (concluded)

C. I. or Sel. No.	: Alberta :		: Minnesota :		13
	: Rank :		: Rank :		: Station
	: Lethbridge :		: St. Paul :		: Average
CI15075	2687	3	3309	1	2815
CI13190	2781	1	3031	8	2691
NB66403	2749	2	3015	9	2651
NB68427	2397	11	2910	10	2622
CI14000	2282	15	2878	12	2602
NB68493	2510	6	3163	4	2601
CI13998	2375	13	3273	2	2556
CI13999	2423	10	3085	6	2551
CI15074	2377	12	2603	15	2527
SD6753	2301	14	3042	7	2526
NB68723	2272	16	3141	5	2522
CI15158	2449	9	3226	3	2485
CI15068	2539	5	2199	19	2446
CI14075	2678	4	2576	16	2442
SD6717	1887	19	2849	13	2433
NB68510	2459	8	2477	18	2418
CI1442	2152	18	2614	14	2398
CI13872	2198	17	2571	17	2344
5520-8	2477	7	2883	11	2266

Table 9. Summary of 2-year mean yields for 10 varieties grown at 11 stations in the Northern Regional Performance Nursery in 1970 and 1971.

Variety	: C. I. :	New Mexico				:	Nebraska				:	Idaho	
	: or :	:	:	:Aver-:	:	:North :	:	:Aver-:	:	:Teton-:	:		
	: Sel. No:	Clovis:	Clovis:	age:	Rank:	Platte:	Sidney:	age :	Rank:	ia :	Rank		
		irrig.		dryl.									
Pn/Cnn/3/Pn/2/Ky 58/4/Cnn	NB66403	4410	1417	2914	2	3063	4354	3708	1	2409	4		
Trapper	CI13999	4577	1739	3158	1	2896	3751	3323	6	2559	3		
Warrior	CI13190	3932	1424	2678	5	3097	4085	3591	2	2397	5		
Trader	CI13998	4127	1693	2910	3	2912	3864	3388	4	2577	2		
Wrr/3/Atl 66/2/Cmn/4/Cmn/Ot (NB68513)	CI15074	4221	1008	2614	7	3043	3805	3424	3	2174	7		
Winoka CI	CI14000	4046	1283	2664	6	3078	3461	3269	7	2639	1		
Recurrent Sel. Series I, Cycle II	SD6753	4235	1209	2722	4	3219	3444	3331	5	2092	8		
Kharkof	CI1442	3805	960	2382	8	2576	3453	3015	9	2326	6		
Gage/Hume	SD6717	3623	1115	2369	9	3143	3234	3189	8	1874	10		
Froid	CI13872	3307	1241	2274	10	2663	3056	2859	10	1962	9		

Table 9. (concluded)

C. I. or Sel. No.	:South Dakota:		Wyoming			:	Montana			:	Alberta		11
	:High-:	:	:Sheri-:	Aver-:	:	Moc-:	Aver-:	:	Leth-:	:	Station		
	:more :	Rank:	Archer:	dan :	age :	Rank:	casin:	Sidney:	age :	Rank:	bridge:	Rank:	Average
NB66403	3333	1	2033	2221	2127	3	2600	2472	2536	1	4161	1	2952
CI13999	2796	6	1876	2208	2042	4	2271	2388	2329	6	3966	2	2820
CI13190	2862	5	2054	2359	2206	1	2331	2421	2376	4	3871	3	2803
CI13998	2737	7	2066	2287	2176	2	2369	2330	2349	5	3785	4	2795
CI15074	3033	2	2232	1766	1999	6	2235	2639	2437	3	3357	6	2683
CI14000	2631	9	1914	2073	1993	7	2146	2474	2310	7	3229	8	2634
SD6753	2933	4	1743	1891	1817	10	2242	1978	2110	9	3493	5	2589
CI1442	2733	8	1842	2221	2031	5	2319	2657	2488	2	3215	10	2555
SD6717	2944	3	1967	1909	1938	8	2177	1874	2026	10	3221	9	2462
CI13872	2331	10	1814	1927	1870	9	2260	2076	2168	8	3264	7	2354

Table 9a.--Average yield, regression coefficient, correlation coefficient, and coefficient of determination from linear regression analyses of variety yield on nursery mean yield for entries in the Northern Regional Performance Nursery in 1971.

C.I. or : Sel. No. : :	Average yield : over 13 locations : (kg/ha)	Regression : coefficient : ($b_{y.x}$)	Correlation : coefficient : (r)	Coefficient of determination : (r^2)
CI15075	2815	1.21	.99	.97
CI13190	2691	.96	.97	.94
NB66403	2651	1.25	.93	.87
NB68427	2622	.98	.97	.95
CI14000	2602	.88	.87	.76
NB68493	2601	.95	.97	.94
CI13998	2556	.94	.96	.93
CI13999	2551	.94	.97	.95
CI15074	2527	1.03	.96	.93
SD6753	2526	1.04	.97	.93
NB68723	2522	1.00	.98	.96
CI15158	2485	1.14	.92	.84
CI15068	2446	1.15	.94	.88
CI14075	2442	.90	.84	.70
SD6717	2433	1.00	.96	.91
NB68510	2418	1.00	.97	.94
CI1442	2398	1.00	.95	.91
CI13872	2344	.73	.88	.78
5520-8	2266	.71	.72	.52

Table 10. Summary of agronomic data for varieties grown in the Northern Regional Performance Nursery in 1971.

C. I. or Sel. No.	:Days: : to :Plant	: :head:	: :height:	: :sev.:	: :resp:	: :sev.:	: :resp:	: :surv.:	: :ing	: :ering	: :Volume:	: :age
		cm	%	%				0-9	0-9	0-9	kg/hl	kg/ha
Number of Trials	12	14	2	2	3	2	4	4	2	14	13	
CI15075	162	86	3	M	2	R	3.5	0.3	2.0	77.0	2815	
CI13190	164	90	50	S	61	S	4.8	1.3	0.5	76.3	2691	
NB66403	163	90	45	S	20	R	4.0	1.0	3.0	75.0	2651	
NB68427	164	87	15	S	0	R	4.5	1.2	3.5	78.1	2622	
CI14000	165	95	35	S	2	M	7.0	1.5	2.0	78.7	2602	
NB68493	162	92	10	S	3	R	3.0	0.3	1.5	77.9	2601	
CI13998	165	93	60	S	17	S	4.3	1.3	3.0	77.0	2556	
CI13999	165	93	55	S	10	M	4.3	1.5	1.0	76.8	2551	
CI15074	162	92	60	S	0	M	5.0	0.3	4.0	78.6	2527	
SD6753	163	91	15	S	2	R	6.3	0.8	1.0	76.5	2526	
NB68723	162	92	15	M	22	M	3.8	2.0	1.0	77.8	2522	
CI15158	163	81	5	M	73	S	2.8	0.0	0.5	77.4	2485	
CI15068	161	83	40	S	10	R	3.5	1.0	1.0	77.5	2446	
CI14075	160	85	25	S	0	R	5.0	0.5	3.0	78.3	2442	
SD6717	161	92	25	M	2	R	5.0	1.0	3.0	77.1	2433	
NB68510	164	92	50	S	0	R	3.3	1.0	1.5	76.4	2418	
CI1442	166	97	60	S	58	S	5.3	1.5	4.0	76.1	2398	
CI13872	167	101	30	S	15	M	7.5	1.5	2.0	75.3	2344	
5520-8	168 ^{1/}	96	45	S	70	S	7.5	0.5	1.0	73.4	2266	

^{1/} Average based on 1 trial less than the number shown.

QUALITY DATA

One-pound samples of seed of each entry in the SRPN and NRPN are submitted to the Hard Winter Wheat Quality Laboratory, Manhattan, Kansas from every nursery site from which a grain crop is harvested. Complete quality evaluation is done on a regional composite of each variety in the two nurseries. Results are reported directly to the cooperators by K. F. Finney.

UNIFORM WINTERHARDINESS NURSERY

The nursery is comprised of two sections according to the origin of entries. A Southern Materials Section includes wheats from Texas, Oklahoma, Colorado, and Nebraska as well as entries from the SRPN and NRPN. The Northern Materials Section contains wheats submitted from Wyoming, South Dakota, North Dakota, Minnesota, and Montana. Entries were grown in 2 replications of single-row plots with check varieties at 10-row intervals except at Sidney, Montana where the hill planting was used.

The Southern Section contained 283 entries which are identified in the list that follows. Survival data from four reporting stations are summarized in table 11.

One hundred fourteen entries in the Northern Section are listed and winter survival data from 4 sites are reported in table 12.

SOIL-BORNE MOSAIC NURSERY

This nursery was grown at Urbana, Illinois and Powhattan, Kansas on soil known to be infected with the soil-borne mosaic virus. Forty-eight varieties were tested. Data were not obtained from Urbana due to a warm, dry spring in which symptoms failed to develop sufficiently for reading. Data were reported from Kansas. Varieties in the 1971 nursery appear in the list that follows. Powhattan infection data are summarized in table 13.

1971

UNIFORM WINTERHARDINESS NURSERY
Southern Materials Section

Entry No.	Pedigree	C.I. or Sel. No.	Source
1	Scout 66	13996	Ck
2	Early Blackhull	8856	SRPN
3	Comanche	11673	"
4	Pn/Cnn/3/Pn/2/Ky58/4/Cnn	NB66403	"
5	Ky58/2/Nth/3/Hope/2*Tk/4/Cnn/5/Pkr	NB66425	"
6	Tmp64/5/Wi/4/(Wi/3/T.sp./Ae/2/Pn)F ₁ x-ray	OK66C3003	"
7	391-56-D8/Tascosa	TX62A2782-4-2	"
8	391-56-D8/Kaw	TX62A2522-1-4	"
9	391-56-D8/Kaw	TX62A2522-8-2	"
10	Warrior	13190	Ck
11	391-56-D8/Kaw	TX65A1503-1	SRPN
12	5*Scout/Agent	KS7016	"
13	Scout/C.I.12995	C0653033	"
14	Ndd63/C0652643/Guide	C0693494	"
15	Sn-4/Tpr2/C0652961	C0695552	"
16	Ptc/Y54/Tzp/Nar/Tpr/Wrr	C0696753	"
17	Ptc/Y54/Tzp/Nar/Tpr/2961	C0696317	"
18	Scoutland	14075	"
19	Scout Selection	KS6728	"
20	Minter	12138	Ck
21	3*Parker/Bison	KS6623	SRPN
22	Palo Duro	14584	"
23	Satanta	14582	"
24	Chanute	14581	"
25	Yukon	14583	"
26	Scout/C.I.12995	NB68435	"
27	Sut/4/Ky58/Nth/2/Cnn/Tm/Mi/Hope/3/Pn/Cnn	NB68437	"
28	Bezostaia		
29	Wrr/3/Atlas 66/2/Cmn/4/Cmn/Ot	NB68513	NRPN
30	Scout 66	13996	Ck
31	Frontana/Cnn//Lancer	NB68493	NRPN
32	Wrr/2/Atl 66/Cmn/3/Lancer	NB68510	"
33	Cheyenne/Kharkof MC22	5520-8	"
34	Gage/Hume	SD6717	"
35	Recurrent Sel. Series I, Cycle II	SD6753	"
36	Winoka	14000	"
37	Froid	13872	"
38	Trader	13998	"
39	Trapper	13999	"
40	Warrior	13190	Ck
41	Pronto		SRPN
42	391-56-D8/Triumph	TX65A1626	"
43	1826-1/Parker	TX65A1268	"
44	391-56-D8/Tascosa	TX62A2712-6	"
45	Gage	13532	Nebr.
46	Parker	13285	Kans.
47	Scout	13546	"
48	Triumph 64	13679	"
49	Tmp/Bsn	KS65274	"
50	Minter	12138	Ck

1971 Uniform Winterhardness Nursery (Southern Materials Section) continued

<u>Entry No.</u>	<u>Pedigree</u>	<u>C.I. or Sel. No.</u>	<u>Source</u>
51	4*Parker/Agent	KS70356	Kans.
52	Tmp/Bsn	KS65238	"
53	Cch/Pkr	KS69123	"
54	Tmp/Bsn	KS65243	"
55	"	KS65251	"
56	"	KS65345	"
57	"	KS65388	"
58	Tmp/C.I.12406	OK638468	"
59	"	OK638521	"
60	Scout 66	13996	Ck
61	Tmp/Ag	OK646395	Okla.
62	"	OK646408	"
63	Cch/3/Tst/Hry//2*Pn	SV65508	"
64	"	SV65510	"
65	5*Sut/Ag	OK696760	"
66	"	OK696740	"
67	"	OK696731	"
68	"	OK696770	"
69	"	OK696759	"
70	Warrior	13190	Ck
71	Tmp64/T ₁	OK66C3190	Okla.
72	"	OK66C111C	"
73	"	OK66C2953	"
74	Tcs/T ₁	OK66C2012	"
75	"	OK66C2108	"
76	Complex Cross	OK648813	"
77	"	OK649033	"
78	SS/C.I.12500//Pn/3/Kaw	OK696453	"
79	"	OK696454	"
80	Minter	12138	Ck
81	SS/C.I.12500//Pn/3/Kaw	OK696445	Okla.
82	"	OK696436	"
83	Gage Sel.	NB65409	Nebr.
84	NB66425 LR Composite	NB69293	"
85	NB66425 GH Composite	NB69291	"
86	Atl 66/Cmn//Wrr	NB66553	"
87	Triticale	NB69150	"
88	Gage/Lcr	NB68427	"
89	Sut/C.I.12995	NB68432	"
90	Scout 66	13996	Ck
91	Sut/C.I.12995	NB68433	Nebr.
92	Sut/4/Ky58/Nth//Cnn/Tm/Mi/Hope/3/Pn/Cnn	NB68440	"
93	"	NB68446	"
94	Pnc/Cnn//Sut	NB68455	"
95	MM/Ech/Rm//2*(Hope/Tk/Cnn)/3/Pnc/2*Cnn	NB68463	"
96	MM/Ech/Rm//2*(Hope/Tk/Cnn)/3/Lcr	NB68465	"
97	Frontana/Cnn//Lcr	NB68488	"
98	"	NB69429	"
99	"	NB69430	"
100	Warrior	13190	Ck
101	2*Wrr/Minn III-54-12//Gage	NB68508	Nebr.
102	"	NB69447	"

1971 Uniform Winterhardness Nursery (Southern Materials Section) continued

Entry No.	Pedigree	C.I. or Sel. No.	Source
103	CI13548//Atl 66/Cmn/3/Lcr	NB68570	Nebr.
104	Cnn/Pnc//Tk/Cnn/3/Sut	NB68521	"
105	Mida/Ky117A//2*(Hope/2*Tk)/3/Pk/4/Gage	NB68573	"
106	SS/C.I.12500/3/Pn/Cnn/4/Cnn/Pnc//Tk/Cnn	NB68719	"
107	Pnc/3*Cnn//Sk/2*Cnn	NB68723	"
108	Pkr/3/Ill 1/2*Cns/Tt//Cnn/Tm/Mi/Hope	NB69412	"
109	Gage/C.I.12995	NB69416	"
110	Minter	12138	Ck
111	Pnc/3*Cnn/3/Ky58/Nth//2*(Cnn/Tm/Mi/Hope)/4/Sut	NB69441	Nebr.
112	"	NB69442	"
113	Wrr/3/Ky58/Nth//2*(Cnn/Tm/Mi/Hope)/4/Pkr	NB69452	"
114	"	NB69457	"
115	"	NB69459	"
116	Atl 66/Cmn//Om/3/Cnn/Tt	NB69461	"
117	Ky/Mta/2*Cnn//SS/C.I.12500/2*Cnn	NB69484	"
118	"	NB69485	"
119	"	NB69486	"
120	Scout 66	13996	Ck
121	Red Egyptian/Nbr//Pnc/3*Cnn	NB69487	Nebr.
122	"	NB69488	"
123	Mara/Sut//Lcr	NB69541	"
124	Atl 66/Wi//Pk/3/Lcr	NB69554	"
125	"	NB69555	"
126	SS/C.I.12500/RCh/Pn//Cnn/4/Wrr/Atl 66/Cmn/3/Lcr	NB69559	"
127	SS/C.I.12500/RCh/Pn//Cnn/3/Guide	NB69560	"
128	Aniversario/3/Nbr//Cnn/Ky/Mta	NB69565	"
129	"	NB69566	"
130	Warrior	13190	Ck
131	SS/C.I.12500/Pn/Cnn//SS/C.I.12500/RCh/Pn/3/Cnn	NB69580	Nebr.
132	"	NB69581	"
133	"	NB69582	"
134	Cnn/Pnc/Tk/Cnn//Ky 58/Nth/2*(Cnn/Tm/Mi/Hope)	NB69602	"
135	Trapper/Shawnee	NB69621	"
136	Cnn//Nbr/Ky/Mta/3/Sel 14/53-101	NB69633	"
137	"	NB69637	"
138	Sel 14/53/101//Trapper	NB69642	"
139	"	NB69644	"
140	Minter	12138	Ck
141	NB Rest 3135/C.I.13548	NB69666	Nebr.
142	NB Rest 3135/Winalta	NB69677	"
143	NB Rest 3851/Rest 4160	NB69704	"
144	Atl 66/Wi//Scout	NB69774	"
145	Tpr 3/Sn642/Tzp/Y544/Sut	C0692388	Colo.
146	"	C0692413	"
147	"	C0692466	"
148	"	C0692547	"
149	"	C0692628	"
150	Scout 66	13996	Ck
151	Tpr 3/Sn642/Tzp/Y544/Sut	C0692675	Colo.
152	"	C0692678	"
153	Mex 71043/C06526432/Lcr	C0692781	"
154	Sn64/Tpr2/C0652961	C0695552	"

1971 Uniform Winterhardiness Nursery (Southern Materials Section) continued

<u>Entry No.</u>	<u>Pedigree</u>	<u>C.I. or Sel.No.</u>	<u>Source</u>
155	Mex 71043/C06526432/Lcr	C0692880	Colo.
156	"	C0692936	"
157	Sn64/Tpr 2/C0652961	C0695552	"
158	Ndd63/C06526432/Guide	C0693427	"
159	"	C0693429	"
160	Warrior	13190	Ck
161	Ndd63/C06526432/Guide	C0693494	Colo.
162	"	C0693523	"
163	"	C0693531	"
164	Bonza/C06526432/C0652972	C0693559	"
165	"	C0693591	"
166	"	C0693640	"
167	"	C0693719	"
168	Sn642/Tzp/Y543/Sut4/Wrr	C0695181	"
169	Sn642/Tzp/Y543/Sut4/2792	C0695223	"
170	Minter	12138	Ck
171	Sn642/Tzp/Y543/Sut4/Lcr	C0695284	Colo.
172	"	C0695321	"
173	"	C0695341	"
174	Sn642/Tzp/Y543/Tpr4/C043	C0695366	"
175	"	C0695375	"
176	Sn64/Tpr2/Wrr	C0695396	"
177	"	C0695401	"
178	"	C0695417	"
179	"	C0695433	"
180	Scout 66	13996	Ck
181	Sn64/Tpr/Wrr	C0695444	Colo.
182	Sn64/Tpr/C0652961	C0695577	"
183	"	C0695625	"
184	"	C0695708	"
185	"	C0695709	"
186	"	C0695711	"
187	"	C0695713	"
188	"	C0695718	"
189	"	C0695725	"
190	Warrior	13190	Ck
191	Sn64/Tpr/C0652961	C0695776	Colo.
192	"	C0695871	"
193	Ndd632/Tmp/124063/Guide	C0695919	"
194	"	C0696075	"
195	Ndd632/Tmp/124063/OK59R2	C0696185	"
196	Ptc/Y54/Tzp/Nar/Tpr/2961	C0696317	"
197	"	C0696370	"
198	Ptc/Y54/Tzp/Nar/Tpr/Wrr	C0696753	"
199	Ptc/Y54/Tzp/Nar/Sut/Lcr	C0696795	"
200	Minter	12138	Ck
201	Ptc/Y54/Tzp/Nar/Sut/Lcr	C0697049	Colo.
202	NB643082/Sut/C.I.12995	C0698500	"
203	C0652422/Chris 2/Tmp 64	C0699225	"
204	"	C0699272	"
205	"	C0699324	"
206	"	C0699361	"

1971 Uniform Winterhardness Nursery (Southern Materials Section) continued

<u>Entry No.</u>	<u>Pedigree</u>	<u>C.I. or Sel. No.</u>	<u>Source</u>
207	Chris 2/Lcr/Gage 3/Tmp/406	C0699370	Colo.
208	"	C0699442	"
209	Ndd63/C0652643	C0912069	"
210	Scout 66	13996	Ck
211	Ndd63/C0652643	C0912079	Colo.
212	"	C0912094	"
213	"	C0912150	"
214	Lancer/KS62136	C0672007	"
215	Om/A66/Cnn/12995/C01/Sut	C0672135	"
216	Scout/Warrior	C0662079	"
217	Lancer/KS62136	C0672042	"
218	Scout/C.I.12995	C0673075	"
219	Tmp/C.I.12406	OK638543	Kans.
220	Warrior	13190	Ck
221	Cch/Tmp//Kaw	KS66547	Kans.
222	"	KS66559	"
223	"	KS66618	"
224	"	KS66620	"
225	Oro//Mi/Hope/3/Ky1373/4/Pn/Cmn/5/Tmp	KS70533	"
226	"	KS70536	"
227	"	KS70537	"
228	"	KS70538	"
229	"	KS70558	"
230	Minter	12138	Ck
231	Oro//Mi/Hope/3/Ky1373/4/Pn/Cmn/5/Tmp	KS70562	Kans.
232	Tmp//7*Wi/Tf	KS70574	"
233	"	KS70582	"
234	"	KS70583	"
235	"	KS70585	"
236	"	KS70586	"
237	Cch//Tst/2*Pn/3/Tmp	KS69242	"
238	Cch/Pkr	KS69127	"
239	"	KS69128	"
240	Scout 66	13996	Ck
241	Cch/Pkr	KS69132	Kans.
242	"	KS69133	"
243	"	KS69135	"
244	"	KS69137	"
245	"	KS69142	"
246	"	KS69143	"
247	"	KS69146	"
248	"	KS69149	"
249	"	KS69154	"
250	Warrior	13190	Ck
251	Cch/Pkr	KS69157	Kans.
252	"	KS69159	"
253	"	KS69160	"
254	"	KS69174	"
255	"	KS69177	"
256	Agent/4*Sut	KS70H105	"
257	"	KS70H112	"
258	"	KS70H130	"

1971 Uniform Winterhardiness Nursery (Southern Materials Section) concluded.

<u>Entry No.</u>	<u>Pedigree</u>	<u>C.I. or Sel. No.</u>	<u>Source</u>
259	Agent/4*Sut	KS70H134	Kans.
260	Minter	12138	Ck
261	Agent/4*Sut	KS70H173	Kans.
262	"	KS70H175	"
263	"	KS70H178	"
264	"	KS70H179	"
265	"	KS70H181	"
266	"	KS70H198	"
267	Agent/5*Bsn	KS71H1	"
268	Tcs/Pkr	KS69205	"
269	Tcs/Pkr	KS69207	"
270	Scout 66	13996	Ck
271	Tcs/Pkr	KS69219	Kans.
272	"	KS69221	"
273	"	KS69228	"
274	"	KS69233	"
275	Tcs/Ot	KS70153	"
276	"	KS70154	"
277	"	KS70155	"
278	"	KS70157	"
279	"	KS70158	"
280	Warrior	13190	Ck
281	Tcs/Ot	KS70159	Kans.
282	"	KS70164	"
283	Minter	12138	Ck

WINTER SURVIVAL
Uniform Winterhardiness Nursery
Southern Materials Section
1971

<u>Entry No.</u>	<u>Sidney Montana</u> 1/	<u>Brookings So. Dakota</u> %	<u>St. Paul Minnesota</u> %	<u>Casselton No. Dakota</u> %	<u>3-Station Average</u> %
1	1.8	80	100	35	72
2	0.5	45	99	2	49
3	2.5	57	99	6	54
4	2.8	68	99	3	57
5	2.0	73	100	30	68
6	1.0	27	99	1	42
7	1.2	23	100	1	41
8	2.2	40	99	1	47
9	2.2	52	99	1	51
10	2.5	77	99	40	72
11	2.0	32	100	0	44
12	2.2	68	99	8	58
13	1.5	58	100	8	55
14	0.8	18	100	1	40
15	1.0	23	94	1	39
16	1.5	28	97	1	42
17	0.8	5	97	0	34
18	3.2	85	99	40	75
19	3.0	68	99	20	62
20	4.0	93	100	70	88
21	3.0	78	99	3	60
22	0.8	27	90	0	39
23	1.0	13	90	0	34
24	1.5	18	83	0	34
25	0.8	24	90	0	38
26	2.0	70	97	33	67
27	2.5	70	100	25	65
28	2.2	47	100	35	61
29	2.8	80	100	20	67
30	3.2	70	100	5	58
31	2.8	65	98	15	59
32	3.2	67	100	4	57
33	3.8	80	100	90	90
34	3.2	72	99	20	64
35	3.8	68	99	50	72
36	4.2	78	97	65	80
37	4.2	90	100	93	94
38	3.8	58	99	28	62
39	3.0	50	100	23	58
40	3.8	67	100	28	65
41	0.8	16	96	0	37
42	1.2	24	98	0	41
43	2.2	41	100	8	50
44	0.8	23	92	1	39
45	2.5	39	97	3	46
46	2.5	36	94	16	49
47	3.2	37	99	38	58

1971

UWPN Southern Materials Section Winter Survival (continued)

<u>Entry No.</u>	<u>Sidney Montana</u>	<u>Brookings So. Dakota</u>	<u>St. Paul Minnesota</u>	<u>Casseltown No. Dakota</u>	<u>3-Station Average</u>
48	1.2	23	99	1	41
49	3.0	43	100	3	49
50	3.8	88	99	75	87
51	2.0	38	99	6	48
52	1.5	48	98	1	49
53	2.0	45	94	1	47
54	1.5	57	98	8	54
55	2.0	26	94	5	42
56	1.8	34	100	2	45
57	2.0	49	100	5	51
58	2.0	48	100	4	51
59	2.2	39	97	4	47
60	3.0	61	100	3	55
61	1.8	27	99	1	42
62	2.0	16	97	3	39
63	0.8	4	99	1	35
64	0.8	2	87	1	30
65	2.8	68	100	13	60
66	2.8	65	100	8	58
67	3.0	60	100	4	55
68	2.8	63	100	20	61
69	3.0	63	100	20	61
70	3.5	75	99	30	68
71	1.5	32	98	6	45
72	2.0	33	99	1	44
73	2.5	37	99	1	46
74	2.0	33	99	1	44
75	2.0	29	97	0	42
76	2.2	33	99	1	44
77	1.0	25	91	1	39
78	2.2	41	97	2	47
79	1.2	44	97	1	47
80	4.5	87	99	85	90
81	2.2	53	94	3	50
82	1.5	52	85	6	48
83	2.2	63	99	35	66
84	3.0	68	95	70	78
85	3.5	75	97	30	67
86	3.5	72	96	13	60
87	3.5	68	99	8	58
88	3.5	72	100	11	61
89	2.8	73	100	6	60
90	4.0	70	100	6	59
91	3.2	67	97	3	56
92	3.8	63	92	3	53
93	2.5	62	97	8	56
94	3.2	62	94	8	55
95	3.8	67	99	35	67
96	3.8	73	94	50	72
97	3.2	73	95	30	66
98	3.8	83	99	25	69

1971

UWEN Southern Materials Section Winter Survival (continued)

<u>Entry No.</u>	<u>Sidney Montana</u>	<u>Brookings So. Dakota</u>	<u>St. Paul Minnesota</u>	<u>Casselton No. Dakota</u>	<u>3-Station Average</u>
99	3.5	83	100	18	67
100	3.5	85	100	16	67
101	3.5	83	100	21	68
102	3.0	68	98	23	63
103	3.2	68	88	16	57
104	3.8	85	100	36	74
105	3.0	80	100	21	67
106	3.2	82	95	31	69
107	3.5	83	100	38	74
108	3.2	68	97	20	62
109	3.2	67	97	3	56
110	4.0	90	97	80	89
111	3.8	88	99	3	63
112	4.0	87	99	6	64
113	4.0	88	100	26	71
104	4.0	88	100	11	66
105	3.0	83	99	2	61
106	2.5	65	94	2	54
107	3.5	75	100	6	60
108	3.2	77	97	11	62
119	3.8	80	100	10	63
120	3.2	73	100	26	66
121	3.0	63	100	36	66
122	2.2	58	100	26	61
123	2.5	65	97	35	66
124	1.2	52	97	5	51
125	1.0	57	98	6	54
126	2.2	60	100	6	55
107	1.5	62	99	6	56
128	2.2	62	99	10	57
129	2.5	65	98	3	55
130	3.2	82	100	11	64
131	2.5	43	97	1	47
132	3.2	82	100	6	63
133	3.0	87	100	6	64
134	3.2	80	100	15	65
135	3.0	83	100	3	62
136	2.2	73	99	3	58
137	2.2	70	100	1	57
138	2.5	73	99	1	58
139	2.2	78	97	3	59
140	4.0	92	99	85	92
141	3.5	90	99	6	65
142	3.8	73	99	6	59
143	2.5	63	96	1	53
144	3.8	73	100	3	59
145	3.5	70	99	3	57
146	3.8	75	97	3	58
147	1.8	18	90	1	36
148	1.2	21	100	0	40

1971

UWHN Southern Materials Section Winter Survival (continued)

<u>Entry +No.</u>	<u>Sidney Montana</u>	<u>Brookings So. Dakota</u>	<u>St. Paul Minnesota</u>	<u>Casseltown So. Dakota</u>	<u>3-Station Average</u>
149	0.8	8	90	1	33
150	3.0	82	100	3	62
151	2.8	37	97	0	45
152	2.2	27	98	0	42
153	2.5	27	95	0	41
154	2.2	33	97	1	44
155	2.2	43	82	1	42
156	0.0	1	5	0	2
157	2.2	40	96	1	46
158	2.2	37	93	1	44
159	1.8	30	82	1	38
160	2.0	92	99	30	74
161	2.2	22	99	5	42
162	0.8	2	91	0	31
163	1.0	10	99	0	36
164	1.5	19	93	1	38
165	0.8	42	100	1	48
166	1.8	50	97	0	49
167	1.5	50	100	1	50
168	1.8	53	100	15	56
169	1.8	42	97	1	47
170	4.2	93	100	50	81
171	1.0	16	92	0	36
172	1.2	47	100	1	49
173	1.5	38	95	5	46
174	1.8	42	100	25	56
175	1.2	12	99	6	39
176	2.2	78	100	15	64
177	2.2	72	98	10	60
178	2.0	72	100	15	62
179	1.2	110	85	0	32
180	2.5	80	91	25	65
181	2.8	82	100	35	72
182	2.2	33	91	1	42
183	1.8	16	85	1	34
184	2.2	26	85	1	37
185	2.5	23	87	0	37
186	1.5	19	95	0	38
187	2.5	28	93	1	41
188	1.8	24	87	0	37
189	1.2	5	87	0	31
190	3.2	87	99	5	64
191	2.2	28	92	1	40
192	2.2	32	94	1	42
193	1.5	28	98	0	42
194	1.0	4	93	0	32
195	1.5	116	92	0	36
196	0.8	3	90	0	31
197	2.2	48	95	1	48
198	2.0	21	94	0	38

1971

UWHN Southern Materials Section Winter Survival (continued)

<u>Entry No.</u>	<u>Sidney Montana</u>	<u>Brookings So. Dakota</u>	<u>St. Paul Minnesota</u>	<u>Casselton No. Dakota</u>	<u>3-Station Average</u>
199	1.5	6	42	1	16
200	3.5	85	100	60	82
201	2.8	37	97	0	45
202	1.2	7	50	0	19
203	2.0	18	85	1	35
204	1.5	12	87	1	33
205	1.2	22	85	0	36
206	0.5	25	70	1	32
207	1.8	38	97	1	45
208	1.0	23	90	0	38
209	1.0	8	90	1	33
210	2.5	55	100	3	53
211	1.2	8	75	1	28
212	1.0	17	90	1	36
213	0.5	5	50	0	18
214	3.0	59	97	1	52
215	2.8	60	100	3	63
216	3.0	72	100	2	58
217	2.5	50	97	4	50
218	2.0	43	97	3	48
219	1.2	46	95	1	47
220	3.0	75	97	18	63
221	1.8	48	89	1	46
222	1.2	52	97	0	50
223	2.0	38	97	1	45
224	1.0	40	94	0	45
225	1.8	48	97	1	49
226	2.2	50	78	0	43
227	2.2	60	91	1	51
228	2.5	58	94	0	51
229	3.0	57	94	1	51
230	3.8	92	99	60	84
231	3.2	60	97	1	53
232	2.2	63	85	0	49
233	2.5	77	97	2	59
234	2.2	53	90	0	48
235	2.8	77	97	2	59
236	2.8	60	94	1	52
237	2.2	40	95	1	45
238	2.5	48	45	1	31
239	2.5	62	72	3	46
240	2.5	70	97	6	58
241	2.5	67	94	6	56
242	2.2	67	99	16	61
243	1.2	62	90	11	54
244	2.5	70	91	6	56
245	2.0	70	91	3	55
246	1.8	63	92	1	52
247	1.5	60	92	2	51
248	1.2	63	84	5	51
249	0.8	62	80	6	49

1971

UWHN Southern Materials Section Winter Survival (concluded)

<u>Entry No.</u>	<u>Sidney Montana</u>	<u>Brookings So. Dakota</u>	<u>St. Paul Minnesota</u>	<u>Casselton No. Dakota</u>	<u>3-Station Average</u>
250	3.0	85	100	40	75
251	2.2	55	100	3	53
252	1.5	43	97	1	47
253	2.2	40	100	11	50
254	2.0	33	93	1	42
255	2.0	38	93	21	51
256	3.0	52	97	35	61
257	3.0	53	99	25	59
258	2.5	53	98	20	57
259	3.2	62	100	25	62
260	4.2	88	100	50	79
261	3.5	77	97	31	68
262	3.5	72	93	35	67
263	4.0	72	89	31	64
264	3.2	73	97	41	70
265	3.5	77	94	31	67
266	3.2	72	96	16	61
267	2.2	65	90	11	55
268	1.0	13	45	1	20
269	0.5	13	50	1	21
270	2.8	70	96	10	59
271	1.8	36	95	5	45
272	2.2	41	88	10	46
273	1.8	46	85	5	45
274	1.5	43	85	1	43
275	2.2	50	100	1	50
276	2.2	52	94	0	49
277	2.0	50	94	0	48
278	1.5	42	93	3	46
279	1.8	38	97	1	45
280	4.0	82	98	45	75
281	1.8	65	91	1	52
282	1.8	43	95	1	46
283	4.5	88	97	75	87

- 1/ 0 - no plants survived
 1 - 5 or fewer plants survived, low vigor
 2 - 6-10 plants survived, medium-low vigor
 3 - moderate number of plants survived, medium vigor
 4 - large number of plants survived, good vigor
 5 - nearly all plants survived, excellent vigor

Differential winterkill did not occur at Havre, Montana. There was no survival at Watertown, South Dakota.

	<u>Mean winter survival (%)</u>	<u>Range (%)</u>
Scout 66	61	53-72
Warrior	69	63-75
Minter	86	79-92

1971
UNIFORM WINTERHARDINESS NURSERY
Northern Materials Section

Entry No.	Pedigree	C.I. or Sel.No.	Source
1	Minter	12138	Ck
2	Hume	13526	So.Dak.
3	Gage/Hume	SD6717	"
4	Recurrent Sel. Series II, Cycle II	SD6741	"
5	Gage/Hume	SD6746	"
6	Recurrent Sel. Series II, Cycle II	SD6753	"
7	" " " I, " II	SD691	"
8	" " " I, " II	SD692	"
9	" " " I, " II	SD696	"
10	Warrior	13190	Ck
11	Recurrent Sel. Series I, Cycle II	SD697	So.Dak.
12	" " " I, " II	SD698	"
13	" " " I, " II	SD6910	"
14	" " " I, " II	SD6911	"
15	" " " I, " II	SD6913	"
16	Hope/Tk*2, NB61943*2/Mida/Ky117A/3/Hume	SD6914	"
17	Recurrent Sel. Series I, Cycle II	SD6917	"
18	Bulk Pop. Hume x NB Semi-dwarfs	SD6918	"
19	" " " " "	SD6920	"
20	Minter	12138	Ck
21	Bulk Pop. Hume x NB Semi-dwarfs	SD6924	So.Dak.
22	" " " " "	SD6925	"
23	" " " " "	SD6931	"
24	" " " " "	SD6935	"
25	" " " " "	SD6938	"
26	" " " " "	SD6939	"
27	" " " " "	SD6941	"
28	" " " " "	SD6958	"
29	" " " " "	SD6966	"
30	Warrior	13190	Ck
31	Bulk Pop. Hume x NB Semi-dwarfs	SD6979	So.Dak.
32	" " " " "	SD6981	"
33	" " " " "	SD6989	"
34	" " " " "	SD6990	"
35	" " " " "	SD6993	"
36	" " " " "	SD6999	"
37	Ars/7*Tc//Hume*2	SD69100	"
38	"	SD69107	"
39	"	SD69108	"
40	Minter	12138	Ck
41	B70 SDST 170	SD56713-10	So.Dak.
42		MT7101	Mont.
43		MT7102	"
44		MT7103	"
45		MT7104	"
46		MT7105	"
47		MT7106	"
48		MT7107	"
49		MT7108	"
50	Warrior	13190	Ck

1971 Uniform Winterhardiness Nursery (Northern Materials Section), continued.

<u>Entry No.</u>	<u>Pedigree</u>	<u>C.I. or Sel. No.</u>	<u>Source</u>
51		MT7109	Mont.
52		MT7110	"
53		MT7111	"
54		MT7112	"
55		MT7113	"
56		MT7114	"
57		MT7115	"
58		MT7116	"
59		MT7117	"
60	Minter	12138	Ck
61		MT7118	Mont.
62		MT7119	"
63		MT7120	"
64		MT7121	"
65		MT7122	"
66		MT7123	"
67		MT7124	"
68		MT7125	"
69		MT7126	"
70	Warrior	13190	Ck
71		MT7127	Mont.
72		MT7128	"
73		MT7129	"
74		MT7130	"
75		MT7131	"
76		MT7132	"
77		MT7133	"
78		MT7134	"
79		MT7135	"
80	Minter	12138	Ck
81		MT7136	Mont.
82		MT7137	"
83		MT7138	"
84		MT7139	"
85		MT7140	"
86		MT7141	"
87		MT7142	"
88		MT7143	"
89		MT7144	"
90	Warrior	13190	Ck
91		MT7145	Mont.
92		MT7146	"
93		MT7147	"
94		MT7148	"
95		MT7149	"
96		MT7150	"
97		MT7151	"
98		MT7152	"
99		MT7153	"
100	Minter	12138	Ck

1971 Uniform Winterhardiness Nursery (Northern Materials Section), concluded.

<u>Entry No.</u>	<u>Pedigree</u>	<u>C.I. or Sel. No.</u>	<u>Source</u>
101		MT7154	Mont.
102		MT7155	"
103		MT7156	"
104		MT7157	"
105		MT7158	"
106		MT7159	"
107		MT7160	"
108		MT7161	"
109		MT7162	"
110	Warrior	13190	Ck
111		MT7163	Mont.
112		MT7164	"
113		MT7165	"
114	Minter	12138	Ck

Table 12.--
WINTER SURVIVAL (%)
Uniform Winterhardiness Nursery
Northern Materials Section
1971

<u>Entry No.</u>	<u>Highmore¹ So.Dakota</u>	<u>Brookings So.Dakota</u>	<u>St. Paul Minnesota</u>	<u>Casseltown No.Dakota</u>	<u>3-Station³ Average</u>
1	---	90	100	85	92
2	---	90	100	80	90
3	---	73	100	40	71
4	---	67	100	85	84
5	---	67	99	50	72
6	---	60	100	55	72
7	---	67	100	65	77
8	---	70	100	45	72
9	---	67	100	70	79
10	---	63	100	30	64
11	---	87	100	50	79
12	---	83	99	65	82
13	---	73	100	70	81
14	---	73	100	50	74
15	---	80	100	60	80
16	---	80	100	65	82
17	---	73	100	70	81
18	---	77	100	45	74
19	---	83	99	60	81
20	---	87	99	80	89
21	---	67	99	35	67
22	---	70	100	45	72
23	---	80	100	33	71
24	---	70	100	21	64
25	---	77	98	28	68
26	---	70	97	16	61
27	---	77	100	28	68
28	---	77	100	30	69
29	---	83	99	50	77
30	---	77	97	20	65
31	---	77	100	65	81
32	---	77	100	45	74
33	---	83	100	45	76
34	---	83	100	25	69
35	---	83	100	50	78
36	---	90	100	30	73
37	---	90	100	75	88
38	---	90	99	60	83
39	---	93	100	45	79
40	---	97	100	85	94
41	---	93	100	45	79
42	35	87 ²	97	28	71
43	38	50	100	38	63
44	50	60	100	50	70
45	47	63	100	21	61
46	50	67	100	33	67
47	53	67	100	16	61
48	67	77	100	45	74

1971
UWHN Northern Materials Section Winter Survival (%) (continued)

<u>Entry No.</u>	<u>Highmore¹ So. Dakota</u>	<u>Brookings So. Dakota</u>	<u>St. Paul Minnesota</u>	<u>Casseltown No. Dakota</u>	<u>3-Station³ Average</u>
49	50	40	99	21	53
50	70	33	100	23	52
51	47	32	99	28	53
52	57	30	100	25	52
53	50	29	100	20	50
54	60	35	100	23	53
55	57	28	100	45	58
56	37	23	99	20	47
57	50	30	99	40	56
58	33	10	100	1	37
59	47	12	100	44	52
60	60	47	100	70	72
61	43	12	100	23	45
62	23	7	100	4	37
63	40	7	92	16	38
64	47	8	100	28	45
65	53	7	100	30	46
66	63	12	96	13	40
67	50	5	100	20	42
68	43	12	100	55	56
69	40	10	97	65	57
70	57	10	100	40	50
71	23	4	97	45	49
72	33	5	100	40	48
73	27	7	97	23	42
74	27	7	100	13	40
75	33	12	100	25	46
76	43	27	100	20	49
77	47	30	100	18	49
78	37	37	100	18	52
79	50	30	100	75	68
80	70	83	97	90	90
81	57	53	100	80	78
82	53	40	100	30	57
83	57	37	100	50	62
84	47	37	100	40	59
85	47	43	99	45	62
86	50	40	100	25	55
87	50	47	100	50	66
88	60	60	94	60	71
89	53	67	100	6	58
90	60	57	96	16	56
91	43	70	100	45	72
92	40	73	100	35	69
93	40	67	100	45	71
94	27	73	100	18	64
95	27	73	99	10	61
96	33	77	97	15	63
97	33	77	100	11	63
98	40	73	99	11	61
99	47	80	99	11	63

1971

UWNN Northern Materials Section Winter Survival (%) (concluded)

<u>Entry No.</u>	<u>Highmore So. Dakota</u>	<u>Brookings So. Dakota</u>	<u>St. Paul Minnesota</u>	<u>Casselton No. Dakota</u>	<u>3-Station³ Average</u>
100	83	90	99	85	91
101	30	77	99	3	60
102	47	80	100	23	68
103	40	83	100	2	62
104	40	73	100	1	58
105	33	77	99	1	59
106	47	83	100	3	62
107	37	83	100	2	62
108	30	83	100	1	61
109	12	73	98	1	57
110	67	90	100	7	66
111	33	83	100	2	62
112	23	73	100	1	58
113	27	77	99	6	61
114	67	90	100	90	93

¹ Entries 1-41 were not seeded at Highmore.

² Entries 42-114 were planted at a later date and in a different location on the Agronomy farm at Brookings than entries 1-41.

³ Highmore was not included in calculation of the average survival.

Differential winterkilling did not occur at Sidney and Havre, Montana, or at Lethbridge, Alberta. Severe winterkilling at Watertown, South Dakota, caused the loss of nearly all of the nursery and readings were not made.

	<u>Mean winter survival(%)</u>	<u>Range (%)</u>
Minter (check)	89	72-94
Warrior (check)	59	50-66

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1971
Winter Wheat Regional
Soil-borne Mosaic Nursery

Entry No.	Pedigree	C.I. or Sel. No.	Source
1	Ky58/2/Nth/3/Hope/2*Tk/4/Cnn/5/Pkr	NB66425	SRPN
2	Tmp64/5/Wi/4/(Wi/3/T.sp./Ae/2/Pn)F ₁ x-ray	OK66C3003	"
3	391-56-D8/Tascosa	TX62A2782-4-2	"
4	391-56-D8/Kaw	TX62A2522-1-4	"
5	"	TX62A2522-8-2	"
6	"	TX65A1503-1	"
7	Ndd63/C0652643/Guide	C0693494	"
8	Sn64/Tpr 2/C0652961	C0695552	"
9	Ptc/Y54/Tzp/Nar/Tpr/Wrr	C0696753	"
10	Pawnee	11669	Check
11	Ptc/Y54/Tzp/Nar/Tpr/2961	C0696317	SRPN
12	Scout/C.I. 12995	NB68435	"
13	Sut/4/Ky58/Nth/2/Cnn/Tm/Mi/Hope/3/Pn/Cnn	NB68437	"
14	Bezostaia	"	"
15	Pronto	"	"
16	391-56-D8/Triumph	TX65A1626	"
17	1826-1/Parker	TX65A1268	"
18	Wrr/3/At166/2/Cmn/4/Cmn/Ot	NB68513	NRPN
19	Frontana/Cnn//Lcr	NB68493	"
20	Concho	12517	Check
21	Wrr/2/At166/Cmn/3/Lcr	NB68510	NRPN
22	Cheyenne/Kharkof MC22	5520-8	"
23	Gage/Hume	SD6717	"
24	Cch/3/Tst/Hry//2*Pn	SV65508	Okla.
25	"	SV65510	"
26	SS/C.I. 12500//Pn/3/Kaw	OK696453	"
27	"	OK696454	"
28	"	OK696445	"
29	"	OK696436	"
30	Bison	12518	Check
31	5*Kaw//DS28A/Pnc	OK695153	Okla.
32	"	OK695157	"
33	DS28A/Pnc	OK598874	"
34	Gage Sel.	NB65409	Nebr.
35	NB66425 LR Composite	NB69293	"
36	NB66425 GH Composite	NB69291	"
37	At1 66/Cmn//Wrr	NB66553	"
38	Triticale	NB69150	"
39	2*Wrr/Minn III-54-12//Gage	NB69447	"
40	Pawnee	11669	Check
41	C.I. 13548//At1 66/Cmn/3/Lcr	NB68570	Nebr.
42	Mida/Ky 117A//2*(Hope/2*Tk)/3/Pkr/4/Gage	NB68573	"
43	At1 66/Cmn//Om/3/Cnn/Tt	NB69461	"
44	SS/C.I. 12500/RCh/Pn//Cnn/4/Wrr/At1 66/Cmn/3/Lcr	NB69559	"
45	Trapper/Shawnee	NB69621	"
46	Nebr. Restorer 3135/C.I. 13548	NB69666	"
47	Agent/Tascosa	TX63C92	SRPN
48	Concho	12517	Check

Table 13.--
1971
Winter Wheat Regional
Soil-borne Mosaic Nursery
(Kansas test sites only)

<u>Entry No.</u>	<u>Reaction</u>	<u>Entry No.</u>	<u>Reaction</u>
1	S	26	S
2	S	27	S
3	S	28	S
4	S	29	S
5	S	30	S
6	S	31	S
7	S	32	S
8	S	33	MR
9	MR-MS	34	R-MR
10	S	35	MS-S
11	MR	36	S
12	MR	37	S
13	R	38	S
14	S-MS	39	S
15	R-MR	40	S
16	S	41	R-MR
17	S	42	S
18	R-MR	43	R-MR
19	S	44	S
20	R-MR	45	S
21	S	46	S
22	S	47	S
23	S	48	R
24	S		
25	R-MR		

R = only a few plants showing symptoms.

MR = a number of plants showing symptoms but color good and no reduced vigor.

MS = most plants had symptoms and some yellowing.

S = all plants with symptoms, reduced vigor, and yellow.

There were no data from Urbana. These data represent an average of 4 replications; 2 from Newton, Kansas, and 2 from Powhattan, Kansas.

1
2
3

4
5
6