UNITED STATES DEPARTMENT OF AGRICULTURE
AGRICULTURAL RESEARCH SERVICE
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 1972

V. A. Johnson
Research Agronomist

Lincoln, Nebraska
1973

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NORTH CENTRAL REGION

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By

V. A. Johnson[1]

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[1] The writer expresses appreciation to Mrs. Katie Meierhenry, Chris Kant, Regina Hogendorn, and Allen Diehl for their assistance in preparing this report.

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

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REGIONAL NOTES

The Agricultural Research Service underwent a major reorganization in 1972. Divisions, Branches, and Investigations were abandoned in favor of a regional-area concept of research. Four new regions in the USA were established -- each administered by a Deputy Administrator and divided into research areas. The hard red winter wheat region extends into three new regions -- North-Central, Southern, and Western. The regional cooperative program in hard red winter wheat will continue along its former lines. Dr. L. P. Reitz, formerly ARS Wheat Investigations Leader, has joined the ARS National Planning Staff in Beltsville, Maryland.

The Denton, Texas, Substation No. 6 was closed in 1972. Wheat testing has been moved to the TAMU Research and Extension Center at Renner, Texas, under the continued supervision of J. H. Gardenhire.

J. F. Schafer, Chairman, Department of Plant Pathology at Kansas State University, accepted a similar position at Washington State University in 1972.

D. G. Wells, wheat breeder, South Dakota State University, was on sabbatical leave from October 15, 1972 to April 15, 1973.

W. M. Bever retired as chairman of the Department of Plant Pathology, University of Illinois, on September 1. His successor is Richard Ford.

B. A. McCallum resigned as agronomist at the Tetonia, Idaho, Branch Station. D. W. Sunderman (Aberdeen) will supervise the winter wheat regional nursery at Tetonia.

The Hard Winter Wheat Quality Laboratory will move from the Department of Grain Science and Industry, Kansas State University, to new quarters in the U. S. Grain Marketing Research Center, 1515 College Avenue, Manhattan. The move will be completed in 1973.

NEW VARIETIES

SD6753 was released by the South Dakota Agricultural Experiment Station in 1972 under the name "Bronze". It is early, medium height, and resistant to lodging and shattering. It exhibits some tolerance to wheat streak mosaic and shows much less "Hope" necrosis than does Hume. Bronze also resists yellow leaf blotch and stem rust in the field. It has some resistance to leaf rust. It is less hardy than Hume and Winoka but much hardier than Scout 66 and Centurk. Bronze has been tested in the NRPN since 1970.

Colorado State University announced its intention to release Scout Selection CO64043 to its foundation seed producers in the fall of 1972 for initial seed increase. It has yielded 4% more than Scout in Colorado for a 3-year period and is otherwise similar to Scout agronomically. Its mixing time is longer than Scout. It has been named "Baca".

The Kansas Agricultural Experiment Station is increasing two varieties for release and distribution to growers in 1973. They are Parker*3/Bison (KS6623) and Scout*5/Agent (KS7016). Both possess good resistance to leaf rust and KS7016 also exhibits some resistance to stem rust.

Two additional varieties also are being increased in Kansas with intent to release at a later time. Agent/4*Scout (KS70H179) combines Scout and Agent resistance to stem rust and possesses the Agent reaction to leaf rust and septoria. Triumph/Bison (KS65274) is an early-maturing variety with better straw and quality than Triumph.

Four varieties underwent initial seed increase in Nebraska in 1972 for intended release and seed distribution in 1973. They are Gage/Lancer (NB68427), Scout/4/Ky58/Nth/2/Cnn/Tm/Mi/Hope/3/Pn/Cnn Selections (NB 68437 and NB68440), and Scout/C.I.12995 (NB68435). All have improved straw strength and bread-making quality and varying combinations of resistance to diseases and insects.

THE 1972 CROP YEAR

Winter wheat prospects for the Southern Plains were reduced by a prolonged winter drought in Texas, New Mexico, and Oklahoma. North-central Oklahoma and some localities of south-central Kansas also sustained heavy damage from a severe spring freeze. Wheat acreage abandonment exceeded 50% in Texas and New Mexico and it was 32% in Oklahoma. Yields of harvested acres in these states ranged from 22.0 to 25.5 bu/a. Weather in Kansas during late May and June was favorable and yields were good to excellent in most of the state. Drought stress was pronounced in some parts of southern and western Kansas. Acreage abandonment was slightly less than 9%.

Both leaf and stem rust were prevalent throughout the region with severities of the former as high as 80% at soft dough stage in central Oklahoma. Stem rust reached severities of 30% in commercial fields of Parker in north-central Kansas. Stem rust remained light throughout Nebraska except in isolated fields of susceptible varieties. Several days of prematurely high temperatures substantially reduced wheat yields in south-east and south-central Nebraska. Abandonment of 8% of seeded acreage in Nebraska was the lowest in a 10-state area for winter wheat.

Winter wheat production statistics for the plains states are summarized in the tabulation that follows.

State	Seeded acres	Harvested acres	Abandonment	Yield per harvested acre	Production (bu.)
	1,000	1,000	%	bu.	1,000
New Mexico	378	170	55	25.5	4,335
Texas	4,050	2,000	51	22.0	44,000
Oklahoma	5,700	3,900	32	23.0	89,700
Colorado	2,449	2,131	13	24.0	51,144
Kansas	10,300	9,400	9	33.5	314,900
Nebraska	2,793	2,556	8	37.0	94,572
Montana	2,143	1,790	16	27.0	48,330
Wyoming	225	220	14	35.0	7,700
South Dakota	801	705	12	36.0	25,380
North Dakota	73	66	10	33.0	2,178

Data from Crop Production, 1972 Annual Summary. Crop Reporting Board, Statistical Reporting Service, U.S.D.A., Washington, D. C.

SOUTHERN REGIONAL PERFORMANCE NURSERY

Varieties evaluated in the SRPN in 1972 totaled 26, of which 14 were in the nursery for the first time. Thirty-one replicated nurseries were grown at 29 sites. There were both irrigated and dryland nurseries at Bushland, Texas and Clovis, New Mexico. Observation plantings of nursery entries were grown at the Northern Grain Insects Laboratory at Brookings, South Dakota and at Tetonia and Aberdeen, Idaho.

Yield data were reported from 25 sites. The nursery at Altus, Oklahoma was abandoned due to severe drought. Hail destroyed the nursery at Sidney, Nebraska. Thin and variable spring stands due to poor fall stand establishment and winterkilling forced abandonment of the nursery at Highmore, South Dakota. Winterkilling and birds rendered the nursery at Ames useless for yield purposes.

Pedigrees and C.I. or State Selection numbers of entries appear below. Data reported from nursery sites are found in table 1. Leaf rust reaction data from Manhattan, Kansas are reported in table 2. Stem rust data provided by the U.S.D.A. Cereal Rust Laboratory in St. Paul, Minnesota appear in tables 3 and 4.

Entry No.	Variety	C.I. or Sel. No.	Source
1	Kharkof	1442	Check
2	Scout 66	13996	Nebraska
3	Centurk	15075	"
4	391-56-D8/Tascosa	TX62A2782-4-2	Texas
5	391-56-D8/Kaw	TX62A2522-1-4	"
6	1826-1/Parker	TX65A1268	"
7	Sn64/Tpr/2/CO652961	CO695552	Colorado
8	Ptc/Y54/Tzp/Nar/Tpr/2961	CO696317	"
9	Pronto	---	DeKalb
10	Bezostaya	15158	IWWPN
11	Scout/C.I.12995	NE68435	Nebraska
12	Sut/4/Ky58/Nth/2/Cnn/Tm/Mi/Hope/3/ Pn/Cnn	NE68437	"
13*	Scout*5/Agent	KS7016 (new seed)	Kansas
14*	Short Wheat/Scout Composite	TX69A571	Texas
15*	do.	TX69A367	"
16*	do.	TX69A565	"
17*	Scout Selection	CO64043	Colorado
18*	5*Scout/Agent	OK696731	Oklahoma
19*	do.	OK696740	"
20*	D146-4	OK60118	"
21*	Triumph/Bison	KS65274	Kansas
22*	Agent/4*Scout	KS70H134	"
23*	do.	KS70H179	"
24*	Agent/4*Scout Composite	SD7117	South Dakota
25*	Sut/4/Ky58/Nth/2/Cnn/Tm/Mi/Hope/3/ Pn/Cnn	NE68440	Nebraska
26*	Atl 66/Cmn//Lcr	NE701132	"

*New in 1972

Test Site Information

Denton--The nursery emerged to good stands from November 4 seeding. The winter was mild with first killing frost occurring on January 4. Leaf rust appeared during December but disappeared following the January freeze until early March. The nursery was sprayed for greenbug control in March. Rainfall was below normal. High wind accompanied by hail and rain caused some damage on April 21. Shattering was low but some straw breakage occurred. P_2O_5 in the amount of 200 pounds was applied with the seed. The nursery was topdressed on March 2 with 60 pounds of nitrogen.

Chillicothe--The nursery was seeded on October 13 on ground which was fallowed the previous year. Soil moisture at seeding was adequate but only 0.7 inch of precipitation was received from January to March. Excessively high temperatures and winds in mid-April caused severe blasting of some varieties which were heading and reduced their yields. Winter injury was nonsignificant. Late rains resulted in high test weights. The nursery was sprayed for greenbug control in March. Leaf rust occurred in trace amounts. Lodging and shattering were insufficient for recording.

Bushland--The irrigated nursery received one winter and three spring irrigations of approximately 3½ inches each. A fall application of 160 pounds of nitrogen per acre was made. Diseases and insects did not measurably affect performance. Hail on June 17 reduced yields from 2 to 15% depending on the variety. Soil moisture was adequate for dryland wheat with near-normal precipitation. Rainfall was above-normal in the fall but low during winter and early spring. A late spring freeze damaged some varieties in the dryland nursery. Estimated yield reductions were from 0 to 15%. Diseases and insects did not affect performance.

Clovis--Good conditions of moisture (4.13 inches of precipitation) in the fall were followed by dry winter and spring (0.39 inches from January 1 to April 30). Precipitation in the amount of 1.11 inches occurred in May and dryland harvest was delayed by 3.85 inches of rain in June. The irrigated nursery received 100 pounds of nitrogen.

Stillwater--After a good fall and winter, the wheat was subjected to stress from high temperatures and low precipitation in March and April. There were no serious disease or insect problems. The nursery was grown on summer fallowed ground.

Lahoma--Conditions were similar to those at Stillwater.

Goodwell--Season-long conditions were good for wheat. There was some temperature stress (both high and low) in April. The nursery was irrigated.

Altus--The nursery was seeded at the normal time in the fall but was abandoned due to severe and prolonged drought.

Manhattan--The nursery was seeded on October 2 in a rough, dry, and cloddy seed bed. Emergence was uneven and remained evident until after blooming in the spring. Early emerged material made excessive fall growth -- later emerged material made adequate growth. Heavy precipitation in late October was followed by a very dry winter and spring. Only one good rain occurred from November to mid-June. The spring and summer were cool except for the first 10 days of June. Plant height was excessive with irregular lodging. Heavy leaf rust occurred late. Stem rust was moderate and also late appearing. Mildew was heavy through May.

Hays--The nursery was seeded October 8 in good soil moisture. Fall growth was sparse because of the late seeding. A mild dry winter produced no winterkilling. The spring remained dry until late April. May and June were cool and wet. Traces of Hessian fly (spring brood) were observed. Leaf rust appeared early and susceptible varieties lost their leaves as much as 10 days prematurely. Septoria tritici became sufficiently heavy to probably affect performance of the most susceptible varieties. Tillering in March was unusually heavy.

Garden City--Conditions at seeding time were excellent with good surface and subsoil moisture. Fall growth was heavier than normal. Snowfall during the winter was minimal. Warm temperatures in March and April induced early growth of the wheat. The wheat was under drought stress by heading time which was relieved by 2 plus inches of precipitation between May 5 and 11. May and early June were cool and delayed maturity to about normal.

Colby--The nursery which was seeded on September 20 emerged to good stands. The winter was mild and dry. No winterkilling occurred. Spring growth was initiated by late February. The spring continued dry until late April but moisture stress was not observed. Precipitation was above-average in May and June. Hail on June 26 caused some shattering. There were no insect or disease problems.

Fort Collins--Conditions throughout the season were excellent. The nursery was grown on summer fallowed ground. Fifty pounds of nitrogen was applied. The nursery received one irrigation.

Julesburg--The nursery was seeded on summer fallowed ground with 35 pounds of N applied in April. Fall, winter, and spring conditions were excellent. On June 13 a hail storm caused an estimated 60% damage to the nursery. The nursery was harvested but yield differences largely reflect differential damage from the hail.

Akron--An open winter produced some cold stress on tender entries.

Burlington--Season-long growing conditions were good. Precipitation was timely. There were no disease or insect problems.

Springfield--The weather was favorable with relatively low precipitation throughout the season. Diseases and insects were not a problem. Low areas in the nursery in which moisture was high resulted in high yields of varieties.

Yellow Jacket--Growing conditions were good. There were no insect or disease problems.

Mead--Soil moisture was adequate throughout the season. Two periods of excessively high temperatures in early June probably reduced nursery yields significantly. Precipitation was heavy in late May and early June and caused some lodging. Scab, leaf rust, and stem rust were present on susceptible varieties. Septoria was the heaviest in many years.

Clay Center--Conditions were similar to those at Mead.

North Platte--Good fall establishment of the nursery was followed by a relatively mild winter. Precipitation was generally adequate throughout the season. Diseases were not a problem. The location was not as severely affected by high temperatures in early June as was Mead.

Sidney--The nursery was destroyed by hail in June.

Alliance--Generally good conditions throughout the season resulted in high grain yields. Insects and diseases were no problem.

Presho--Fall nursery establishment was satisfactory. The winter produced differential kill among varieties. Moisture was adequate except for a dry period in early June. Heavy rain in July interferred with harvest. Leaf rust, stem rust, and scab became heavy on susceptible varieties.

Highmore--The nursery was abandoned because of winterkill and poor stands in the spring.

Ames--Fall stand establishment and growth were excellent. The winter was severe and some varieties were entirely killed. Considerable bird damage occurred in surviving varieties during ripening making yield measurements invalid. Leaf rust became heavy on susceptible varieties. Stem rust and other diseases were minimal.

Columbia--Fall growth was excessive. Heavy precipitation fell in March and April followed by a dry late May and June. Mildew was noted early and Septoria became severe on the leaves. Leaf rust and stem rust appeared late in the season. Hessian fly infestation contributed to considerable culm breakage and lodging prior to harvest.

Urbana--Warm temperatures and abundant moisture in late fall and early winter produced excessive growth and tillering. Continued ideal conditions in the spring contributed early and severe lodging of most entries. A fall infection of barley yellow dwarf and heavy powdery mildew in the spring were the only diseases of consequence.

Lind--Soil moisture was scarce but good fall stands were obtained. There was no winterkilling. Continued below-normal precipitation resulted in early moisture stress. Temperatures were high during flowering. A relatively cool June contributed to higher than expected yields -- especially in the later-maturing varieties.

Disease Tests--Seed of entries in the SRPN was sent to L. E. Browder, Kansas State University, and to D. V. McVey, Cereal Rust Laboratory, St. Paul, Minnesota for evaluation of reaction to leaf and stem rust, respectively. Infection types produced on nursery entries inoculated with 11 selected cultures of Puccinia recondita are reported in table 2. Seedling reactions of entries to 12 cultures of Puccinia graminis tritici appear in table 3 and field reactions to stem rust and mildew at St. Paul in table 4.

Table 1. Yield and other data for varieties grown in the Southern Regional Performance Nursery in 28 trials in the hard red winter wheat region in 1972.

Denton, Texas
Three replications

C. I. or Sel. No.	Yield	Volume Weight	Days to Heading	Plant Height	Lodg.	Leaf Rust Sev.	Mildew
	kg/ha	kg/hl		cm	0-9	%	0-9
KS7016	3543	78.7	102	80	0	1	1
OK696731	3454	77.4	103	83	1	1	1
SD7117	3454	77.4	102	86	1	15	1
OK696740	3355	77.4	103	88	1	1	1
KS70H134	3243	77.4	102	85	1	1	3
KS70H179	3227	78.0	103	88	1	15	1
CO695552	3106	77.4	96	89	1	20	3
NE701132	3082	78.7	102	83	2	15	1
TX62A2782-4-2	2779	80.6	102	71	0	3	4
TX69A571	2631	77.4	100	73	0	75	4
CI13996	2619	76.8	100	80	2	55	2
CO64043	2611	78.0	101	86	0	40	0
NB68437	2535	76.1	103	72	0	50	1
NB68435	2508	78.0	103	77	0	65	0
CI14078	2364	79.3	86	82	5	50	4
NB68440	2348	75.5	104	75	0	70	1
TX69A565	2346	74.8	100	64	0	10	4
OK60118	2304	76.8	90	87	4	60	3
CO696317	2270	76.8	101	72	0	60	3
CI15075	2268	77.4	98	80	3	45	1
CI15158	2246	78.0	97	78	4	10	2
TX69A367	2153	78.0	102	69	0	65	3
TX65A1268	2066	75.5	89	67	2	70	2
KS65274	2064	78.0	92	89	2	75	4
CI 1442	1716	76.8	107	85	4	65	5
TX62A2522-1-4	1564	80.0	105	56	0	50	3

L.S.D. = 409, C.V. = 9.3%

Chillicothe, Texas
Three replications

C. I. or Sel. No.	Yield	Volume Weight	Days to Heading	Plant Height
	kg/ha	kg/hl		cm
TX65A1268	1652	76.2	99	52
OK60118	1472	80.0	103	67
KS65274	1378	77.7	102	57
CI14078	1266	79.2	101	54
TX69A367	1172	79.6	105	60
CO695552	1134	77.4	102	58
NB68437	1006	78.6	107	47
CI15075	925	80.6	107	48
KS70H134	867	80.2	108	55
CO696317	780	77.5	103	52
CO64043	773	79.6	107	56
CI13996	755	79.9	105	57
CI 1442 1/	605	75.6	120	54
NB68440	520	78.7	109	42
CI15158	513	80.4	107	49
TX62A2782-4-2	511	80.9	109	50
TX69A571	497	81.8	106	52
NB68435	416	79.3	111	54
NE701132	383	78.7	107	57
KS70H179	356	78.3	110	54
OK696740	259	78.7	109	55
TX69A565	206	78.3	108	46
KS7016	183	77.5	110	49
OK696731	152	78.7	112	46
SD7117	138	78.0	109	48
TX62A2522-1-4	104	--	111	44

L.S.D. = 473, C.V. = 40.4%

1/ CI 1442 was excluded from the analysis of variance since yield data were lost. The average yield reported is the average of the guard rows.

Bushland, Texas
Three replications, Irrigated

C. I. or Sel. No.	Yield	Volume Weight	Days to Heading	Plant Height	Surv.	Hail Damage
	kg/ha	kg/hl		cm	0-9	%
TX69A565	5028	79.6	117	69	9	2
TX69A571	4283	81.4	117	72	9	4
OK696731	4220	79.9	118	83	9	6
KS70H179	4175	79.9	118	85	9	6
CI15075	4130	81.4	118	77	9	3
TX62A2782-4-2	4076	79.9	117	75	9	2
CO696317	4040	79.5	117	81	8	6
OK696740	4029	79.9	118	81	9	7
TX69A367	4025	79.3	115	72	9	4
NB68440	3984	77.7	118	80	9	3
NB68435	3962	80.8	118	90	9	6
NB68437	3807	78.3	117	71	9	3
KS7016	3762	79.9	118	89	9	8
KS70H134	3699	78.8	117	83	9	4
SD7117	3693	79.9	118	82	9	5
NE701132	3684	79.6	118	80	9	5
CI13996	3587	79.2	116	81	9	10
TX62A2522-1-4	3567	80.5	118	76	9	2
CI15158	3345	80.1	117	75	9	5
CO64043	3230	79.3	117	83	9	4
CI 1442	3062	79.3	124	105	9	4
CO69552	2957	79.7	116	80	9	7
CI14078	2748	80.6	114	71	9	6
TX65A1268	2719	81.5	114	62	9	5
KS65274	2279	77.7	114	78	9	8
OK60118	2202	77.2	114	75	9	13

L.S.D. = 523, C.V. = 8.6%

Bushland, Texas
Three replications, Dryland

C. I. or Sel. No.	Yield	Volume Weight	Plant Height	Surv.	Freeze Damage
	kg/ha	kg/hl	cm	0-9	%
NB68437	1893	77.0	42	9	5
TX69A571	1774	79.7	46	9	5
CO696317	1718	77.5	48	7	5
NB68440	1588	76.6	41	9	7
NB68435	1485	78.7	47	9	2
CI15075	1460	77.9	46	9	2
CI15158	1458	77.7	47	8	0
TX65A1268	1449	75.9	38	9	7
TX62A2782-4-2	1411	79.3	49	9	5
CO69552	1386	79.0	51	8	5
CI14078	1377	81.4	49	8	7
CO64043	1364	78.7	42	9	7
CI13996	1315	77.9	48	9	5
OK696731	1314	77.7	44	9	7
TX69A367	1305	77.4	42	8	15
TX69A565	1135	76.8	37	8	10
CI 1442	1135	78.3	54	9	5
TX62A2522-1-4	1097	77.4	43	9	15
KS70H134	1076	77.4	43	9	12
KS70H179	1010	78.1	43	9	5
OK696740	998	77.2	45	9	2
OK60118	960	76.2	52	9	17
NE701132	958	76.8	44	-	7
SD7117	863	77.9	43	9	9
KS7016	651	76.2	44	9	10
KS65274	565	75.2	47	8	17

L.S.D. = 768, C.V. = 36.2%

Clovis, New Mexico
Three replications, Irrigated

C. I. or Sel. No.	Yield	Volume Weight	Days to Heading	Plant Height	Lodg.	Growth Rate
	kg/ha	kg/hl		cm	0-9	0-9
TX69A367	6539	80.0	119	108	0	6
OK696731	6216	78.9	124	129	5	6
TX69A565	6023	78.6	123	111	0	6
CI15075	5926	80.8	121	111	0	6
CO696317	5872	79.7	119	115	0	8
TX69A571	5614	30.9	121	100	1	8
NB68437	5538	78.9	122	110	0	6
SD7117	5506	78.6	124	125	7	6
NE701132	5463	80.2	123	123	2	8
CI13996	5356	80.0	122	123	6	6
TX62A2782-4-2	5334	81.3	122	115	2	8
CI14078	5098	81.5	118	108	2	8
KS70H134	4990	79.2	122	121	7	8
CO64043	4979	80.1	122	122	6	8
OK60118	4797	79.3	118	115	1	8
NB68435	4786	79.2	123	126	1	6
OK696740	4646	78.9	125	127	5	6
KS7016	4625	79.0	123	122	4	6
TX65A1268	4624	79.1	117	93	0	6
KS65274	4463	79.2	118	112	0	6
CI15158	4452	81.0	123	113	0	8
CI 1442	4237	78.7	130	132	8	6
NB68440	4097	77.8	123	115	1	6
CO695552	4044	80.5	118	118	1	8
TX62A2522-1-4	3915	81.1	125	107	0	8
KS70H179	3882	79.2	124	121	7	6

L.S.D. = 1248, C.V. 14.7%

Clovis, New Mexico
Three replications, Dryland

C. I. or Sel. No.	Yield	Volume Weight	Days to Heading	Plant Height	Growth Rate
	kg/ha	kg/hl		cm	0-10
CO64043	1013	76.1	112	48	8
CI15158	1003	76.1	121	46	8
CI13996	914	76.1	115	49	6
OK696740	905	76.1	119	43	6
NE701132	887	76.1	115	49	8
NB68435	887	77.4	118	47	6
TX69A367	887	74.8	114	43	8
NB68437	887	76.1	113	41	6
CI 1442	842	77.4	126	57	6
OK696731	833	74.8	117	41	8
KS70H179	824	76.1	118	42	8
CI14078	761	78.7	112	40	8
CI15075	726	77.4	119	40	8
TX62A2782-4-2	708	77.4	120	41	8
OK60118	690	77.4	113	49	8
KS70H134	690	74.8	114	38	8
TX69A571	672	76.1	115	45	8
NB68440	672	74.8	118	37	8
CO695552	645	77.4	112	45	8
SD7117	645	76.1	118	37	6
KS65274	636	76.1	112	46	8
TX62A2522-1-4	627	77.4	121	47	6
CO696317	600	77.4	113	45	9
KS7016	520	74.8	117	44	6
TX69A565	475	73.5	118	34	8
TX65A1268	277	--	113	33	6

L.S.D. = 310, C.V. = 24.9%

Stillwater, Oklahoma
Three replications

C. I. or Sel. No.	Yield	Volume Weight	Days to Heading	Plant Height	Tillers per	Leaf Rust Sev.
	kg/ha	kg/hl		cm	sq. ft.	%
KS70H179	3758	79.9	111	94	65	6
SD7117	3614	79.2	111	93	63	6
OK696740	3569	79.8	111	94	67	6
TX69A565	3565	77.7	110	71	58	10
CI15075	3565	80.8	109	80	69	20
TX69A367	3547	80.5	109	75	77	35
CI13996	3412	80.7	110	90	74	45
KS70H134	3394	79.9	110	86	61	10
OK696731	3372	78.9	111	91	72	6
NB68435	3363	79.7	111	93	76	35
OK60118	3349	80.8	104	87	64	55
NB68437	3282	78.0	110	75	76	35
CO64043	3224	80.2	110	91	83	40
KS65274	3188	81.7	107	78	50	60
TX62A2782-4-2	3062	81.0	112	73	66	7
N^B68440	3026	77.0	111	75	69	50
CO695552	3018	81.6	107	82	58	25
KS7016	2995	79.2	111	88	71	2
TX69A571	2789	78.6	110	68	71	60
NE701132	2775	76.8	111	91	71	15
CO696317	2735	79.0	109	78	51	60
CI15158	2712	79.5	107	72	40	40
TX62A2522-1-4	2681	78.5	116	73	59	30
CI14078	2453	81.6	102	69	67	50
CI 1442	2349	78.3	117	95	65	45
TX65A1268	2255	79.3	101	60	77	60

L.S.D. = 653, C.V. = 12.4%

Lahoma, Oklahoma
Three replications

C. I. or Sel. No.	Yield	Volume Weight	Days to Heading	Plant Height	Lodging
	kg/ha	kg/hl		cm	0-9
TX69A565	4210	77.7	114	67	0
OK696731	4094	79.8	118	79	0
KS70H134	4058	79.5	116	91	3
SD7117	3977	79.4	117	89	5
CO64043	3829	80.3	114	81	2
NB68435	3793	79.3	116	87	0
TX69A367	3785	80.3	114	64	0
TX62A2522-1-4	3717	79.4	116	81	0
NE701132	3704	78.9	117	84	3
KS70H179	3659	79.3	118	85	3
CO696317	3650	79.7	113	76	0
CI15075	3641	80.2	114	77	1
CI15158	3637	80.8	113	68	0
TX69A571	3627	79.4	112	68	0
CI13996	3542	79.0	116	86	2
CO695552	3448	80.5	113	79	1
TX62A2782-4-2	3444	80.7	115	74	0
KS7016	3443	79.5	116	79	0
OK696740	3408	79.7	117	83	1
NB68440	3287	76.7	117	76	3
NB68437	3287	78.3	113	72	0
TX65A1268	3268	79.2	110	56	0
KS65274	3211	79.0	109	78	0
CI14078	2793	81.7	109	66	0
OK60118	2690	79.4	113	71	3
CI 1442	2533	75.6	120	87	9

L.S.D. = 615, C.V. = 10.4%

Goodwell, Oklahoma
Three replications

C. I. or Sel. No.	Yield	Volume Weight	Days to Heading	Plant Height
	kg/ha	kg/hl		cm
TX65A1268	5155	74.9	116	82
KS65274	4433	76.2	126	104
CI14078	4413	78.1	115	86
TX69A565	4390	68.4	129	92
CI15158	4260	74.8	129	96
TX62A2522-1-4	4094	73.9	129	95
TX62A2782-4-2	4089	73.6	128	94
NB68437	4071	71.2	129	94
CO696317	3854	71.7	128	98
NB68440	3668	72.0	132	100
CI15075	3650	74.0	128	98
SD7117	3592	73.0	132	99
CO695552	3518	74.1	128	95
OK60118	3394	74.3	124	96
KS70H179	3361	73.1	132	100
KS70H134	3280	72.0	132	99
TX69A367	3260	68.2	129	94
OK696731	3249	72.7	132	101
OK696740	3206	72.2	132	104
KS7016	3161	73.5	128	104
TX69A571	3042	71.4	130	95
CO64043	3022	72.7	129	101
NE701132	2995	72.2	133	99
NB68435	2838	70.4	129	109
CI13996	2769	73.9	128	104
CI 1442	2567	69.9	132	109

L.S.D. = 940, C.V. = 15.6 %

Manhattan, Kansas
Three replications

C. I. or Sel. No.	Yield	Volume Weight	Days to Heading	Plant Height	Bunt.
	kg/ha	kg/hl		cm	0-9
OK696731	4482	80.6	142	121	6
TX62A2782-4-2	4350	81.1	141	101	7
KS70H179	4341	81.7	140	120	6
CI15075	4239	80.6	139	118	7
SD7117	4267	81.0	141	121	6
KS70H134	4263	80.2	141	122	5
TX62A2522-1-4	4193	79.7	141	88	2
CI13996	4064	81.8	139	122	6
NB68440	4003	80.6	140	115	7
NE701132	3971	80.6	140	121	8
KS7016	3942	80.2	142	124	6
TX69A565	3922	71.1	140	96	6
NB68437	3915	79.7	139	116	7
CO64043	3902	81.3	139	118	6
CI15158	3833	78.9	138	100	4
NB68435	3768	80.1	141	125	6
CO695552	3763	81.7	138	117	7
OK60118	3745	82.7	137	116	6
TX69A367	3705	78.0	139	100	6
OK696740	3689	80.4	141	122	6
TX65A1268	3673	76.9	138	90	7
CI14078	3644	84.0	136	116	8
KS65274	3606	82.2	137	115	1
CO696317	3447	77.4	137	114	8
TX69A571	3288	76.2	140	90	6
CI 1442	2053	74.0	144	123	7

L.S.D. = 598, C.V. = 9.2%

Hays, Kansas
Three replications

C. I. or Sel. No.	Yield	Volume Weight	Days to Heading	Plant Height	Lodging	Leaf Rust Sev.	Straw Attitude Degrees from Horizontal
	kg/ha	kg/hl		cm	0-9	%	
KS70H179	3678	80.2	140	94	7	0	73
OK696731	3642	80.1	141	95	8	0	77
KS7016	3550	79.5	141	96	7	0	73
SD7117	3499	79.7	141	96	7	0	73
OK696740	3454	79.4	140	94	8	0	75
KS70H134	3281	78.6	140	91	7	0	70
CO695552	3241	79.2	138	93	7	0	72
NB68435	3185	77.1	142	102	6	55	63
NE701132	3151	79.2	142	96	7	6	70
CI15075	3131	76.1	141	91	6	11	63
CO64043	3107	78.9	140	95	7	58	67
TX69A367	3033	76.3	139	80	8	55	82
CI15158	2941	79.0	142	88	8	0	80
TX69A571	2916	77.5	139	74	8	71	82
NB68440	2898	75.7	140	86	8	68	75
CI13996	2894	78.5	140	95	7	66	67
OK60118	2865	79.4	137	95	6	55	62
TX65A1268	2829	77.4	137	72	8	28	78
NB68437	2661	77.7	139	83	8	65	77
KS65274	2638	81.0	136	92	8	76	80
CO696317	2636	75.3	141	84	8	0-70	77
TX62A2782-4-2	2618	78.6	142	78	8	3	78
TX62A2522-1-4	2564	75.9	142	76	8	21	82
TX69A565	2378	69.6	141	72	7	3	77
CI 1442	2371	77.0	146	110	6	23	60
CI14078	2251	81.0	137	90	6	66	65

L.S.D. = 440, C.V. = 8.8%

Garden City, Kansas
Three replications

C. I. or Sel. No.	Yield kg/ha	Volume Weight kg/hl	Days to Heading	Plant Height cm
TX69A565	3079	76.8	137	[illegible]59
KS70H134	2990	78.1	137	[illegible]66
KS70H179	2914	79.1	138	[illegible]67
CO696317	2812	78.9	137	[illegible]62
NB68435	2810	78.9	138	[illegible]68
CI13996	2788	78.7	135	[illegible]67
CO64043	2772	78.7	137	[illegible]62
CI15075	2721	79.1	138	[illegible]60
CI15158	2660	78.8	138	[illegible]66
CO695552	2577	79.5	135	[illegible]67
OK696731	2555	78.4	138	[illegible]60
NB68440	2526	76.7	135	[illegible]53
OK60118	2525	77.6	133	[illegible]66
SD7117	2512	78.7	137	[illegible]67
TX62A2782-4-2	2505	78.9	138	[illegible]55
TX65A1268	2492	77.6	132	[illegible]47
TX69A571	2447	78.8	136	[illegible]53
TX69A367	2432	77.2	136	[illegible]53
CI 1442	2420	77.9	141	[illegible]66
NB68437	2317	78.7	135	[illegible]51
KS7016	2315	78.6	139	[illegible]63
KS65274	2277	78.0	134	[illegible]63
OK696740	2254	77.4	138	[illegible]62
CI14078	2223	79.2	133	[illegible]58
NE701132	2223	79.0	138	[illegible]63
TX62A2522-1-4	2059	77.2	138	[illegible]59

L.S.D. = 396, C.V. = 9.2%

Colby, Kansas
Three replications

C. I. or Sel. No.	Yield	Volume Weight	Days to Heading	Plant Height	Lodg.	Shat.
	kg/ha	kg/hl		cm	0-9	0-9
CI14078	2729	79.3	142	85	0	0
CI13996	2727	77.4	144	82	0	0
OK696731	2683	76.1	145	79	0	0
KS70H179	2650	76.1	145	82	0	0
CI15075	2650	75.5	145	78	0	0
OK60118	2548	75.5	142	88	0	0
CO695552	2525	78.0	143	83	0	0
NB68435	2516	76.1	145	87	0	0
CO696317	2490	75.5	145	76	0	0
TX69A571	2483	76.8	142	68	0	0
CO64043	2483	77.4	144	81	0	0
OK696740	2452	76.8	144	82	0	0
CI15158	2448	74.8	145	78	1	0
SD7117	2444	76.8	144	82	0	0
KS7016	2421	76.8	145	84	0	0
KS70H134	2406	75.5	144	79	0	0
TX65A1268	2402	74.8	142	69	0	1
TX69A367	2383	75.5	143	71	0	0
KS65274	2227	74.8	142	89	0	0
NB68440	2183	72.2	144	68	0	0
NE701132	2177	74.8	144	83	0	0
NB68437	2177	75.5	145	69	0	0
CI 1442	2041	76.1	150	91	0	0
TX62A2782-4-2	1979	77.4	146	77	0	1
TX62A2522-1-4	1895	75.5	145	71	0	1
TX69A565	1824	69.7	144	69	0	2

L.S.D. = 373, C.V. = 9.3%

Fort Collins, Colorado
Three replications

C. I. or Sel. No.	Yield	Volume Weight	Days to Heading	Plant Height	Lodg.	Stem Rust Sev.
	kg/ha	kg/hl		cm	0-9	%
CO696317	8929	79.6	149	101	2	2
TX62A2522-1-4	8884	81.3	151	91	0	21
TX69A367	8763	80.0	149	92	0	6
NB68435	8413	81.3	149	115	1	6
NE701132	8319	79.5	153	118	2	1
TX65A1268	8229	79.2	147	79	0	25
CI15075	8067	80.2	153	112	2	0
CO695552	7969	80.5	148	112	2	11
TX69A565	7942	76.6	150	87	1	0
TX69A571	7879	80.0	151	91	4	28
NB68440	7601	78.8	152	107	2	8
TX62A2782-4-2	7404	81.8	149	91	0	6
OK60118	7377	81.3	146	108	4	8
NB68437	7287	79.3	151	103	2	16
SD7117	7243	79.3	152	117	4	2
CI14078	7166	83.2	145	109	2	10
KS7016	7134	79.9	152	124	3	2
KS70H134	7054	79.2	151	117	4	2
KS70H179	7023	79.9	151	114	2	1
CI15158	6771	79.1	153	105	0	41
OK696731	6753	79.1	152	119	2	0
KS65274	6673	80.8	147	112	0	20
OK696740	6511	78.9	152	113	2	3
CI13996	6453	78.2	150	114	6	8
CI 1442	6390	74.4	158	112	8	15
CO64043	6314	79.9	151	115	5	5

L.S.D. = 604, C.V. = 4.8%

Julesburg, Colorado
Three replications

C. I. or Sel. No.	Yield	Volume Weight	Leaf Rust Sev.	Stem Rust Sev.	Hail Damage
	kg/ha	kg/hl	%	%	%
TX69A367	2890	73.9	70	15	15
TX69A565	2816	72.4	1	3	20
TX69A571	2757	76.0	70	20	15
CO695552	2693	77.4	0	30	30
TX62A2522-1-4	2531	76.9	10	87	15
CO696317	2506	75.1	60	20	35
NB68435	2424	75.1	1	45	35
TX65A1268	2388	73.5	10	60	15
NE701132	2371	76.5	1	5	35
TX62A2782-4-2	2339	76.2	5	75	23
CI15158	2132	74.0	10	60	20
KS70H134	2113	74.3	5	5	50
NB68440	2113	74.0	50	5	40
KS65274	2106	76.4	60	60	40
CI14078	2098	72.5	70	65	50
SD7117	2029	73.7	5	5	60
OK696740	2008	75.5	1	5	55
OK696731	1970	74.6	1	5	55
NB68437	1965	70.3	40	7	15
KS70H179	1957	74.6	1	7	30
CI15075	1935	74.8	40	7	60
CI13996	1934	74.3	60	25	65
OK60118	1826	72.6	60	50	80
KS7016	1796	71.2	1	7	70
CO64043	1774	72.5	50	7	80
CI 1442	1101	71.9	10	75	80

L.S.D. = 353, C.V. = 9.6%

Akron, Colorado
Three replications

C. I. or Sel. No.	Yield	Volume Weight	Days to Heading	Plant Height
	kg/ha	kg/hl		cm
CO64043	1993	77.0	143	50
KS70H134	1981	76.5	144	53
CI15075	1967	78.0	145	53
CI13996	1869	77.4	144	63
CI14078	1869	78.0	142	53
OK696731	1745	75.2	144	50
CO695552	1680	77.8	143	58
CI 1442	1642	77.9	151	66
OK60118	1616	76.4	142	58
NB68437	1599	75.2	144	48
TX69A565	1597	73.4	143	48
TX62A2782-4-2	1585	78.0	144	53
TX65A1268	1560	76.1	143	48
NB68435	1546	77.9	142	53
CO696317	1545	76.3	144	53
KS65274	1536	76.0	142	55
TX69A571	1536	78.3	143	45
NE701132	1516	77.3	147	55
KS70H179	1496	75.9	144	50
SD7117	1494	75.5	145	53
NB68440	1481	75.1	145	45
OK696740	1471	76.1	144	48
TX69A367	1365	73.6	142	50
KS7016	1260	75.3	145	50
TX62A2522-1-4	1223	76.5	147	50
CI15158	1043	76.1	151	48

L.S.D. = 373, C.V. = 14.0%

Burlington, Colorado
Three replications

C. I. or Sel. No.	Yield	Volume Weight	Plant Height
	kg/ha	kg/hl	cm
TX65A1268	4474	73.8	69
CI14078	4304	80.2	93
TX62A2522-1-4	4301	78.6	79
CO64043	4188	77.9	91
TX69A367	4149	73.5	74
CO695552	4092	79.1	92
CO696317	4056	77.4	95
CI15075	4030	76.4	84
OK696731	3996	77.4	81
TX62A2782-4-2	3962	77.7	82
TX69A571	3920	77.4	63
KS7016	3915	77.5	94
CI15158	3873	79.1	86
OK696740	3721	76.5	74
KS70H134	3665	74.8	75
CI13996	3660	76.5	97
NB68435	3628	80.0	92
KS70H179	3556	74.6	86
NB68440	3500	75.2	73
OK60118	3482	75.2	92
TX69A565	3333	72.6	64
KS65274	3329	75.2	84
SD7117	3277	74.9	69
CI 1442	3255	78.2	91
NB68437	3245	78.2	84
NE701132	2801	75.6	67

L.S.D. = 857, C.V. = 13.5%

Springfield, Colorado
Three replications

C. I. or Sel. No.	Yield kg/ha	Volume Weight kg/hl	Days to Heading	Days to Ripe	Plant Height cm
KS70H134	4290	79.7	126	168	72
OK696731	4159	77.8	127	169	73
SD7117	4146	77.8	126	168	78
NB68440	4101	76.9	124	167	67
CI15075	4088	78.8	124	167	72
TX69A571	4065	80.5	122	164	53
TX69A565	4048	78.8	125	167	56
TX69A367	4037	80.4	123	166	56
TX62A2522-1-4	4012	79.5	126	169	62
KS70H179	3988	79.6	126	169	74
CO64043	3980	79.7	126	169	76
CI 1442	3879	77.4	129	173	86
NB68435	3866	80.6	118	164	64
CO696317	3740	80.0	119	166	65
CI13996	3680	80.4	125	170	72
OK696740	3678	77.8	127	168	72
CI15158	3662	79.2	126	170	68
KS7016	3626	78.9	126	170	74
TX62A2782-4-2	3626	80.8	122	168	62
CO695552	3608	80.4	116	164	66
OK60118	3593	78.2	119	163	68
KS65274	3557	78.0	118	163	68
NB68437	3526	77.8	123	166	56
TX65A1268	3375	78.2	119	167	47
CI14078	3373	78.9	116	165	58
NE701132	3253	78.7	125	170	75

L.S.D. = 458, C.V.=7.2%

Yellow Jacket, Colorado
Three replications

C. I. or Sel. No.	Yield	Volume Weight	Plant Height
	kg/ha	kg/hl	cm
KS70H134	2660	77.7	54
KS70H179	2577	78.9	56
CO64043	2519	78.7	57
KS65274	2518	81.0	67
NE701132	2495	79.7	57
SD7117	2485	77.9	55
CI15075	2441	76.8	58
OK696731	2421	76.0	53
CI13996	2371	78.8	64
KS7016	2325	79.9	55
NB68440	2320	75.6	51
OK696740	2317	78.7	55
NB68435	2309	79.2	64
TX69A367	2288	78.9	53
TX65A1268	2287	80.6	44
OK60118	2281	77.8	63
CO695552	2277	80.4	63
CI15158	2228	78.0	57
TX69A565	2116	75.2	42
CI 1442	2091	79.6	61
TX69A571	2082	78.0	43
NB68437	1998	76.1	51
TX62A2522-1-4	1995	79.7	53
CI14078	1927	81.5	61
CO696317	1903	80.1	58
TX62A2782-4-2	1627	78.6	57

L.S.D. = 346, C.V. = 9.1%

Mead, Nebraska
Three replications

C. I. or Sel. No.	Yield	Volume weight	Days to heading	Plant height	Leaf Rust Sev.	Leaf Rust Res.	Stem Rust Sev.	Stem Rust Res.	Septoria
	kg/ha	kg/hl		cm	%	0-9	%	0-9	0-9
KS7016	5511	78.9	151	116	1	2	1	2	4
KS70H179	5473	79.2	150	114	1	2	1	2	4
KS70H134	5363	78.6	152	117	1	2	1	2	4
OK696731	5291	76.1	152	115	1	2	1	2	4
SD7117	5201	78.6	151	115	10	3	1	2	4
OK696740	5177	77.0	152	113	10	3	1	2	3
CO64043	4991	79.1	151	118	30	8	1	2	4
NB68435	4915	78.3	153	118	15	8	1	2	4
CI15075	4814	78.3	151	112	25	8	1	3	5
NE701132	4756	74.4	152	116	1	2	10	8	6
CI13996	4596	78.4	150	119	40	8	1	2	5
NB68440	4565	76.2	151	107	25	7	1	2	6
CO695552	4098	77.9	150	107	2	2	30	8	5
NB68437	3910	76.9	149	97	20	8	1	2	6
TX69A571	3704	75.5	151	89	20	8	**40**	8	7
TX62A2522-1-4	3672	76.8	152	87	10	8	50	8	5
TX69A565	3663	71.7	153	90	1	2	10	8	5
TX62A2782-4-2	3437	78.9	154	**91**	5	3	40	8	4
CO696317	3390	74.7	151	101	40	8	10	8	5
CI15158	3264	77.3	151	94	1	2	60	8	7
TX69A367	3184	75.6	150	85	40	8	5	7	6
KS65274	3004	78.3	148	103	25	8	10	7	8
CI 1442	2710	75.1	155	124	20	8	50	8	5
CI14078	2574	80.8	149	97	30	8	25	7	7
TX65A1268	2470	73.4	148	75	0	0	60	8	8
OK60118	1921	78.0	148	102	75	8	10	7	5

L.S.D. = 558, C.V. = 8.2%

Clay Center, Nebraska
Three replications

C. I. or Sel. No.	Yield	Volume Weight	Days to Heading	Plant Height
	kg/ha	kg/hl		cm
OK696740	4042	76.6	145	103
KS7016	3894	75.9	146	110
SD7117	3867	75.7	146	106
KS70H134	3854	76.6	146	104
KS70H179	3847	75.7	145	103
CI15075	3816	73.3	145	104
NE701132	3789	75.5	146	108
TX69A367	3778	72.2	145	91
CO64043	3688	74.9	145	101
OK696731	3614	75.6	146	105
KS65274	3596	77.4	145	103
NB68437	3556	74.8	145	93
TX69A571	3551	74.0	145	87
NB68435	3542	73.9	146	110
NB68440	3464	72.6	145	97
CO695552	3403	74.0	145	101
CI15158	3318	71.9	148	93
TX62A2782-4-2	3262	76.0	146	91
CI13996	3260	75.2	144	102
TX62A2522-1-4	3230	72.4	146	89
TX69A565	3190	64.4	146	89
CI14078	3170	78.0	144	98
TX65A1268	3081	71.9	144	82
OK60118	2883	72.0	143	98
CO696317	2710	69.5	149	102
CI 1442	2426	69.8	151	111

L.S.D. = 529, C.V. = 9.1%

North Platte, Nebraska
Three replications

C.I. or Sel. No.	Yield	Volume Weight	Days to Heading	Plant Height	Surv.
	kg/ha	kg/hl		cm	0-9
OK696731	4238	78.2	151	96	3
KS7016	4226	78.2	151	94	3
SD7117	4215	78.7	151	96	1
OK696740	4036	78.0	151	92	3
KS70H134	4029	77.8	152	97	2
KS70H179	4024	77.9	151	90	3
NB68435	3914	76.0	152	102	2
NE701132	3787	77.1	153	91	1
CI15075	3729	74.9	152	88	1
CO64043	3724	77.9	151	97	1
TX62A2522-1-4	3695	73.9	151	75	4
TX65A1268	3675	73.7	151	69	1
CI13996	3583	76.8	151	97	0
CI15158	3572	76.6	151	83	0
CO695552	3551	76.4	152	86	3
TX69A367	3448	73.9	151	75	1
TX62A2782-4-2	3437	77.7	153	78	5
NB68437	3390	74.8	151	84	2
KS65274	3367	78.0	152	87	0
NB68440	3354	74.6	151	84	1
CI14078	3284	79.7	152	86	1
TX69A565	3278	68.5	151	78	5
OK60118	3266	75.3	152	88	2
CI 1442	3163	76.4	155	100	5
CO696317	3161	74.8	152	85	4
TX69A571	2966	74.4	152	71	0

L.S.D. = 416, C.V. = 6.8 %

Alliance, Nebraska
Three replications

C. I. or Sel. No.	Yield kg/ha	Volume Weight kg/hl	Plant Height cm
TX69A571	4583	77.0	87
CI15075	4562	74.9	109
KS70H134	4415	75.7	109
TX62A2522-1-4	4412	76.6	84
OK696740	4294	76.0	109
SD7117	4271	75.6	110
NB68435	4262	75.9	118
KS70H179	4202	76.1	113
TX69A367	4193	74.8	88
CO64043	4188	77.3	113
TX65A1268	4168	72.6	79
TX69A565	4157	72.1	82
CI13996	4154	76.4	117
OK696731	4150	76.1	108
CO695552	4110	77.5	108
KS65274	4045	76.9	109
NB68440	3977	74.7	102
KS7016	3829	76.0	108
OK60118	3820	77.1	115
CI15158	3803	77.1	100
CI14078	3755	79.5	97
NE701132	3722	77.8	106
NB68437	3708	75.2	96
CI 1442	3448	76.9	130
CO696317	3448	77.4	91
TX62A2782-4-2	3426	77.7	85

L.S.D. = 539, C.V. = 7.9%

Presho, South Dakota
Three replications

C. I. or Sel. No.	Yield	Volume Weight	Surv.	Lodg.	Leaf Rust Sev.	Leaf Rust Res.	Stem Rust Sev.	Stem Rust Res.	Scab	Necrosis
	kg/ha	kg/hl	0-9	0-9	%	0-9	%	0-9	0-9	0-9
NB68435	3589	73.8	9	3	25	4	25	4	1	4
NE701132	3381	74.3	9	1	0	0	5	3	3	1
KS65274	3315	74.2	7	4	0	0	0	0	1	6
KS7016	3262	73.3	9	4	0	0	0	0	1	5
KS70H179	3154	74.4	8	5	0	0	0	0	1	8
CI13996	3113	74.4	9	7	45	8	0	0	1	7
NB68440	3083	71.5	9	8	25	4	0	0	5	3
OK696740	3073	73.1	9	5	0	0	0	0	1	7
CI15075	3063	72.4	9	6	0	0	0	0	5	7
KS70H134	3039	73.8	8	6	0	0	0	0	1	9
TX69A367	2867	70.0	8	1	0	0	5	2	5	6
OK696731	2833	73.7	9	4	99	8	99	8	9	5
TX69A571	2544	73.9	8	2	99	8	40	7	2	5
NB68437	2544	72.8	9	4	5	4	0	0	1	4
CO64043	2537	74.3	9	5	5	4	5	4	1	7
CO695552	2530	72.9	5	1	5	4	99	8	5	4
SD7117	2523	73.9	9	5	0	0	0	0	0	8
TX62A2522-1-4	2073	70.0	8	0	10	4	99	8	5	4
CI 1442	2020	68.6	9	7	5	4	40	8	0	2
OK60118 1/	1782	73.5	2	2	99	8	65	8	1	3
CI14078	1686	76.1	5	4	25	4	65	8	9	9
TX65A1268	1662	71.6	9	6	5	2	65	8	3	4
CI15158	1432	72.9	6	0	0	0	40	8	1	3
TX62A2782-4-2	1307	70.3	6	1	0	0	65	8	0	6
TX69A565	1248	63.2	8	1	0	0	5	2	9	9
CO696317 1/	0	0.0	1	0	65	4	99	8	0	5

L.S.D. = 812, C.V. = 18.7%

1/ OK60118 and CO696317 were excluded from the analysis of variance because of winter kill in one and three plots, respectively.

Ames, Iowa
Three replications

C. I. or Sel. No.	Volume weight	Days to heading	Days to Ripening	Plant height	Winter surv-ival	Lodging	Leaf Rust Sev.	Leaf Rust Resp.
	kg/hl			cm	0-9	0-9	%	0-9
CI1442	71.2	156	193	112	9	0	65	7
CI13996	71.7	154	192	97	7	0	40	7
CI15075	70.0	155	192	97	7	0	35	7
TX62A2782-4-2	--	157	196	64	1	0	15	3
TX62A2522-1-4	64.0	156	192	79	5	0	40	8
TX65A1268	63.5	153	191	69	6	0	70	7
CO695552	63.2	156	196	84	1	0	15	7
CO696317	--	--	--	--	0	-	--	-
CI14078	--	156	195	74	1	0	80	8
CI15158	--	158	200	71	2	0	10	1
NB68435	72.5	154	192	104	7	0	65	7
NB68437	70.7	154	191	91	9	1	55	7
KS7016	74.6	154	192	107	9	0	1	3
TX69A571	66.3	156	192	74	3	0	50	7
TX69A367	60.2	156	192	71	2	0	35	7
TX69A565	60.6	156	193	71	3	0	30	1
CO64043	71.3	152	191	104	9	1	45	7
OK696731	70.7	154	192	97	8	1	1	3
OK696740	72.5	153	191	102	9	0	1	3
OK60118	--	--	--	76	2	0	60	7
KS65274	70.0	150	190	102	9	3	55	7
KS70H134	70.8	155	194	97	6	0	1	1
KS70H179	74.0	154	194	104	7	0	1	3
SD7117	73.0	154	194	104	7	0	5	1
NB68440	69.9	155	191	94	9	3	45	7
NE701132	73.7	155	195	104	8	0	40	1

Columbia, Missouri
Three replications

C. I. or Sel. No.	Yield	Volume Weight	Days to Heading	Plant Height	Surv.	Lodg.	Leaf Rust Sev.	Septoria
	kg/ha	kg/hl		cm	0-9	0-9	%	0-9
TX69A367	4233	80.0	137	105	9	0	40	7
NB68435	4036	77.4	141	131	9	1	11	6
CI13996	4029	80.6	138	126	9	4	15	6
TX69A571	3987	77.4	139	97	9	0	43	6
CO64043	3955	80.6	138	125	9	4	12	6
CI15075	3921	79.3	139	118	9	1	3	6
OK60118	3840	82.6	136	122	9	1	30	6
SD7117	3812	80.0	141	124	9	1	0	6
CO695552	3806	80.0	138	120	9	0	2	6
KS70H179	3693	81.3	141	121	9	0	0	6
CI15158	3662	78.7	140	102	9	0	0	7
CI14078	3604	84.5	136	117	8	0	70	7
TX62A2522-1-4	3570	77.4	142	96	9	0	73	7
TX65A1268	3455	79.3	134	88	9	0	43	7
TX69A565	3383	72.2	140	101	9	0	10	7
NE701132	3364	78.0	142	125	9	0	0	6
NB68437	3340	78.7	139	114	9	3	5	6
KS70H134	3332	80.0	141	128	9	2	3	6
OK696731	3326	79.3	142	128	9	4	0	6
NB^{B}68440	3304	78.7	141	111	9	0	17	6
KS7016	3270	79.3	142	126	9	3	0	6
TX62A2782-4-2	3240	80.0	142	99	8	0	1	5
KS65274	3224	82.6	135	117	9	1	56	7
OK696740	3159	79.3	141	126	9	4	0	6
CO696317	2709	74.8	142	102	7	0	53	6
CI 1442	1680	67.7	146	134	9	8	16	7

L.S.D. = 672, C.V. = 11.4%

Urbana, Illinois
Three replications

C. I. or Sel. No.	Yield	Volume Weight	Days to Heading	Plant Height	Lodg.	Mildew
	kg/ha	kg/hl		cm	0-9	0-9
CI15158	5378	78.3	147	94	2	7
TX62A2522-1-4	5295	75.8	145	88	1	6
TX62A2782-4-2	4976	79.2	144	86	3	9
TX65A1268	4862	75.2	139	82	1	9
NB68440	4855	76.5	145	94	6	2
OK60118	4846	78.3	140	102	7	6
TX69A565	4757	71.1	144	84	3	1
CO695552	4752	80.1	143	104	2	8
KS65274	4708	80.3	140	106	5	9
CO696317	4690	77.8	144	115	2	7
CI14078	4607	80.5	140	98	5	7
KS70H179	4594	77.4	145	106	8	5
NE701132	4578	78.0	145	114	6	6
NB68435	4409	78.8	145	103	5	7
SD7117	4382	76.7	145	102	7	4
CI13996	4339	76.9	144	98	7	5
TX69A367	4317	76.5	142	91	5	7
CO64043	4312	77.2	144	104	9	2
CI 1442	4296	76.3	148	105	7	6
TX69A571	4272	76.5	145	90	8	9
KS7016	4258	76.3	145	98	7	5
OK696740	4232	77.0	145	95	8	7
NB68437	4084	75.2	144	94	8	2
OK696731	4055	77.2	147	109	8	3
KS70H134	3991	78.8	146	109	6	7
CI15075	3805	76.9	144	104	7	6

L.S.D. = 638, C.V. = 8.4%

Lind, Washington
Three replications

C. I. or Sel. No.	Yield	Volume weight	Days to heading	Plant height
	kg/ha	kg/hl		cm
CI15075	1657	80.0	149	61
NE701132	1550	78.3	150	60
CI15158	1423	79.6	150	62
NB68435	1333	79.3	149	64
NB68440	1327	77.7	149	53
CO696317	1265	79.1	149	54
TX62A2522-1-4	1246	78.8	149	55
KS65274	1236	78.9	148	60
TX62A2782-4-2	1233	79.6	150	49
OK696731	1205	78.6	150	56
KS70H179	1142	79.2	149	56
KS70H134	1109	78.2	149	52
CI 1442	1078	78.2	151	61
TX69A565	1052	77.4	150	45
TX69A571	1045	80.4	148	49
OK696740	1043	78.8	149	50
SD7117	1028	78.8	148	60
TX65A1268	993	78.9	149	46
KS7016	980	78.6	148	55
CO695552	978	80.6	149	56
NB68437	899	78.3	148	48
TX69A367	873	78.2	147	50
CO64043	852	80.0	149	54
OK60118	768	79.3	149	56
CI13996	759	80.2	149	58
CI14078	758	80.9	147	56

L.S.D. = 366, C.V. = 19.6%

Table 2. Infection types produced on varieties in the 1972 Southern Regional Performance Nursery inoculated with selected cultures of Puccinia recondita F.S.P. tritici. (Data provided by L. E. Browder, Manhattan, Kansas).

C. I. or Sel. No.	Infection-type Produced by Parasite Culture[1/]										
	PRE1 WQL	65359-01	UN01-68B	2-83	66-763	3-27	3-20	66-20-1	UN17-68A	UN09-66A	UN02-64A
CI1442	9910[2/]	8910	9910	9910	9910	8810	8810	8810	8810	8810	9910
CI13996	0310	8910	8910	8810	9911	8810	8810	7810	8810	6750	8810
CI15075	0000	2310	0210	0210	0310	5610	0310	0210	0110	0210	7810
TX62A2782-4-2	7810	8910	8910	8910	9910	8810	8810	8810	8810	7850	8810
TX62A2522-1-4	7810	8910	9910	9910	9910	8810	8810	8810	8810	7810	8810
TX65A1268	0000	3310	0210	0211	0310	8810	8810	0210	8810	0310	8810
CO695552	8910	8910	0110	0110	9910	0210	0110	8810	0110	8810	0210
CO696317	7810	8910	8910	8810	9910	0211	0110	8810	0110	7810	0210
CI14078	0210	8910	0310	2350	0310	8810	8810	0210	8810	0210	8810
CI15158	0210	5610	0310	0211	8810	8810	0310	8810	8810	0210	6750
NB68435	0210	8910	8910	7810	2350	8810	8810	7810	8810	8810	8810
NB68437	0310	0350	0210	0350	3450	8810	8810	8810	8810	0210	8810
KS7016	0310	0410	0310	0210	0310	0210	0110	0110	0310	0210	0210
TX69A571	0211	8810	8910	9910	9910	8810	8810	8810	8810	8910	8810
TX69A367	0210	8810	0310	2350	0310	8810	8810	0210	0110	0210	8810
TX69A565	0210	2350	8910	2350	2350	8810	7810	1310	0210	8810	8810
CO64043	0210	0350	8910	0310	3450	2310	8810	8810	0210	2350	8810
OK696731	0210	0310	2350	0110	0310	0210	0110	0210	0210	0210	0310
OK696740	0210	0310	0310	0210	0310	0310	0110	0210	0210	0210	0310
OK60118	7810	8910	8910	8910	9910	8810	7810	8810	8810	7810	8810
KS65274	7810	8810	8910	9910	9910	8810	8810	0211	8810	8810	8810
KS70H134	0210	0310	0310	0310	0310	0110	0110	0211	0210	0330	0310
KS70H179	0310	0310	0210	0210	0310	0110	0110	0210	0110	0310	0210
SD7117	0210	0210	0210	0110	0310	0210	0110	0210	0310	0310	0210
NB68440	0310	0310	0350	8910	9910	8810	0110	8810	8810	3320	8810
NE701132	0310	5610	0310	7810	9910	9910	8810	8810	8810	0211	8810

1/ Culture numbers are listed according to identification of P. recondita cultures maintained by L. E. Browder.

2/ 1st digit = relative size of sporulating area from 0 = sporulation to 9 = largest sporulating area.
2nd digit = relative total size of typical lesions from 0 = no visible lesions to 9 = largest lesion.
3rd digit = infection type as follows: 1 = chlorosis associated with typical lesion; 3 = necrosis associated with typical lesion; and 5 = variable and intermixed size of sporulating area, size of lesions and nature of tissue damage in same plant.
4th digit = uniformity of infection types within a sample from plant to plant. Code represents fractional tenths of plants within sample with infection types other than those discorded in first three digits.

Table 3. Seedling reactions of varieties in the 1972 Southern Regional Winter Wheat Performance Nursery to Puccinia graminis tritici. (by D. V. McVey, Cereal Rust Laboratory, University of Minnesota, St. Paul)

			Reaction produced by isolates											
	C. I. or Sel. No.	Source	65-39-2	72-4-1	71-21-384(1)	71-21-550(1)	71-21-584(2)	70-M-003(1)	71-36-424(1)	71-45-883(1)	71-41-146(3)	71-M-24(3)	70-20-958(3)	71-13-449(3)
			R15	B-2	R11		R32		R17		R151		R56	R113
Kharkof	1442	check	S	S	S	S	S	I	S	S,R	S	S	S	S
Scout 66	13996	Nebr.	R	R	S	S	S	R	R	R	R	S	S	R
Centurk	15075	Nebr.	R	R	R	S	R	S	R	R	R	S	R	R
391-56-D8/Tascosa	TX62A2782-4-2	Texas	S	S	R	S	S	I	S	R	R	S	S	R,S
391-56-D8/Kaw	TX62A2522-1-4	Texas	S	S	S	S	S	I	S	R	R	S	S	S
1826-1/Parker	TX65A1268	Texas	R,S	S	R	R	R	R	R	R	R	R	S	R
Sn 64/Tpr/2/Co652961	CO69552	Colo.	S	S	S	S	S	S	R	R,S	R,S	S	S	S
Ptc/Y54/Tzp/Nor/Tpr/2961	CO696317	Colo.	R	R	R,S	R	R	R	R	R	R	S	R	R
Pronto	14078	DeKalb	S	S	I	S	S	I	S	R	R	S	S	R
Bezostaya	15158	IWWPN	S	S	S	S	S	S	R	S,R	S	S	S	S
Sut/CI 12995	NB58435	Nebr.	R	R	S	S	S	S	R	R	R	S	R	R
Sut/4/Ky58/Nth/2/Cmn/Tm/Mi/Hope/3/Pn/Cnn	NB68437	Nebr.	R	R	R	S	R	S	R	R	R	S	R	R
5*Sut/Agent	KS7016	Kans.	R	R	R	R	R	R	R	R	R	R	R	R
Short wheat/Scout Comp.	TX69A571	Texas	S	S	S	S	S	S	R,S	S	S	S	S	S
Ditto	TX69A367	Texas	S	S	S	R	R	R	S	R	R	S	S	R
Ditto	TX69A565	Texas	S	S	R	R	R	R	S	R	R	S	S	R
Scout Sel.	CO64043	Colo.	R	S,R	S	R	S	I	R	R	S	S	S	R
5*Scout/Agent	OK696731	Okla.	R	R	R	R	R	R	R	R	R	R	R	R
Ditto	OK696740	Okla.	R	R	R	R	R	R	R	R	R	I	R	R
D146-4	OK60118	Okla.	S	S	R	R	R	R	R	R	R	I	S	R
Tmp/Bsn	KS65274	Kans.	S	S	R	R	R	R	S	R	R	I	S	R
Agent/4*Scout	KS70H134	Kans.	R	R	R	R	R	R	R	R	R	R	R	R
Ditto	KS70H179	Kans.	R	R	R	R	R	R	R	R	R	R	R	R
Agent/4*Scout Composite	SD7117	S. D.	R	R	R	R	R	R	R	R	R	I	R	R
Sut/4/Ky58/Nth/2/Cmn/Tm/Mi/=Hope/Pn/Cnn	NB68440	Nebr.	R	R	R	R	R	I	R	R	R	S	R	R
Atl 66/Cmn/Lcr	NE701132	Nebr.	R	R	S	S	S	S	R	R	R	S	R	R

Table 4. Stem rust and mildew reactions of varieties in the 1972 Southern Regional Performance Nursery grown at St. Paul, Minnesota (by D. V. McVey, Cereal Rust Laboratory).

Variety	C. I. or Sel. No.	% Mildew	Stem Rust
Kharkof	1442	T	40S
Scout 66	13996	T	TR,S
Centurk	15075	T	10MS-S
391-56-D8/Tascosa	TX62A2782-4-2	10	20MS-S
391-56-D8/Kaw	TX62A2522-1-4	60	40MS-S
1826-1/Parker	TX65A1268	10	40S
Sn64/Tpr/2/CO652961	CO695552	20	40S
Ptc/Y54/Tzp/Nar/Tpr/2961	CO696317	10	5MS
Pronto	14078	10	40s
Bezostaya	15158	10	40S
Scout/C.I.12995	NB68435	20	20S
Sut/4/Ky58/Nth/2/Cnn/Tm/Mi/Hope/3/Pn/Cnn	NB68437	10	TR
5*Scout/Agent	KS7016	10	TR
Short Wheat/Scout Composite	TX69A571	60	40S
Short Wheat/Scout Composite	TX69A367	60	5MR
Short Wheat/Scout Composite	TX69A565	60	5MR
Scout Selection	CO64043	10	TR
5*Scout/Agent	OK696731	T	TR
5*Scout/Agent	OK696740	T	TR
D146-4	OK60118	10	20S
Triumph/Bison	KS65274		40S
Agent/4*Scout	KS70H134	60	TR
Agent/4*Scout	KS70H179	T	TR
Agent/4*Scout Composite	SD7117	T	TR
Sut/4/Ky58/Nth/2/Cnn/Tm/Mi/Hope/3/Pn/Cnn	NB68440	10	TR
Atl 66/Cmn//Lcr	NE701132	10	10S

Summary of SRPN Yields

State averages and ranks made by varieties in the SRPN in 1972 are summarized in table 5. Varieties are listed according to their region-wide rank. Centurk again was in top position although it ranked only twenty-sixth in Illinois and ninth in South Dakota. Four Scout/Agent lines were next highest-yielding on the average, with particularly good performance as a group in Texas, Oklahoma, Kansas, and Nebraska. Six varieties had regional average yields in excess of 3340 kg/ha (50 bu/a). Centurk's regional average was 3497 kg/ha or 52.4 bu/a.

Centurk also has the highest 2-year average regional yield among 12 varieties grown in 1971 and 1972. Its 2-year yield was 3454 kg/ha or nearly 52 bu/a. NB68435 and CO69552 were the next most productive on a 2-year basis (table 6).

The parameters $b_{y.x}$, r, and r^2 are reported for yield of varieties in table 7. These are based on the yield of individual varieties in relation to nursery mean yield at reporting stations in 1972. The regression coefficient $b_{y.x}$ is a measure of the response of a variety to changes in environment from poor (low nursery mean yield) to good (high nursery mean yield). The strongest response (1.22) in 1972 was shown by TX62A2522-1-4 although its productivity was low in relation to many other varieties. Among varieties with the highest mean performance Centurk exhibited the strongest response to changes in environment with a $b_{y.x}$ of 1.08. Its performance also was strongly correlated with nursery mean performance ($r = .98$). Its high coefficient of determination $r^2 = .95$ suggests that the performance of Centurk was highly predictable in relation to nursery mean performance. In contrast, the check variety Kharkof was the least productive, the least responsive to environmental changes, and was the least predictable in performance. Much progress obviously has been made by breeders in developing hard red winter varieties with high yield potential and improved adaptation to production conditions of the central plains.

The same parameters for yield of varieties in 1971 and 1972 are recorded in table 7a. Again, the highest mean yield in combination with good and predictable response to changes in environment was shown by Centurk. Also, TX62A2522-1-4 was the most responsive to environmental change ($b_{y.x} = 1.17$) on a 2-year basis but at a lower level of productivity.

Summary of Agronomic Data

Agronomic data other than yield are summarized in table 8. Pronto was the earliest heading and TX65A1268 had the shortest straw on the average. Highest winter survival was recorded for Kharkof and the lowest for CO 696317. The latter also lodged the least at 8 reporting stations. Several varieties exhibited combined field resistance to leaf and stem rust. Pronto produced grain with the highest average volume weight.

Table 5. Summary of mean yields (kg/ha) made by 26 varieties grown in the Southern Regional Performance Nursery in 25 trials in 1972, with state averages and ranks.

Variety	C. I. or Sel. No.	Nebraska					
		Mead	Clay Center	North Platte	Alliance	Average	Rank
Centurk	15075	4814	3816	3729	4562	4230	7
5*Scout/Agent	OK696731	5291	3614	4238	4150	4323	6
Agent/4*Scout	KS70H134	5363	3854	4029	4415	4415	1
Agent/4*Scout	KS70H179	5473	3847	4024	4202	4387	3
Agent/4*Scout Composite	SD7117	5201	3867	4215	4271	4389	2
Scout/C.I.12995	NB68435	4915	3542	3914	4262	4158	8
Short Wheat/Scout Composite	TX69A367	3184	3778	3448	4193	3651	16
Scout Selection	CO64043	4991	3688	3724	4188	4148	9
5*Scout/Agent	OK696740	5177	4042	4036	4294	4387	3
Scout 66	13996	4596	3260	3583	4154	3898	11
5*Scout/Agent	KS7016	5511	3894	4226	3829	4365	5
Short Wheat/Scout Composite	TX69A565	3663	3190	3278	4157	3572	18
Sn64/Tpr/2/CO652961	CO695552	4098	3403	3551	4110	3791	13
Atl 66/Cmn//Lcr	NE701132	4756	3789	3787	3722	4014	10
Short Wheat/Scout Composite	TX69A571	3704	3551	2966	4583	3701	15
Sut/4/Ky58/Nth/2/Cnn/Tm/Mi/Hope/3/Pn/Cnn	NB68440	4565	3464	3354	3977	3840	12
Sut/4/Ky58/Nth/2/Cnn/Tm/Mi/Hope/3/Pn/Cnn	NB68437	3910	3556	3390	3708	3641	17
391-56-D8/Kaw	TX62A2522-1-4	3672	3230	3695	4412	3752	14
391-56-D8/Tascosa	TX62A2782-4-2	3437	3262	3437	3426	3391	21
1826-1/Parker	TX65A1268	2470	3081	3675	4168	3349	22
Bezostaya	15158	3264	3318	3572	3803	3489	20
Ptc/Y54/Tzp/Nar/Tpr/2961	CO696317	3390	2710	3161	3448	3177	24
Triumph/Bison	KS65274	3004	3596	3367	4045	3503	19
Pronto	14078	2574	3170	3284	3755	3196	23
D146-4	OK60118	1921	2883	3266	3820	2973	25
Kharkof	1442	2710	2426	3163	3448	2937	26

Table 5. continued.

C. I. or Sel. No.	Oklahoma					New Mexico				Texas					
	Still-water	Good-well	Lahoma	Average	Rank	Clovis dryl	Clovis irrig	Average	Rank	Bush-land dryl	Bush-land irrig	Chilli-cothe	Denton	Average	Rank
15075	3565	3650	3641	3619	3	726	5926	3326	3	1460	4130	925	2268	2196	6
OK696731	3372	3249	4094	3572	7	833	6216	3525	2	1314	4220	152	3454	2285	3
KS70H134	3394	3280	4058	3577	6	690	4990	2840	14	1076	3699	867	3243	2221	4
KS70H179	3758	3361	3659	3593	5	824	3882	2353	24	1010	4175	356	3227	2192	8
SD7117	3614	3592	3977	3728	2	645	5506	3076	10	863	3693	138	3454	2037	16
NB68435	3363	2838	3793	3331	17	887	4786	2837	15	1485	3962	416	2508	2093	14
TX69A367	3547	3260	3785	3531	12	887	6539	3713	1	1305	4025	1172	2153	2164	10
CO64043	3224	3022	3829	3358	16	1013	4979	2996	12	1364	3230	773	2611	1995	19
OK696740	3569	3206	3408	3394	15	905	4646	2776	16	998	4029	259	3355	2160	11
13996	3412	2769	3542	3241	20	914	5356	3135	9	1315	3587	755	2619	2069	15
KS7016	2995	3161	3443	3200	22	520	4625	2573	19	651	3762	183	3543	2035	17
TX69A565	3565	4390	4210	4055	1	475	6023	3249	4	1135	5028	206	2346	2179	9
CO695552	3018	3518	3448	3328	18	645	4044	2345	25	1386	2957	1134	3106	2146	12
NE701132	2775	2995	3704	3158	23	887	5463	3175	7	958	3684	383	3082	2027	18
TX69A571	2789	3042	3627	3153	24	672	5614	3143	8	1774	4283	497	2631	2296	2
NB68440	3026	3668	3287	3327	19	672	4097	2385	23	1588	3984	520	2348	2110	13
NB68437	3282	4071	3287	3547	9	887	5538	3213	6	1893	3807	1006	2535	2310	1
TX62A2522-1-4	2681	4094	3717	3497	13	627	3915	2271	26	1097	3567	104	1564	1583	25
TX62A2782-4-2	3062	4089	3444	3532	11	708	5334	3021	11	1411	4076	511	2779	2194	7
TX65A1268	2255	5155	3268	3559	8	277	4624	2451	22	1449	2719	1652	2066	1972	20
15158	2712	4260	3637	3536	10	1003	4452	2728	18	1458	3345	513	2246	1891	22
CO696317	2735	3854	3650	3413	14	600	5872	3236	5	1718	4040	780	2270	2202	5
KS65274	3188	4433	3211	3611	4	636	4463	2550	20	565	2279	1378	2064	1572	26
14078	2453	4413	2793	3220	21	761	5098	2930	13	1377	2748	1266	2364	1939	21
OK60118	3349	3394	2690	3144	25	690	4797	2744	17	960	2202	1472	2304	1735	23
1442	2349	2567	2533	2483	26	842	4237	2540	21	1135	3062	605	1716	1630	24

Table 5. continued

C. I. or Sel. No.	Colorado							Kansas						South Dakota	
	Fort Collins	Spring-field	Akron	Burling-ton	Yellow Jacket	Average	Rank	Manhat-tan	Hays	Colby	Garden City	Average	Rank	Presho	Rank
15075	8067	4088	1967	4030	2441	4119	2	4339	3131	2650	2721	3210	4	3063	9
OK696731	6753	4159	1745	3996	2421	3815	10	4482	3642	2683	2555	3341	2	2833	12
KS70H134	7054	4290	1981	3665	2660	3930	7	4263	3281	2406	2990	3235	3	3039	10
KS70H179	7023	3988	1496	3556	2577	3728	15	4341	3678	2650	2914	3396	1	3154	5
SD7117	7243	4146	1494	3277	2485	3729	14	4267	3499	2444	2512	3181	5	2523	17
NB68435	8413	3866	1546	3628	2309	3952	6	3768	3185	2516	2810	3070	7	3589	1
TX69A367	8763	4037	1365	4149	2288	4120	1	3705	3033	2383	2432	2888	15	2867	11
CO64043	6314	3980	1993	4188	2519	3799	13	3902	3107	2483	2772	3066	8	2537	15
OK696740	6511	3678	1471	3721	2317	3540	22	3689	3454	2452	2254	2962	12	3073	8
13996	6453	3680	1869	3660	2371	3607	21	4064	2894	2727	2788	3118	6	3113	6
KS7016	7134	3626	1260	3915	2325	3652	19	3942	3550	2421	2315	3057	9	3262	4
TX69A565	7942	4048	1597	3333	2116	3807	11	3922	2378	1824	3079	2801	20	1248	25
CO695552	7969	3608	1680	4092	2277	3925	8	3763	3241	2525	2577	3027	10	2530	16
NE701132	8319	3253	1516	2801	2495	3677	17	3971	3151	2177	2223	2881	16	3381	2
TX69A571	7879	4065	1536	3920	2082	3896	9	3288	2916	2483	2447	2784	21	2544	13
NB68440	7601	4101	1481	3500	2320	3801	12	4003	2898	2183	2526	2903	14	3083	7
NB68437	7287	3526	1599	3245	1998	3531	23	3915	2661	2177	2317	2768	22	2544	13
TX62A2522-1-4	8884	4012	1223	4301	1995	4083	3	4193	2564	1895	2059	2678	25	2073	18
TX62A2782-4-2	7404	3626	1585	3962	1627	3641	20	4350	2618	1979	2505	2863	17	1307	24
TX65A1268	8229	3375	1560	4474	2287	3985	5	3673	2829	2402	2492	2849	18	1662	22
15158	6771	3662	1043	3873	2228	3515	25	3833	2941	2448	2660	2971	11	1432	23
CO696317	8929	3740	1545	4056	1903	4035	4	3447	2636	2490	2812	2846	19	0	26
KS65274	6673	3557	1536	3329	2518	3523	24	3606	2638	2227	2277	2687	24	3315	3
14078	7166	3373	1869	4304	1927	3728	15	3644	2251	2729	2223	2712	23	1686	21
OK60118	7377	3593	1616	3482	2281	3670	18	3745	2865	2548	2525	2921	13	1782	20
1442	6390	3879	1642	3255	2091	3451	26	2053	2371	2041	2420	2221	26	2020	19

Table 5. concluded.

C. I. or Sel. No.	Illinois		Missouri		25 test
	Urbana	Rank	Columbia	Rank	Average
15075	3805	26	3921	6	3497
OK696731	4055	24	3326	19	3474
KS70H134	3991	25	3332	18	3436
KS70H179	4594	12	3693	10	3418
SD7117	4382	15	3812	8	3405
NB68435	4409	14	4036	2	3390
TX69A367	4317	17	4233	1	3390
CO64043	4312	18	3955	5	3308
OK696740	4232	22	3159	24	3277
13996	4339	16	4029	3	3274
KS7016	4258	21	3270	21	3265
TX69A565	4757	7	3383	15	3252
CO695552	4752	8	3806	9	3250
NE701132	4578	13	3364	16	3249
TX69A571	4272	20	3987	4	3246
NB68440	4855	5	3304	20	3216
NB68437	4084	23	3340	17	3183
TX62A2522-1-4	5295	2	3570	13	3138
TX62A2782-4-2	4976	3	3240	22	3126
TX65A1268	4862	4	3455	14	3126
15158	5378	1	3662	11	3101
CO696317	4690	10	2709	25	3087
KS65274	4708	9	3224	23	3033
14078	4607	11	3604	12	3018
OK60118	4846	6	3840	7	2970
1442	4296	19	1680	26	2597

Table 6. Summary of 2-year mean yields for 12 varieties grown in the Southern Regional Performance Nursery in 22 trials in 1971 and 1972, with state averages and ranks (kg/ha).

Variety	C. I. or Sel. No.	Texas					New Mexico			
		Bush-land	Chilli-cothe	Denton	Aver-age	Rank	Clovis dryl.	Clovis irrig.	Aver-age	Rank
Centurk	CI15075	4503	664	2564	2577	8	659	5306	2982	1
Scout/C.I.12995	NB68435	4350	585	2773	2569	9	713	4473	2593	8
Sn64/Tpr/2/CO652961	CO69552	4003	722	3266	2663	6	551	4075	2313	11
1826-1/Parker	TX65A1268	4561	1104	2538	2734	4	318	4351	2334	10
Scout 66	CI13996	4492	733	3002	2742	3	746	4919	2833	2
Ptc/Y54/Tzp/Nar/Tpr/2961	CO696317	4736	582	3087	2801	1	603	4652	2627	7
Sut/4/Ky58/Nth/2/Cnn/Tm/Mi/Hope/3/Pn/Cnn	NB68437	4700	770	2758	2743	2	726	4721	2724	3
391-56-D8/Kaw	TX62A2522-1-4	4643	279	2212	2378	11	408	4078	2243	12
Bezostaya	CI15158	4430	643	2621	2565	10	818	4535	2676	4
391-56-D8/Tascosa	TX62A2782-4-2	4743	498	2916	2719	5	590	4760	2675	5
Pronto	CI14078	4179	812	2795	2595	7	636	4710	2673	6
Kharkof	CI1442	3060	580	2212	1951	12	677	4198	2437	9

Table 6. continued

C. I. or Sel. No.	Oklahoma					Kansas						Illinois		Missouri	
	Still-water	Good-well	Aver-Lahoma	Aver-age	Rank	Man-hattan	Hays	Colby	Garden City	Aver-age	Rank	Urbana	Rank	Columbia	Rank
CI15075	3502	3583	2712	3265	4	4258	2144	3222	2867	3123	1	3947	10	5182	1
NB68435	3348	3325	3062	3245	6	3879	2373	3127	2917	3074	2	4260	6	5095	2
CO69552	3278	3618	2968	3288	3	4136	2360	3069	2507	3018	3	4469	4	4771	4
TX65A1268	2856	4893	2738	3496	1	3583	2447	3079	2629	2934	6	4796	2	4623	5
CI13996	3455	3265	2926	3215	8	3799	2100	3258	2854	3003	5	4182	7	4859	3
CO696317	3049	3435	3036	3173	9	3797	2502	3197	2553	3012	4	3616	12	4139	9
NB68437	3298	3763	2692	3251	5	3801	2082	2817	2537	2809	10	4141	8	4582	8
TX62A2522-1-4	2973	3664	2828	3155	10	4127	2253	2804	2349	2883	7	4604	3	4620	6
CI15158	2966	4228	3080	3424	2	3884	1876	2873	2769	2850	8	5006	1	4605	7
TX62A2782-4-2	3162	3825	2697	3228	7	4114	2090	2829	2310	2836	9	4342	5	4044	10
CI14078	2769	4002	2646	3139	11	3397	1847	3127	2381	2689	11	3980	9	4028	11
CI1442	2563	2209	1973	2248	12	2840	1652	2332	2448	2318	12	3751	11	3153	12

Table 6. concluded

C. I. or Sel. No.	Colorado							Nebraska					22 Test Average
	Fort Collins	Spring-field	Akron	Burling-ton	Yellow Jacket	Aver-age	Rank	Mead	Clay Center	North Platte	Average	Rank	
CI15075	7177	3822	2002	3205	2132	3667	2	4804	3544	4202	4183	1	3454
NB68435	7005	3665	1927	2998	2089	3537	5	4706	3532	4092	4110	2	3377
CO69552	6633	3482	2048	3435	2026	3525	6	4162	3526	4107	3931	4	3328
TX65A1268	7021	3458	1806	3568	2116	3594	3	3013	3263	4171	3482	10	3315
CI13996	5650	3518	2233	2866	1976	3248	9	4668	3325	3974	3989	3	3309
CO696317	8288	3458	1830	3089	1953	3723	1	3921	3098	3650	3556	9	3285
NB68437	6487	3428	1791	2940	1972	3323	7	4232	3539	3708	3826	7	3249
TX62A2522-1-4	7471	3526	1560	3554	1779	3578	4	4061	3556	4154	3924	5	3249
CI15158	5583	3355	1778	3204	2016	3187	11	3650	3451	3866	3655	8	3238
TX62A2782-4-2	6406	3307	1782	3179	1585	3252	8	4070	3468	4042	3860	6	3216
CI14078	5955	3329	1956	3165	1727	3226	10	2941	3235	3715	3297	11	3060
CI1442	5592	3200	1714	2487	1982	2995	12	3035	2590	3242	2956	12	2613

Table 7. 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 1972.

C. I. or Sel. No.	Average yield over 23 locations (kg/ha)	Regression coefficient ($b_{y.x}$)	Correlation coefficient (r)	Coefficient of determination (r^2)
OK696731	3646	.96	.94	.88
CI15075	3628	1.08	.98	.95
SD7117	3585	1.03	.96	.93
KS70H134	3565	.94	.96	.91
KS70H179	3563	.92	.93	.87
NB68435	3510	1.07	.97	.95
TX69A367	3510	1.18	.96	.92
TX69A565	3471	1.14	.95	.91
CO64043	3452	.84	.96	.92
OK696740	3418	.89	.94	.89
KS7016	3399	1.00	.94	.89
TX69A571	3396	1.04	.97	.93
CI13996	3390	.87	.97	.93
CO695552	3373	.99	.97	.94
NE701132	3367	1.10	.97	.93
NB68440	3339	.99	.98	.95
CO696317	3322	1.16	.96	.91
TX62A2782-4-2	3319	1.03	.97	.94
TX62A2522-1-4	3316	1.22	.96	.92
NB68437	3305	.95	.98	.95
CI15158	3286	.92	.96	.92
TX65A1268	3254	1.08	.92	.85
CI14078	3152	.94	.93	.87
KS65274	3093	.93	.94	.89
OK60118	3087	.95	.92	.85
CI1442	2709	.81	.92	.84

Table 7a. 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 and 1972.

C. I. or Sel. No.	Average yield over 47 locations (kg/ha)	Regression coefficient ($b_{y.x}$)	Correlation coefficient (r)	Coefficient of determination (r^2)
CI15075	3495	1.12	.98	.96
NB68435	3427	1.04	.98	.96
CO695552	3371	1.01	.98	.95
TX65A1268	3338	1.07	.93	.87
CI13996	3337	.93	.97	.94
CO696317	3321	1.12	.94	.88
TX62A2522-1-4	3316	1.17	.97	.94
NB68437	3282	1.00	.98	.96
CI15158	3267	.94	.95	.90
TX62A2782-4-2	3252	1.03	.98	.96
CI14078	3096	.92	.94	.89
CI1442	2647	.80	.92	.85

Table 8. Summary of agronomic and yield data for varieties grown in the Southern Regional Performance Nursery in 1972.

Variety	C. I. or Sel. No.	Days to 1/ head	Days to 1/ ripe	Plant height	Winter survival	Lodging	Shattering	Growth rate	Freeze damage	Tillers per ft^2
				cm	0-9	0-9	0-9	0-9	%	
	Number of trials	20	1	24	5	8	1	2	1	1
Centurk	CI15075	132	167	88 84	7.4	2.5	0	7	2	69
5* Scout/Agent	OK696731	133	169	91 87	7.8	3.0	0	7	7	72
Agent/4*Scout	KS70H134	132	168	92 87	7.4	3.6	0	8	12	61
Agent/4*Scout	KS70H179	133	169	92 88	7.6	3.3	0	7	5	65
Agent/4*Scout Composite	SD7117	133	168	92 87	7.4	3.8	0	6	9	63
Scout/C.I.12995	NB68435	132	164	91 91	7.6	1.4	0	6	2	76
Short Wheat/Scout Composite	TX69A367	130	166	78 74	7.0	0.8	0	7	15	77
Scout Selection	CO64043	131	169	92 88	7.4	3.9	0	8	7	83
5*Scout/Agent	OK696740	133	168	91 87	7.8	3.3	0	6	2	67
Scout 66	CI13996	131	170	94 90	7.2	4.3	0	6	5	74
5*Scout/Agent	KS7016	133	170	92 88	7.8	2.6	0	6	10	71
Short Wheat/Scout Composite	TX69A565	132	167	79 71	7.8	0.6	2	7	10	58
Sn64/Tpr/2/CO652961	CO695552	129	170	91 86	6.8	1.0	0	8	5	58
Atl 66/Cmn//Lcr	NE701132	133	164	92 88	5.6	2.0	0	8	7	71
Short Wheat/Scout Composite	TX69A571	131	164	79 72	7.0	1.9	0	8	5	71
Sut/4/Ky58/Nth/2/Cnn/Tm/Mi/Hope/3/Pn/Cnn	NB68440	132	167	81 79	7.4	2.5	0	7	7	69
Sut/4/Ky58/Nth/2/Cnn/Tm/Mi/Hope/3/Pn/Cnn	NB68437	131	166	81 78	7.6	2.1	0	6	5	76
391-56-D8/Kaw	TX65A2522-1-4	133	169	78 74	7.8	0.1	1	7	15	59
391-56-D8/Tascosa	TX62A2782-4-2	132	168	80 76	7.4	0.8	1	8	5	66
1826-1/Parker	TX65A1268	127	167	69 66	7.4	1.1	1	6	7	77
Bezostaya	CI15158	132	170	84 79	6.4	0.9	0	8	0	40
Ptc/Y54/Tzp/Mar/Tpr/2961	CO696317	131	166	86 82	5.4	0.5	0	9	5	51
Triumph/Bison	KS65274	128	163	90 86	6.6	1.5	0	7	17	50
Pronto	CI14078	126	165	83 81	6.2	2.3	0	8	7	67
D146-4	OK60118	128	163	91 87	6.2	2.8	0	8	17	64
Kharkof	CI1442	138	173	100 95	8.2	6.4	0	6	5	65

1/ From January 1.

Table 8. continued.

C. I. or Sel. No.	Leaf rust Sev. %	Leaf rust Resp.	Stem rust Sev. %	Stem rust Resp.	Septoria 0-9	Mildew 0-9	Necrosis 0-9	Scab 0-9	Bunt 0-9	Volume Weight kg/hl	Average yield kg/ha
Number of Trials	4	1	3	2	2	2	1	1	1	25	25
CI15075	10	S	0	R	4	4	7	5	7	77.7	3497
OK696731	25	R	33	M	3	2	5	9	6	77.4	3474
KS70H134	1	R	1	VR	4	5	9	1	5	77.6	3436
KS70H179	0	R	1	VR	4	3	1	8	6	78.0	3418
SD7117	3	MR	1	VR	4	3	8	0	6	77.6	3405
NB68435	27	S	11	MR	3	4	4	1	6	77.9	3390
TX69A367	34	S	5	M	5	5	6	5	6	76.6	3390
CO64043	26	S	4	MR	4	1	7	1	6	78.2	3308
OK696740	3	MR	1	VR	3	4	7	1	6	77.6	3277
CI13096	42	S	3	VR	4	4	7	1	6	78.0	3274
KS7016	0	R	1	VR	3	3	5	1	6	77.7	3265
TX69A565	4	R	5	M	5	5	9	9	6	73.3	3252
CO695552	2	R	47	S	4	6	4	5	7	78.5	3250
NE701132	2	R	5	M	4	4	1	3	8	77.5	3249
TX69A571	58	S	36	S	5	7	5	2	6	75.6	3246
NB68440	34	MS	3	VR	4	2	3	5	7	75.9	3216
NB68437	24	S	6	VR	5	2	4	1	7	76.8	3183
TX65A2522-1-4	29	S	57	S	4	5	4	5	2	77.3 1/	3138
TX62A2782-4-2	2	MR	37	S	3	7	6	0	7	78.7	3126
TX65A1268	19	-	50	S	6	6	4	3	7	76.4 1/	3126
CI15158	0	R	47	S	6	5	3	1	4	77.8	3101
CO696317	40	S	37	S	4	5	5	0	8	77.0 1/	3087
KS65274	39	S	10	M	6	7	6	1	1	78.2	3033
CI14078	48	S	33	S	5	6	9	9	8	80.3	3018
OK60118	65	S	28	S	4	5	3	1	6	77.7	2970
CI1442	16	S	35	S	4	6	2	0	7	75.7	2597

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

NORTHERN REGIONAL PERFORMANCE NURSERY

There were 18 varieties in this nursery in 1972, 8 of which were new and one which was entered from the SRPN. The nursery was grown in replicated plots at 18 sites in 8 states and Alberta, Canada. Single observation plots were grown at Mead, Nebraska and Aberdeen, Idaho. Yield data were reported from 11 nursery sites. Hail destroyed the nursery at Sidney, Nebraska; thin stands from winter injury forced abandonment of the nursery at Highmore, South Dakota. The nursery also was abandoned at Sidney, Montana. At Hettinger, North Dakota wind erosion during the winter forced abandonment of the nursery. Winterkilling was heavy at Williston and the nursery was not harvested. Data were not reported from Tetonia, Idaho because of misidentification of plots. Yield data were not reported from Casselton, North Dakota because of heavy winterkill of many nursery entries.

Varieties in the 1972 NRPN are listed. Yield and agronomic data from reporting sites appear in table 9. Stem rust data from the Cereal Rust Laboratory, St. Paul, Minnesota appear in tables 10 and 11. Leaf rust data from L. E. Browder, Kansas State University are summarized in table 12. NE701134 was inadvertently excluded from the irrigated and dryland nurseries grown at Clovis, New Mexico.

Entry No.	Variety	C.I. or Sel. No.	Source
1	Kharkof	1442	Check
2	Warrior	13190	"
3	Frontana/Cnn/2/Lancer	NE68493	Nebraska
4	Wrr/2/Atl 66/Cmn/3/Lcr	NE68510	"
5	Gage/Lancer	NE68427	"
6	Centurk	15075	"
7	Sundance (Cnn/Kharkof Me 22)	5520-8	Lethbridge
8	Recurrent Sel. Series I, Cycle II	SD6753	South Dakota
9	Bezostaya	15158	IWWPN
10*	Recurrent Selection	SD56713-10	South Dakota
11*	Agent/4* Scout	SD7117	" "
12*	Hume/Nebr. Semidwarfs Comp.	SD697	" "
13**	3* Parker/Bison	KS6623	SRPN (Kansas)
14*	Wrr/Minn. III-54-12	SD66117-2	South Dakota
15*	Pnc/3*Cnn/3/Ky58/Nth/2/ 2*Cnn-Tm-Mi-Hope/4/Sut	NE69441	Nebraska
16*	do.	NE69442	"
17*	Wrr*5/Agent	68F6635	"
18*	Atl 66/Cmn//Lcr	NE701134	"

* New entries in 1972
** Entered from the SRPN

Test Site Information

Nebraska Stations--See information for the SRPN.

Presho--See information for the SRPN.

Highmore--Nursery abandoned in the spring due to winter losses and thin stands.

Archer--Fall stand establishment was good. Winter injury was minimal and spring precipitation above normal. There were no diseases or insects of consequence.

Sheridan--Fall conditions were good and varieties emerged to full stands. There was no winterkilling. Excellent precipitation in May and June produced above-normal yields for the station. Diseases and insects were not a problem.

Moccasin--Fall and winter conditions were about normal for the area. Precipitation in late July and early August was above-normal. The nursery was not harvested until September 8.

Sidney (Montana)--No data were reported.

Casselton--Snow cover was light during periods of low temperature in the winter and heavy winterkilling resulted. Precipitation and temperatures during the spring and summer growing season were good. Yield data were not reported because of the heavy winterkill.

Williston--The nursery was abandoned due to severe winterkill.

Hettinger--Wind erosion destroyed a portion of the nursery and it was abandoned.

St. Paul--Conditions were not reported.

Waseca--Conditions were not reported.

Tetonia--Misidentification of plots at Tetonia forced abandonment of the nursery.

Aberdeen--Diseases failed to develop on the 2-row observation plots grown at Aberdeen so there were no data to report.

Lethbridge--An excellent nursery was grown. There was no winterkill. A somewhat dry spring and summer were accompanied by unusually cool temperatures enabling the wheat to yield well on minimal moisture.

Clovis (dryland)--Moisture conditions were good in the fall but poor during the winter and spring. Heavy rains in June delayed harvest.

Clovis (irrigated)--One hundred pounds per acre of nitrogen applied. The nursery was irrigated 6 times.

Disease Tests--Seedling reactions of nursery entries to 12 cultures of stem rust were determined by D. V. McVey. They are reported in table 11. Field reactions of nursery entries to stem rust and mildew at St. Paul, Minnesota appear in table 10. Infection types produced by 10 different leaf rust cultures on nursery entries are reported in table 12. The data were provided by L. E. Browder at Kansas State University.

Table 9. Yield and other data for varieties grown in the Northern Regional Performance Nursery in 13 trials in the hard red winter wheat region in 1972.

North Platte, Nebraska
Three replications

C. I. or Sel. No.	Yield	Volume Weight	Days to Heading	Plant Height	Lodg.
	kg/ha	kg/hl		cm	0-9
SD7117	4439	78.7	153	105	3
NB68493	4177	77.4	154	113	0
KS6623	4170	77.7	154	105	7
SD697	3955	76.9	152	108	2
SD56713-10	3899	76.9	156	107	0
NB68510	3861	77.5	155	109	5
NB68427	3809	77.1	155	103	0
CI15158	3805	77.3	153	91	0
NE69442	3794	77.0	155	105	2
CI13190	3762	75.1	156	100	4
5520-8	3724	77.5	159	104	0
SD66117-2	3668	77.9	156	100	4
CI15075	3661	76.1	153	99	6
68F6635	3545	74.4	156	105	3
SD6753	3412	76.9	154	103	1
NE69441	3407	77.3	154	107	6
CI 1442	3298	75.9	157	103	4
NE701134	3134	76.8	154	104	2

L.S.D. = 1027, C.V. = 16.3%

Alliance, Nebraska
Three replications

C. I. or Sel. No.	Yield	Volume Weight	Plant Height
	kg/ha	kg/hl	cm
CI15075	4688	75.9	111
NE69442	4655	77.4	124
NB68493	4303	77.0	114
CI15158	4278	77.7	102
68F6635	4262	76.1	120
SD66117-2	4208	78.0	121
NE69441	4181	77.7	126
CI13190	4161	76.0	120
NB68427	4132	76.6	112
SD697	4101	77.3	119
NB68510	4053	77.7	115
SD56713-10	3986	78.4	115
KS6623	3968	78.9	117
SD6753	3946	77.1	114
SD7117	3914	75.1	112
5520-8	3654	76.6	131
NE701134	3601	78.8	122
CI 1442	3500	77.1	130

L.S.D. = 452, C.V. = 6.6%

Mead, Nebraska
Observation plots

C. I. or Sel. No.	Yield	Volume weight	Days to heading	Plant height	Lodging	Leaf rust Sev.	Leaf rust Resp.	Stem rust Sev.	Stem rust Resp.	Septoria
	kg/ha	kg/hl		cm	0-9	%	0-9	%	0-9	0-9
SD7117	5091	80.6	154	119	0	1	2	1	2	5
SD56713-10	4815	80.6	154	127	0	10	7	1	2	5
SD697	4277	77.4	153	66	0	1	2	1	2	5
68F6635	4270	78.1	156	122	5	1	2	5	8	5
NB68510	4196	80.0	154	127	0	60	8	5	2	5
NB68427	4102	80.6	155	122	0	10	7	1	2	6
CI15075	4102	79.3	152	114	1	20	8	1	3	7
NE69442	4015	78.7	155	124	4	60	8	1	2	4
NE69441	3880	81.3	155	130	4	1	2	1	2	4
NB68493	3827	80.6	153	117	0	1	2	1	2	3
KS6623	3820	81.3	153	117	0	60	8	30	8	6
NE701134	3779	81.3	154	127	4	1	2	1	2	4
SD6753	3692	78.7	153	130	0	20	8	1	2	7
SD66117-2	3477	78.7	155	119	3	1	2	1	2	8
CI13190	3289	74.8	154	122	1	90	8	50	8	7
CI15158	3194	78.7	153	102	0	1	2	60	8	7
CI1442	2737	76.1	156	132	1	30	8	50	8	5
5520-8	1836	-	-	119	1	30	8	60	8	7

Presho, South Dakota
Three replications

C. I. or Sel. No.	Yield	Volume Weight	Surv.	Lodg.	Leaf Rust Sev.	Leaf Rust Res.	Stem Rust Sev.	Stem Rust Res.	Scab	Necrosis
	kg/ha	kg/hl	0-9	0-9	%	0-9	%	0-9	0-9	0-9
NB68427	3762	76.6	9	2	10	4	2	1	1	3
NB68493	3661	75.7	8	2	0	0	0	0	1	3
SD7117	3594	78.0	8	3	0	0	0	0	1	9
NE69442	3584	73.8	9	5	10	4	0	0	0	3
NE701134	3511	73.8	7	3	0	0	0	0	1	4
CI15075	3477	77.4	9	3	5	2	2	1	3	7
NE69441	3448	79.1	8	2	0	0	0	0	0	3
SD697	3420	73.9	9	3	99	8	0	0	0	3
68F6635 1/	3390	74.4	9	5	0	0	7	3	0	3
SD56713-10	3202	73.3	9	3	5	4	0	0	0	3
CI13190	3154	74.2	9	5	99	8	37	6	0	2
SD66117-2	2953	72.4	9	5	0	0	0	0	0	3
KS6623	2853	76.5	7	2	0	0	69	8	1	5
SD6753	2810	71.7	9	4	65	4	0	0	0	3
CI 1442	2803	71.1	9	5	99	8	45	8	0	3
NB68510	2774	73.9	8	5	10	4	0	0	0	5
CI15158	2291	73.9	7	0	0	0	99	8	1	5
5520-8	1788	65.1	9	4	5	4	65	8	0	2

L.S.D. = 1223, C.V. = 23.3%

1/ 68F6635 was excluded from the analysis of variance due to one missing plot.

Archer, Wyoming
Three replications

C. I. or Sel. No.	Yield	Volume Weight
	kg/ha	kg/hl
CI15075	2757	75.2
SD7117	2651	74.4
NE69442	2508	75.3
CI13190	2420	74.4
NB68510	2319	76.1
NE69441	2283	75.1
CI 1442	2277	72.8
KS6623	2250	77.4
NB68427	2229	75.2
SD56713-10	2211	75.0
5520-8	2173	73.9
NE701134	2165	75.9
CI15158	2154	76.1
68F6635	2142	74.4
SD697	2138	75.9
SD66117-2	2129	75.1
NB68493	2102	74.6
SD6753	2025	74.7

L.S.D. = 341, C.V. = 8.9%

Sheridan, Wyoming
Three replications

C. I. or Sel. No.	Yield kg/ha	Volume Weight kg/hl
SD7117	3882	78.7
CI15075	3878	80.9
NE69441	3554	79.0
NE69442	3504	76.9
KS6623	3420	78.7
NE701134	3285	78.8
SD697	3217	78.0
CI15158	3204	78.0
5520-8	3127	76.4
CI 1442	3042	76.8
SD66117-2	3007	80.8
SD6753	2973	77.7
NB68510	2965	79.0
SD56713-10	2963	78.3
68F6635	2851	78.0
NB68427	2822	79.6
CI13190	2629	79.3
NB68493	2614	79.3

L.S.D. = 1101, C.V. = 20.7%

Moccasin, Montana
Three replications

C. I. or Sel. No.	Yield	Volume Weight	Days to Heading	Days to ripe	Plant Height
	kg/ha	kg/hl			cm
CI15075	3533	77.4	163	219	73
NE69442	3184	77.4	162	219	77
KS6623	3159	79.1	161	219	75
CI13190	3145	77.3	162	212	76
NB68493	3067	77.8	162	212	81
SD7117	3054	75.2	160	212	75
NB68510	3026	76.9	163	212	85
CI 1442	3018	76.2	164	219	93
NE701134	3008	76.8	162	219	85
SD66117-2	3000	76.8	164	212	81
SD697	2948	74.3	159	212	81
NB68427	2926	76.0	162	212	72
68F6635	2919	90.0	164	219	82
5520-8	2910	74.3	167	219	95
SD56713-10	2881	76.9	164	212	85
CI15158	2836	77.8	164	219	73
SD6753	2807	73.7	161	212	82
NE69441	2591	76.4	163	212	80

L.S.D. = 508, C.V. = 10.1%

Casselton, North Dakota
Three replications

C. I. or Sel. No.	Volume weight	Days to heading	Plant height	Winter survival	Lodging
	kg/hl		cm	0-9	0-9
CI1442	68.4	172	103	3	3
CI13190	--	--	--	0	-
NB68493	72.2	165	95	0	-
NB68510	76.1	165	105	2	2
NB68427	69.3	166	85	2	0
CI15075	70.0	165	83	2	1
5520-8	64.5	173	105	6	2
SD6753	74.8	165	98	7	1
CI15158	72.2	166	75	1	0
SD56713-10	72.2	168	90	4	1
SD7117	74.8	164	85	2	0
SD697	75.2	165	92	6	1
KS6623	72.9	165	83	2	1
SD66117-2	76.1	166	95	4	1
NE69441	76.1	166	100	1	0
NE69442	75.2	166	100	5	1
68F6635	76.1	166	100	5	1
NE701134	--	--	--	0	-

St. Paul, Minnesota
Three replications

C. I. or Sel. No.	Yield	Plant Height	Lodg.	Leaf Rust Sev.	Leaf Rust Res.	Stem Rust Sev.	Stem Rust Res.
	kg/ha	cm	0-9	%	0-9	%	0-9
SD56713-10	2912	92	2	1	8	0	0
CI15075	2643	86	1	1	8	0	0
NB68493	2434	93	1	1	8	0	0
CI13190	2339	96	4	2	8	1	8
SD66117-2	2307	90	2	1	8	0	0
68F6635	2307	89	1	1	8	0	0
NB68427	2303	93	1	1	8	0	0
NE69442	2291	89	3	1	8	0	0
SD7117	2262	88	1	0	0	1	2
SD6753	2251	97	1	1	8	0	0
NE701134	2100	90	1	1	8	0	0
NB68510	2059	96	4	5	8	0	0
KS6623	1937	84	1	1	8	0	0
NE69441	1919	89	1	1	8	0	0
CI15158	1816	76	1	1	3	1	8
CI 1442	1794	112	4	1	8	5	8
SD697	1775	91	1	1	8	0	0
5520-8	1498	105	2	1	8	1	8

L.S.D. = 613, C.V. = 16.8%

Waseca, Minnesota
Three replications

C. I. or Sel. No.	Yield kg/ha	Volume Weight kg/hl
NB68427	3121	76.6
NE69441	3109	78.5
NE69442	3062	75.9
NB68493	3050	75.9
NE701134	2969	78.5
NB68510	2903	78.5
SD66117-2	2832	77.2
68F6635	2832	75.9
SD56713-10	2826	74.6
CI15075	2805	75.3
SD7117	2737	74.6
SD6753	2558	77.2
SD697	2528	76.6
CI15158	2094	72.1
CI 1442	2018	--
CI13190	1812	67.6
KS6623	1687	72.7
5520-8	1535	66.3

L.S.D. = 346, C.V. = 8.0%

Lethbridge, Alberta
Three replications

C. I. or Sel. No.	Yield kg/ha	Volume Weight kg/hl	Days to Heading	Days to Ripe	Plant Height cm	1000 Kernel wt. grams
5520-8	3368	81.3	168	212	80	38.6
CI15158	3203	83.1	163	208	68	45.8
CI15075	2987	82.6	163	208	64	31.8
NB68493	2912	83.1	163	209	68	34.8
CI13190	2906	82.6	164	210	77	39.2
68F6635	2881	82.6	162	208	69	36.2
NB68427	2863	83.1	163	208	69	37.8
CI 1442	2845	81.9	164	212	79	38.4
SD7117	2819	82.6	161	207	66	39.8
NE69442	2804	82.6	163	209	69	43.6
SD56713-10	2784	83.7	163	209	66	37.0
NE701134	2765	82.6	162	207	70	36.0
NB68510	2686	82.6	162	208	68	35.0
SD66117-2	2683	83.7	163	207	64	34.4
NE69441	2662	82.6	162	207	69	34.8
KS6623	2568	85.0	163	208	68	36.4
SD6753	2478	81.3	164	208	69	32.4
SD697	2394	82.6	160	207	69	34.8

L.S.D. = 294, C.V. = 6.2%

Clovis, New Mexico
Three replications, Dryland

C. I. or Sel. No.	Yield	Volume Weight	Days to Heading	Plant Height	Growth Rate
	kg/ha	kg/hl		cm	0-9
NE69442	1506	77.4	120	51	6
5520-8	1299	76.1	130	59	6
CI15158	1003	76.1	121	46	8
68F6635	977	76.1	121	51	6
CI13190	968	77.4	120	50	6
NB68510	896	76.1	119	51	6
NB68493	887	77.4	119	49	6
SD56713-10	869	--	120	46	6
KS6623	851	78.7	115	47	6
CI 1442	842	77.4	126	57	6
NB68427	833	77.4	123	42	6
NE69441	779	76.1	117	42	6
SD66117-2	744	77.4	118	45	6
SD697	735	76.1	114	55	6
CI15075	726	77.4	119	40	6
SD7117	645	76.1	118	37	6
SD6753	555	74.8	117	39	6

L.S.D. = 1339, C.V. = 17.2%

Clovis, New Mexico
Three replications, Irrigated

C. I. or Sel. No.	Yield	Volume Weight	Days to Heading	Plant Height	Lodg.	Growth Rate
	kg/ha	kg/hl		cm	0-9	0-9
CI15075	5926	80.8	121	111	0	8
68F6635	5721	79.7	127	126	3	6
SD7117	5506	78.6	124	125	7	6
NE69441	5023	79.9	124	125	3	6
NE69442	4969	79.5	128	129	7	6
NB68427	4893	80.2	125	122	1	6
SD6753	4743	78.6	122	124	0	6
SD697	4560	79.3	122	119	0	6
5520-8	4528	75.6	140	135	3	8
CI13190	4528	79.9	126	124	7	6
SD66117-2	4431	30.1	125	124	8	6
NB68493	4270	80.1	123	123	0	8
CI 1442	4237	78.7	130	132	8	6
SD56713-10	4194	79.9	125	131	5	6
KS6623	3904	81.0	122	119	0	8
NB68510	3786	79.1	124	129	4	6
CI15158	3377	81.0	123	113	0	8

L.S.D. = 380, C.V. = 25.4%

Table 10. Stem rust and mildew reactions of varieties in the 1972 Northern Regional Performance Nursery grown at St. Paul, Minnesota (by D. V. McVey, Cereal Rust Laboratory).

	C. I. or Sel. No.	% Mildew	Stem Rust
Kharkof	1442	10	40S
Warrior	13190	10	60S
Frontana/Cnn/2/Lancer	NB68493	T	10S
Wrr/2/Atl 66/Cmn/3/Lcr	NB68510	10	TR
Gage/Lancer	NB68427	10	tR,S
Centurk	15075	10	10S
Sundance (Cnn/Kharkof Me 22)	5520-8	T	60S
Recurrent Sel. Series I, Cycle II	SD6753	10	TR
Bezostaya	15158	10	60S
Recurrent Selection	SD56713-10	T	TR
Agent/4* Scout	SD7117	T	TR
Hume/Nebr. Semidwarfs Comp.	SD697	20	TR
3* Parker/Bison	KS6623	10	60S
Wrr/Minn. III-54-12	SD66117-2	10	TR,5S
Pnc/3*Cnn/3/Ky58/Nth/2/2*Cnn-Tm-Mi-Hope/4/Sut	NE69441	10	TMS,S
Pnc/3*Cnn/3/Ky58/Nth/2/2*Cnn-Tm-Mi-Hope/4/Sut	NE69442	20	TMS
Wrr*5/Agent	68F6635	20	5MS
Atl 66/Cmn//Lcr	NE701134	T	TR

Table 11. Seedling reactions of varieties in the 1972 Northern Regional Winter Wheat Performance Nursery to Puccinia graminis tritici. (by D. V. McVey, Cereal Rust Laboratory, University of Minnesota, St. Paul)

Variety	C. I. or Sel. No.	Source	Reaction produced by isolates: 65-39-2	71-4-1	71-21-384(1)	71-21-550(1)	71-21-584(2)	70-M-003(1)	71-36-424(1)	71-45-883(1)	71-41-146(3)	71-M-24(3)	70-20-958(3)	71-13-449(3)
			R15B-2		R11	R32			R17	R151			R56	R113
Kharkof	1442	check	S	S	S	S	S	I	S	S	S	S	S	S
Warrior	13190	check	S	S	S	S	S	S	S	R	I	S	S	S
Ftn/Cnn/2/Lcr	NB68493	Nebr.	R	R	S	S	S	S	R	R	R	S	R	R
Wrr/2/Atl 66/Cmn/3/Lcr	NB68510	Nebr.	R	R	S	S	S	S	R	R	R	S	R	R
Gage/Lcr	NB68427	Nebr.	R,S	R,S	R	R	R	R	R	R	R	R	S	R
Centurk	15075	Nebr.	R	R	R	S	R	S	R	R	R	S	R	R
Sundance (Cnn/Kk Mc22)	5520-8	Leth bridge	-	S	S	S	S	S	S	S	S	S	S	S
Recurrent Sel. Series I, Cycle II	SD6753	S. D.	R	R	S,R	I	I	I	R	R	R	S	S	R
Bezostaya	15158	IWWPN	S	S	S	S	S	S	R	R,S	S	S	S	S
Recurrent Selection	SD56713-10	S. D.	S	S	S	R	R	R	R	R	R	R	R,S	R
Agent/4*Scout	SD7117	S. D.	R	R	R	R	R	R	R	R	R	R	R	R
Hume/Nebr. Semidwarfs Comp.	SD697	S. D.	R	R	S,R	S	R,S	R	R	R	R	R	S	R
3*Parker/Bison	KS6623	SRPN (KS)	S	S	R	S	S	S	S	R	R	R	S	S
Wrr/Minn. III-54-12	SD66117-2	S. D.	S	S	S	S	S	R	R	R	R	R,S	R,S	S
Pcn/3*Cnn/3/Ky 58/Nth/2/2* Cnn-Tm-Mi-Hope/4/Sut	NE69441	Nebr.	R	R	S	S	S	S	R	R	R	S	R,S	R
ditto	NE69442	Nebr.	R	R	R	R	R	R	R	R	R	S	R	R
Wrr*5/Agent	68F6635	Nebr.	R	R	R	R	R	R	R	R	R	I	R	R
Atl 66/Cmn/Lcr	NE701134	Nebr.	R	R	S	S	S	S	R	R	R	S	R,S	R

Table 12. Infection types produced on varieties in the 1972 Northern Regional Performance Nursery inoculated with selected cultures of Puccinia recondita F.S.P. tritici. (Data provided by L. E. Browder, Manhattan, Kansas).

C. I. or Sel. No.	Infection-type Produced by Parasite Culture[1/]									
	PRE1 WQL	65359-01	UNO1-68B	2-83	66-763	3-27	66-20-1	UN17-68A	UN09-66A	UN02-64A
CI1442	7810[2/]	7810	8910	8910	9910	8810	8810	8810	8810	9910
CI13190	0210	8910	0310	9910	9910	8810	8810	8810	0310	9910
NB68493	0110	2350	0312	0312	0313	8810	0210	8810	0350	8810
NB68510	0210	0350	2350	5610	9910	8810	0210	0210	0350	9910
NB68427	0110	5610	1310	3450	9910	8810	0110	0210	0350	9910
CI15075	0110	5610	0110	0310	0310	4510	0110	0110	0310	8810
5520-8	7810	7910	8910	9910	9910	8810	8810	8810	6810	9910
SD6753	0210	7810	0310	9910	9910	8810	8810	7810	0110	9910
CI15158	0110	8910	0310	7810	9910	8810	8810	8810	0310	7810
SD56713-10	0210	0310	0310	0350	8910	8810	8810	0110	0211	8810
SD7117	0210	0310	0310	0310	0310	0310	0110	0310	0310	0410
SD697	0211	7810	7810	0210	9910	7810	8810	0110	9910	9910
KS6623	0000	1310	0210	0310	0210	2310	0210	0110	0310	8810
SD66117-2	0000	8910	0310	8910	9910	0210	7810	0110	0310	9910
NE69441	0210	0350	0310	0312	9910	8810	8810	0110	8810	9910
NE69442	8910	7810	8910	8810	9910	8810	8810	0110	8810	9910
68F6635	0000	0210	0210	0110	0210	0110	0110	0110	0110	0310
NE701134	0110	7810	5610	0212	9910	8810	8810	8810	0210	9910

1/ Culture numbers are listed according to identification of P. recondita cultures maintained by L. E. Browder.

2/ 1st digit = relative size of sporulating area from 0 = sporulation to 9 = largest sporulating area.
2nd digit = relative total size of typical lesions from 0 = no visible lesions to 9 =largest lesion.
3rd digit = infection type as follows: 1 = chlorosis associated with typical lesion; 3 = necrosis associated with typicallesion; and 5 = variable and intermixed size of sporulating area, size of lesions and nature of tissue damage in same plant.
4th digit = uniformity of infection types within a sample from plant to plant. Code represents fractional tenths of plants within sample with infection types other than those discorded in first three digits.

Summary of NRPN Yields

Variety yields reported from 11 nurseries at 10 sites are summarized in table 13. Varieties are listed according to their average regional performance. State averages and ranks also are reported.

As in the SRPN, Centurk was the most productive variety. It ranked no lower than fourth in any state except South Dakota where its rank at Presho was sixth. It was the only variety that made an average yield higher than 50 bushels per acre. NE69442 was second in regional yield rank. The Canadian variety Sundance and Kharkof were the least productive on the average, although Sundance ranked first at Lethbridge where it was developed.

Two-year average yields for 9 varieties grown in 1971 and 1972 are summarized in table 14. Centurk, the most productive variety, ranked first in every state and third at Lethbridge. Nebraska experimentals NB68427 and NB68493 ranked second and fourth, respectively.

The yield performance parameters $b_{y.x}$, r, and r^2 are shown for varieties grown in the NRPN in 1972 in table 15. Centurk with the highest average yield did not exhibit strong response to environmental changes nor was the predictability of its performance (r^2) very high. High regression coefficients were computed for KS6623, Bezostaya 1 and SD697. On a two-year basis the largest regression coefficients were computed for Centurk and Bezostaya 1 (table 15a). The 2-year performance of Centurk also was the most predictable ($r^2 = .95$). Sundance performance was the least predictable ($r^2 = .59$).

Summary of Agronomic Data

Agronomic data other than yield for varieties in the NRPN are summarized in table 16. SD118 was slightly the earliest heading. Bezostaya 1 was shortest in height but was least winterhardy along with KS6623 and NE701134. Bezostaya 1 also lodged the least and produced grain with the highest 1000-kernel weight. Several varieties showed combined field resistance to leaf and stem rust at two reporting stations. KS6623 produced grain with slightly the highest volume weight.

Table 13. Summary of mean yields (kg/ha) for 18 varieties grown in the Northern Regional Performance Nursery at 11 sites in 1972, with state averages and ranks.

Variety	C. I. or Sel. No.	Nebraska				New Mexico			
		North Platte	Alliance	Average	Rank	Clovis irrig	Clovis dryl	Average	Rank
Centurk	15075	3661	4688	4175	4	726	5926	3326	2
Pnc/3*Cnn/3/Ky58/Nth/2/2*Cnn-Tm-Mi-Hope/4/Sut	NE69442	3794	4655	4225	2	1506	4969	3238	3
Agent/4* Scout	SD7117	4439	3914	4177	3	645	5506	3076	4
Wrr*5/Agent	68F6635	3545	4262	3904	13	977	5721	3349	1
Gage/Lancer	NB68427	3809	4132	3971	8	833	4893	2863	7
Frontana/Cnn/2/Lancer	NB68493	4177	4303	4240	1	887	4270	2579	12
Pnc/3*Cnn/3/Ky58/Nth/2/2*Cnn-Tm-Mi-Hope/4/Sut	NE69441	3407	4181	3794	14	779	5023	2901	6
Recurrent Selection	SD56713-10	3899	3986	3943	11	869	4194	2532	14
Atl 66/Cmn//Lcr	NE701134	3134	3601	3368	18	--	--	--	-
Wrr/Minn. III-54-12	SD66117-2	3668	4208	3938	12	744	4431	2588	11
Warrior	13190	3762	4161	3962	9	968	4528	2748	8
Hume/Nebr. Semidwarfs Comp.	SD697	3955	4101	4028	7	735	4560	2648	10
Wrr/2/Atl 66/Cmn/3/Lcr	NB68510	3861	4053	3957	10	896	3786	2341	16
3* Parker/Bison	KS6623	4170	3968	4069	5	851	3904	2378	15
Recurrent Sel. Series I, Cycle II	SD6753	3412	3946	3679	16	555	4743	2649	9
Bezostaya	15158	3805	4278	4042	6	1003	3377	2190	17
Kharkof	1442	3298	3500	3399	17	842	4237	2540	13
Sundance (Cnn/Kharkof Me 22)	5520-8	3724	3654	3689	15	1299	4528	2914	5

Table 13. concluded.

C. I. or Sel. No.	South Dakota: Presho	Rank	Wyoming: Archer	Sheridan	Average	Rank	Montana: Moccasin	Rank	Alberta: Lethbridge	Rank	Minnesota: St. Paul	Waseca	Average	Rank	11 test Average
15075	3477	6	2757	3878	3318	1	3533	1	2987	3	2643	2805	2724	3	3371
NE69442	3584	4	2508	3504	3006	3	3184	2	2804	10	2291	3062	2677	5	3260
SD7117	3594	3	2651	3882	3267	2	3054	6	2819	9	2262	2737	2500	10	3228
68F6635	3390	9	2142	2851	2497	17	2919	13	2881	6	2307	2832	2570	6	3075
NB68427	3762	1	2229	2822	2526	14	2926	12	2863	7	2303	3121	2712	4	3063
NB68493	3661	2	2102	2614	2358	18	3067	5	2912	4	2434	3050	2742	2	3043
NE69441	3448	7	2283	3554	2919	4	2591	18	2662	15	1919	3109	2514	9	2996
SD56713-10	3202	10	2211	2963	2587	12	2881	15	2784	11	2912	2826	2869	1	2975
NE701134	3511	5	2165	3285	2725	6	3008	9	2765	12	2100	2969	2535	8	2949 1/
SD66117-2	2953	12	2129	3007	2568	13	3000	10	2683	14	2307	2832	2570	6	2906
13190	3154	11	2420	2629	2525	15	3145	4	2906	5	2339	1812	2076	14	2893
SD697	3420	8	2138	3217	2678	8	2948	11	2394	18	1775	2528	2152	13	2888
NB68510	2774	16	2319	2965	2642	11	3026	7	2686	13	2059	2903	2481	11	2848
KS6623	2853	13	2250	3420	2835	5	3159	3	2568	16	1937	1687	1812	17	2797
SD6753	2810	14	2025	2973	2499	16	2807	17	2478	17	2251	2558	2405	12	2778
15158	2291	17	2154	3204	2679	7	2836	16	3203	2	1816	2094	1955	15	2733
1442	2803	15	2277	3042	2660	9	3018	8	2845	8	1794	2018	1906	16	2698
5520-8	1788	18	2173	3127	2650	10	2910	14	3368	1	1498	1535	1517	18	2691

1/ Average based on 2 trials less than the number shown.

Table 14. Summary of 2-year mean yields for 9 varieties grown in the Northern Regional Performance Nursery in 8 trials in 1971 and 1972, with state averages and ranks (kg/ha).

Variety	C. I. or Sel. No.	New Mexico				Nebraska		Wyoming			
		Clovis dryl.	Clovis irrig.	Average	Rank	Clay Center	Rank	Archer	Sheridan	Average	Rank
Centurk	CI15075	659	5306	2982	1	3859	2	2245	3544	2894	1
Gage/Lancer	NB68427	699	4378	2539	2	3859	2	1880	2880	2380	4
Warrior	CI13190	720	4189	2454	3	3659	5	1972	2750	2361	5
Frontana/Cnn/2/Lancer	NB68493	908	3885	2397	7	4038	1	1719	2838	2278	7
Bezostaya	CI15158	818	3997	2407	6	3554	6	1846	3196	2521	2
Recurrent Sel. Series I, Cycle II	SD6753	486	4411	2449	4	3526	7	1658	2771	2214	9
Wrr/2/At166/Cmn/3/Lcr	NB68510	758	3811	2284	8	3797	4	1753	2698	2225	8
Kharkof	CI1442	677	4198	2437	5	3164	9	1859	2794	2326	6
Sundance	5520-8	757	3072	1915	9	3461	8	1732	3053	2393	3

Table 14. concluded

C. I. or Sel. No.	Montana: Moccasin	Rank	Alberta: Leth-bridge	Rank	Minnesota: Saint Paul	Rank	8-Test Average
CI15075	3110	1	2837	3	2976	1	3067
NB68427	2917	3	2630	6	2607	5	2731
CI13190	2981	2	2844	2	2685	3	2725
NB68493	2867	4	2711	5	2799	2	2720
CI15158	2483	9	2826	4	2521	6	2655
SD6753	2701	7	2390	9	2647	4	2573
NB68510	2824	6	2573	7	2268	7	2560
CI1442	2837	5	2499	8	2204	8	2529
5520-8	2610	8	2923	1	2191	9	2475

Table 15. Average yield, regression coefficient, correlation coefficient, and coefficient of determination from linear regression analyses of variety yield on nersery mean yield for entries in the Northern Regional Performance Nursery in 1972.

C. I. or Sel. No.	Average yield over 8 locations (kg/ha)	Regression coefficient (by.x)	Correlation coefficient (r)	Coefficient of determination (r^2)
CI15075	3369	.97	.93	.86
NE69442	3325	1.08	.97	.93
SD7117	3220	1.02	.91	.82
NB68493	3082	1.05	.91	.82
SD56713-10	3058	.78	.89	.79
NB68427	3026	.91	.93	.87
SD66117-2	2979	.98	.97	.95
68F6635	2967	.95	.96	.91
NE69441	2963	.97	.89	.79
CI15158	2924	1.23	.96	.93
CI13190	2897	1.01	.88	.78
KS6623	2895	1.26	.92	.85
NB68510	2884	.99	.97	.94
SD697	2882	1.21	.98	.96
NE701134	2878	.68	.89	.79
SD6753	**2806**	**.91**	**.98**	**.96**
5520-8	**2749**	**1.13**	**.85**	**.72**
CI1442	2724	.84	.92	.84

Table 15a. 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 and 1972.

C. I. or Sel. No.	Averate yield over 21 locations (kg/ha)	Regression coefficient ($b_{y.x}$)	Correlation coefficient (r)	Coefficient of determination (r^2)
CI15075	3026	1.15	.97	.95
NB68493	2785	.98	.95	.91
NB68427	2776	.95	.97	.93
CI13190	2769	.94	.93	.87
CI15158	2652	1.14	.93	.87
NB68510	2633	1.01	.97	.95
SD6753	2633	.98	.96	.92
CI1442	2522	.94	.94	.89
5520-8	2450	.83	.77	.59

Table 16. Summary of agronomic data for varieties grown in the Northern Regional Performance Nursery in 1972.

Variety	C. I. or Sel. No.	Days to 3/ Head	Days to 3/ Ripe	Plant height	Winter survival	Lodging	Growth rate	1000 Kernel weight
				cm	0-9	0-9	0-9	grams
Number of Trails		6	2	7	1	2	2	1
Centurk	CI15075	120	214	83	9	1.5	7	31.8
Pnc/3*Cnn/3/Ky58/Nth/2/2*Cnn-Tm-Mi-Hope/4/Sut	NE69442	121	214	92	9	6.0	6	43.6
Agent/4* Scout	SD7117	119	210	87	8	5.0	6	39.8
Wrr*5/Agent	68F6635	122	214	92	9	4.0	6	36.2
Gage/Lancer	NB68427	121	210	88	9	1.5	6	37.8
Frontana/Cnn/2/Lancer	NB68493	120	211	92	8	1.0	7	34.8
Pnc/3*Cnn/3/Ky58/Nth/2/2*Cnn-Tm-Mi-Hope/4/Sut	NE69441	120	210	91	8	2.5	6	34.8
Recurrent Selection	SD56713-10	121	211	92	9	4.0	6	37.0
Atl 66/Cmn//Lcr	NE701134	120 2/	213	94 2/	7	3.0 1/	-	36.0
Wrr/Minn. III-54-12	SD66117-2	121	210	89	9	6.5	6	34.4
Warrior	CI13190	121	211	92	9	6.0	6	39.2
Hume/Nebr. Semidwarfs Comp.	SD697	118	210	92	9	1.5	6	34.8
Wrr/2/Atl 66/Cmn/3/Lcr	NB68510	121	210	93	8	4.5	6	35.0
3* Parker/Bison	KS6623	119	214	88	7	1.0	7	36.4
Recurrent Sel. Series I, Cycle II	SD6753	120	210	90	9	2.0	6	32.4
Bezostaya	CI15158	121	214	81	7	0.0	8	45.8
Kharkof	CI1442	124	216	101	9	6.5	6	38.4
Sundance (Cnn/Kharkof Me 22)	5520-8	127	216	101	9	3.5	7	38.6

1/ Average based on 1 trial less than the number shown.
2/ Average based on 2 trials less than the number shown.
3/ Days from January 1.

Table 16. continued

C. I. or Sel. No.	Leaf Rust		Stem Rust		Septoria	Scab	Necrosis	Volume weight	Yield
	Sev. %	Resp.	Sev. %	Resp.	0-9	0-9	0-9	kg/hl	kg/ha
Number of Trials	2	2	2	2	1	1	1	11	11
CI15075	13	M	2	R	7	3	7	70.8	3371
NE69442	35	M	1	VR	4	0	3	70.3	3260
SD7117	1	VR	1	VR	5	1	9	70.2	3228
68F6635	1	VR	6	M	5	0	3	71.1	3075
NB68427	10	M	2	VR	6	1	3	70.7	3063
NB68493	1	VR	1	VR	3	1	3	70.8	3043
NE69441	1	VR	1	VR	4	0	3	71.1	2996
SD56713-10	8	M	1	VR	5	0	3	69.7 1/	2975
NE701134	1	VR	1	VR	4	1	4	69.1 2/	2949 2/
SD66117-2	1	VR	1	VR	8	0	3	66.3	2906
CI13190	95	S	44	MS	7	0	2	69.4	2893
SD697	50	M	1	VR	5	0	3	70.1	2888
NB68510	35	M	3	VR	5	0	5	70.7	2848
KS6623	30	M	50	S	6	1	5	71.4	2797
SD6753	43	M	1	VR	7	0	3	69.4	2778
CI15158	1	VR	80	S	7	1	5	70.3	2733
CI1442	65	S	48	S	5	0	3	62.5	2698
5520-8	18	S	63	S	7	0	2	67.6	2691

1/ Average based on 1 trial less than the number shown.
2/ Average based on 2 trials 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 Materials Section was comprised of 232 entries which are identified in the list that follows. Survival data from 3 reporting stations are summarized in table 17.

Entries in the Northern Materials Section totaled 60, all of which were submitted by South Dakota. They are identified in the listing that follows. Survival data from 3 stations are reported in table 18.

SOIL-BORNE MOSAIC NURSERY

Forty-four varieties were tested on infested ground at Urbana, Illinois and Newton and Powhattan, Kansas. The varieties are identified in the listing that follows. Infection data from the 3 test sites appear in table 19.

1972
UNIFORM WINTERHARDINESS NURSERY
Southern Materials Section

Entry No.	Pedigree	C.I. or Sel.No.	Source
1	Scout 66	13996	Check
2	Kharkof	1442	SRPN
3	Centurk	15075	"
4	391-56-D8/Tascosa	TX62A2782-4-2	"
5	391-56-D8/Kaw	TX62A2522-1-4	"
6	1826-1/Parker	TX65A1268	"
7	Sn64/Tpr/2/C0652961	C0695552	"
8	Ptc/Y54/Tzp/Nar/Tpr/2961	C0696317	"
9	Pronto	---	"
10	Warrior	13190	Check
11	Bezostaya	15158	SRPN
12	Scout/C.I.12995	NE68435	"
13	Sut/4/Ky58/Nth/2/Cnn/Tm/Mi/Hope/3/Pn/Cnn	NE68437	"
14	5*Scout/Agent	KS7016	"
15	Short Wheat/Scout Composite	TX69A571	"
16	do.	TX69A367	"
17	do.	TX69A565	"
18	Scout Selection	C064043	"
19	5*Scout/Agent	OK696731	"
20	Minter	12138	Check
21	5*Scout/Agent	OK696740	SRPN
22	D146-4	OK60118	"
23	Triumph/Bison	KS65274	"
24	Agent/4*Scout	KS70H134	"
25	do.	KS70H179	"
26	Agent/Scout Composite	So. Dak. Comp.	"
27	Frontana/Cnn/2/Lancer	NE68493	NRPN
28	Wrr/2/Atl 66/Cmn/3/Lcr	NE68510	"
29	Gage/Lancer	NE68427	"
30	Scout 66	13996	Check
31	Wrr//Atl 66/Cmn/3/Lcr	NE701152	Nebr.
32	Sundance	5520-8	NRPN
33	Recurrent Sel. Series I, Cycle II	SD6753	"
34	Recurrent Selection	SD6713-10	"
35	Hume/Nebr. Semidwarfs Comp.	SD69-7	"
36	3*Parker/Bison	KS6623	"
37	Sut/4/Ky58/Nth/2/Cnn/Tm/Mi/Hope/3/Pn/Cnn	NE68440	SRPN
38	MM/Ech/Rm//2*(Hope/Tk/Cnn)/3/Lcr	NE701180	Nebr.
39	Cnn/Pnc/Tk/Cnn//Sut	NE701212	"
40	Warrior	13190	Check
41	Cnn/Pnc/Tk/Cnn//Sut	NE701213	Nebr.
42	Mida/Ky117A/2*(Hope/2*Tk)/Nbr/Cnn/Ky/Mta/Cnn/Pnc/Tk/Cnn	NE701218	"
43	Wrr//At166/Cmn/3/Lcr/4/Gage	NE701239	"
44	Guide/Wrr Sel.	NE701274	"
45	5*Sut/Agent	OK696760	Okla.

1972 UWHN (So. Materials Section) continued

Entry No.	Pedigree	C.I. or Sel.No.	Source
46	5*Sut/Agent	OK696759	Okla.
47	do.	OK696770	"
48	SS/C.I.12500/2/Pn/3/Kaw	OK696445	"
49	do.	OK696453	"
50	Minter	12138	Check
51	SS/C.I.12500/2/Pn/3/Kaw	OK696936	Okla.
52	Tmp 64/T_1	OK66CC111	"
53	do.	OK66C3190	"
54	do.	OK66C2953	"
55	Tcs/T_1	OK66C2012	"
56	do.	OK66C2108	"
57	5*Kaw/2/DS28A/Pnc	OK695157	"
58	do.	OK695153	"
59	Agent/4*Scout	KS70H105	Kans.
60	Scout 66	13996	Check
61	Agent/4*Scout	KS70H173	Kans.
62	do.	KS70H175	"
63	Ottawa/5*Scout	KS70H205	"
64	do.	KS70H207	"
65	do.	KS70H208	"
66	do.	KS70H210	"
67	Parker	13285	"
68	Scout	13546	"
69	Triumph 64	13679	"
70	Warrior	13190	Check
71	Tmp/Bsn	KS65274	Kans.
72	Cch/Pkr	KS69123	"
73	do.	KS69127	"
74	do.	KS69174	"
75	Pkr/Bsn	KS70231	"
76	do.	KS70233	"
77	do.	KS70236	"
78	do.	KS70243	"
79	do.	KS70246	"
80	Minter	12138	Check
81	Pkr/Bsn	KS570247	Kans.
82	do.	KS70266	"
83	do.	KS70272	"
84	do.	KS70294	"
85	do.	KS70311	"
86	do.	KS70344	"
87	do.	KS70346	"
88	Tsc/Pkr	KS69207	"
89	Tsc/Ot	KS70153	"
90	Scout 66	13996	Check
91	Ot/Bsn	KS70174	Kans.
92	Ot/5/2*Bsn/4/2*Wi/Tf/2/Bsn/3/Wi	KS70221	"
93	Cch/2/Tst/2*Pn/3/Tmp	KS69242	"
94	Tmp/4/3*Bsn/3/Wi/2/Pn/Tf	KS70585	"
95	Tmp/5/Oro/2/Mi/Hope/3/Ky 1373/4/Pn/Cmn	KS70533	"

1972 UWHN (So. Materials Section) continued

Entry No.	Pedigree	C.I. or Sel.No.	Source
96	Cch/2*Tmp/2/Bsn/Pkr	KS71221	Kans.
97	do.	KS71222	"
98	do.	KS71224	"
99	do.	KS71226	"
100	Warrior	13190	Check
101	Cch/2*Tmp/2/Bsn/Pkr	KS71228	Kans.
102	do.	KS71231	"
103	Cch/2*Tmp/2/Scout	KS71224	"
104	Cch/2*Tmp/2/Scout	KS71252	"
105	do.	KS71255	"
106	do.	KS71258	"
107	do.	KS71259	"
108	do.	KS71261	"
109	do.	KS71284	"
110	Minter	12138	Check
111	Cch/2*Tmp/2/Scout	KS71285	Kans.
112	do.	KS71287	"
113	do.	KS71288	"
114	do.	KS71289	"
115	do.	KS71315	"
116	do.	KS71322	"
117	do.	KS71332	"
118	Scout 66	13996	"
119	do.	KS71335	"
120	Scout 66	13996	Check
121	Cch/2*Tmp/2/Scout	KS71346	Kans.
122	do.	KS71347	"
123	do.	KS71348	"
124	do.	KS71353	"
125	Cch/3*Tmp	KS71275	"
126	do.	KS71276	"
127	do.	KS71279	"
128	Kaw/2/Ot/Cmn	KS71359	"
129	do.	KS71364	"
130	Warrior	13190	Check
131	Kaw/2/Ot/Cmn	KS71366	Kans.
132	Gage Sel.	NE65409	Nebr.
133	Ky58/Nth/2/Hope/2*Tk/3/Pkr	NE69291	"
134	Atl 66/Cmn//Wrr	NE66553	"
135	Sut/3/Qv/Tm/2/Mql/Oro	NE68432	"
136	Pnc/Cnn//Sut	NE68455	"
137	MM/Ech/Rm//2*(Hope/Tk/Cnn)/3/Pnc/2*Cnn	NE68463	"
138	MM/Ech/Rm//2*(Hope/Tk/Cnn)/3/Lcr	NE68465	"
139	Wrr//(Wrr/Minn III-54-12)F_1/3/Gage	NE69447	"
140	Minter	12138	Check
141	CI 13548//Atl 66/Cmn/3/Lcr	NE68570	Nebr.
142	Cnn/Pnc//Tk/Cnn/3/Sut	NE68521	"
143	SS/CI 12500/3/Pn/Cnn/4/Cnn/Pnc/2/Tk/Cnn	NE68719	"
144	Pkr/3/I1#1/2*Cns/Tt/2/Cnn/Tm/Mi/Hope	NE69412	"

1972 UWHN (So. Materials Section) continued

Entry No.	Pedigree	C.I. or Sel.No.	Source
145	Gage/3/Qv/Tm//Mql/Oro	NE69416	Nebr.
146	Pn/3*Cnn//Ky 58/Nth/2*(Cnn/Tm/Mi/Hope)F_1/3/Sut	NE69441	"
147	do.	NE69442	"
148	Wrr//Ky 58/Nth/2*(Cnn/Tm/Mi/Hope)F_1/3/Pkr	NE69457	"
149	Ky/Mta/2*Cnn//SS/CI12500/2*Cnn	NE69484	"
150	Scout 66	13996	Check
151	RE/Nbr//Pnc/3*Cnn	NE69487	Nebr.
152	(Atl 66/Wi//Pkr)F_1/3/Lcr Sel.	NE69554	"
153	do.	NE69555	"
154	SS/12500/RCh/Pn/Cnn//(Wrr/Atl 66/Cmn)F_1/3/Lcr Sel.	NE69559	"
155	SS/12500/RCh/Pn/Cnn//Guide	NE69560	"
156	Aiv/Nbr//Cnn/Ky/Mta	NE69565	"
157	do.	NE69566	"
158	SS/12500//Pn/Cnn/3/SS/12500/RCh/Pn/Cnn	NE69581	"
159	Sel.14/53-101//Tpr	NE69642	"
160	Warrior	13190	Check
161	Sel.14/53-101//Tpr	NE69644	Nebr.
162	Atl 66/Wi//Sut	NE69774	"
163	Lancer Reselection	NE67749	"
164	5*Wrr/Agent	NE701285	"
165	do.	NE701286	"
166	Aurora	---	"
167	Kavkaz	---	"
168	Lutescens 7	---	"
169	Russian Int//Nbr/Cnn/Ky/Mta	NE70877	"
170	Minter	12138	Check
171	Tpr//Cmn/Ot	NE70959	Nebr.
172	Tpr//Ot/Cnn	NE70983	"
173	Ot/Cnn/Kaw/Sk/2*Cnn	NE701040	"
174	Atl 60/Cmn//Lcr	NE701124	"
175	do.	NE701129	"
176	do.	NE701132	"
177	do.	NE701135	"
178	do.	NE701136	"
179	do.	NE701137	"
180	Scout 66	13996	Check
181	Cnn/Pnc//Tk/Cnn/3/Sut	NE701209	Nebr.
182	Mida/Ky 117A/2*(Hope/2*Tk)//Nbr/Cnn/Ky/Mta/3/ Cnn/Pnc/Tk/Cnn	NE701220	"
183	Ot/Cnn/Kaw/Sk/2*Cnn	NE701043	"
184	Trader//Cmn/Ot	NE70443	"
185	Trapper//SS/12500/Pn/Cnn	NE70490	"
186	Tpr//Wrr/Minn III-54-12	NE70510	"
187	Tpr//Ot/Cnn	NE70607	"
188	Cnn/Pnc/Tk/Cnn//Tpr	NE70638	"
189	Guide x Scoutland	NE70753	"
190	Warrior	13190	Check
191	Felix/Lcr	NE70885	Nebr.
192	Beloterkovskaia 198/Lcr	NE70908	"

1972 UWHN (So. Materials Section) concluded

Entry No.	Pedigree	C.I. or Sel.No.	Source
193	(Minn II-53-66/Wrr)F_1/Cmn/CI 13548	NE70405	Nebr.
194	Wrr/Sk/2*Cnn/Nrn 16/CI 12500/Kaw	NE70448	"
195	Beloterkovskaia 198/Lcr	NE70912	"
196	Tpr/Bezostaya 4	NE70933	"
197	Tpr//SS/12500/Pn/Cnn	NE70480	"
198	Tpr//SS/12500/Pn/Cnn	NE70486	"
199	do.	NE70492	"
200	Minter	12138	Check
201	Atl 66/Cmn//Cnn/Pnc/Tk/Cnn	NE70577	Nebr.
202	do.	NE70578	"
203	Wrr/Sut	NE70699	"
204	do.	NE70704	"
205	do.	NE70711	"
206	do.	NE70712	"
207	do.	NE70721	"
208	do.	NE70723	"
209	do.	NE70727	"
210	Scout 66	13996	Check
211	Guide/Scoutland	NE70759	Nebr.
212	Tpr//Cmn/Ot	NE70946	"
213	do.	NE70947	"
214	Tpr//Ot/Cnn	NE70982	"
215	Atl 66/Cmn//Lcr	NE701134	"
216	Guide/Scoutland	NE70760	"
217	do.	NE70762	"
218	do.	NE70766	"
219	do.	NE70768	"
220	Warrior	13190	Check
221	Guide/Sikorospyelka	NE70773	Nebr.
222	Fertodi/Lcr Sel.	NE70804	"
223	do.	NE70810	"
224	do.	NE70812	"
225	Russian Int.//Sk/2*Cnn	NE70855	"
226	Ot/Cnn/Kaw/Sk/2*Cnn	NE701035	"
227	Russian Int//Nbr/Cnn/Ky/Mta	NE70862	"
228	Atl 66/Cmn//Lcr	NE701139	"
229	Wrr//Atl 66/Cmn/3/Lcr	NE701146	"
230	Wrr/Minn III-54-12	SD66117-2	NRPN
231	Atl 66/Cmn//Lcr	NE701132	SRPN
232	Minter	12132	Check

Table 17.---- WINTER SURVIVAL
Uniform Winterhardiness Nursery
Southern Materials Section
1972

Entry No.	Casselton No. Dakota %	Williston No. Dakota %	Brookings[1/] So. Dakota %	3-Station Average %
1	0	15	44	20
2	1	60	61	41
3	0	15	39	18
4	0	0	2	1
5	0	0	30	10
6	0	10	40	17
7	0	3	3	2
8	0	0	0	0
9	0	0	13	4
10	1	75	46	41
11	0	1	9	3
12	0	18	20	13
13	0	8	38	15
14	0	8	40	16
15	0	3	23	9
16	0	0	8	3
17	0	0	17	6
18	0	5	25	3
19	0	1	20	7
20	26	93	90	70
21	0	5	53	19
22	0	0	4	1
23	0	0	40	13
24	0	1	56	19
25	0	3	59	21
26	0	1	43	15
27	0	11	52	21
28	1	1	56	19
29	1	1	58	20
30	0	11	55	22
31	1	3	48	17
32	50	88	91	76
33	25	40	81	49
34	15	50	76	47
35	8	60	78	49
36	0	25	59	28
37	0	10	63	24
38	1	35	61	32
39	3	20	75	33
40	0	30	63	31
41	4	25	64	31
42	11	40	58	36
43	0	0	33	11
44	0	45	65	37
45	0	31	56	29
46	0	20	45	22
47	0	0	38	13

1972
UWHN Southern Materials Section Winter Survival (continued)

Entry No.	Casselton No. Dakota %	Williston No. Dakota %	Brookings[1/] So. Dakota %	3-Station Average %
48	0	0	12	4
49	0	0	35	12
50	55	78	93	75
51	0	0	6	2
52	0	0	18	6
53	0	0	20	7
54	0	0	23	8
55	0	0	11	4
56	0	0	8	3
57	0	0	21	7
58	0	0	20	7
59	0	0	29	10
60	3	0	49	17
61	0	0	45	15
62	0	0	50	17
63	0	0	46	15
64	0	0	50	17
65	0	0	45	15
66	0	0	39	13
67	0	0	30	10
68	0	3	38	14
69	0	0	41	14
70	0	15	34	16
71	0	0	43	14
72	0	0	34	11
73	0	0	23	8
74	0	0	18	6
75	0	0	44	15
76	0	0	43	14
77	0	0	46	15
78	0	0	26	9
79	0	0	25	8
80	28	95	96	73
81	0	3	36	13
82	0	5	46	17
83	0	0	10	3
84	0	3	18	7
85	0	3	50	18
86	0	0	55	18
87	0	0	18	6
88	0	0	2	1
89	0	0	29	10
90	0	15	55	23
91	0	1	50	17
92	0	1	48	16
93	0	1	15	5
94	0	6	40	15
95	0	3	26	10

1972
UWHN Southern Materials Section Winter Survival (continued)

Entry No.	Casselton No. Dakota %	Williston No. Dakota %	Brookings[1/] So. Dakota %	3-Station Average %
96	0	0	8	3
97	0	0	15	5
98	0	1	25	9
99	0	0	14	5
100	0	50	68	39
101	0	1	9	3
102	0	1	14	5
103	0	1	30	10
104	0	1	33	11
105	0	1	20	7
106	0	1	34	12
107	0	1	43	15
108	0	0	23	8
109	0	0	16	5
110	45	55	85	62
111	0	0	26	9
112	0	3	40	14
113	0	1	38	13
114	0	1	43	11
115	0	3	38	14
116	0	0	43	14
117	0	0	45	15
118	0	3	53	19
119	0	0	50	17
120	0	10	54	21
121	0	1	43	15
122	0	0	31	10
123	0	1	25	9
124	0	1	36	12
125	0	0	9	3
126	0	0	10	3
127	0	0	3	1
128	0	3	13	5
129	0	3	11	5
130	0	55	74	43
131	0	3	27	10
132	0	3	21	8
133	0	8	31	13
134	0	5	35	13
135	0	3	38	14
136	0	15	41	19
137	0	15	51	22
138	0	18	53	24
139	0	15	35	17
140	50	95	91	79
141	0	3	18	7
142	0	1	36	12
143	0	6	43	16

1972
UWHN Southern Materials Section Winter Survival (continued)

Entry No.	Casselton No. Dakota %	Williston No. Dakota %	Brookings[1/] So. Dakota %	3-Station Average %
144	0	3	17	7
145	0	3	18	7
146	0	11	40	17
147	0	10	46	19
148	0	20	53	24
149	0	15	45	20
150	0	16	47	21
151	0	15	24	13
152	0	0	5	2
153	0	0	8	3
154	0	0	30	10
155	0	3	30	11
156	1	8	34	14
157	0	15	38	18
158	0	55	58	38
159	0	23	50	24
160	5	33	73	37
161	0	28	36	21
162	0	3	8	4
163	0	20	30	17
164	3	25	70	33
165	0	45	73	39
166	0	3	4	2
167	0	3	1	1
168	0	3	2	2
169	0	3	7	3
170	43	95	90	76
171	0	10	53	21
172	0	11	46	19
173	0	5	27	11
174	0	11	36	16
175	0	3	30	11
176	0	3	20	8
177	0	3	12	5
178	0	3	29	11
179	0	3	7	3
180	0	26	34	20
181	0	16	49	22
182	0	35	55	30
183	0	5	27	11
184	0	15	53	23
185	0	25	55	27
186	0	35	59	31
187	0	10	28	13
188	0	15	47	21
189	0	10	24	11
190	0	40	42	27
191	0	25	45	23

1972
UWHN Southern Materials Section Winter Survival (concluded)

Entry No.	Casselton No. Dakota %	Williston No. Dakota %	Brookings So. Dakota[1/] %	3-Station Average %
192	0	15	45	20
193	0	0	44	15
194	0	20	48	23
195	0	8	40	16
196	0	10	48	19
197	0	25	43	23
198	3	50	43	32
199	0	45	28	24
200	10	95	88	64
201	0	10	31	14
202	0	10	24	11
203	0	25	38	21
204	0	15	39	18
205	0	35	37	24
206	0	20	43	21
207	0	15	43	19
208	0	15	43	19
209	0	30	40	23
210	0	10	42	17
211	0	38	36	37
212	0	33	43	25
213	0	31	42	24
214	0	25	38	21
215	0	15	19	11
216	0	20	27	16
217	0	28	31	20
218	0	30	30	20
219	0	30	25	18
220	0	40	53	31
221	0	1	4	2
222	0	1	13	5
223	0	0	35	12
224	0	1	28	10
225	0	1	4	3
226	0	25	39	21
227	0	10	20	10
228	0	5	7	4
229	0	43	37	27
230	0	58	43	34
231	0	13	8	7
232	60	95	93	83

[1/] Average based on 2 sets of the nursery.

1972
UNIFORM WINTERHARDINESS NURSERY
Northern Materials Section

Entry No.	Pedigree	C.I. or Sel.No.	Source
1	Minter	12138	Check
2	Hume/Nebr. Semidwarfs	SD6920-1	S. Dak.
3	do.	-2	"
4	do.	-8	"
5	do.	SD6931-2	"
6	do.	-4	"
7	do.	-5	"
8	do.	-9	"
9	do.	SD6934-4	"
10	Warrior	13190	Check
11	Hume/Nebr. Semidwarfs	SD6934-14	S. Dak.
12	do.	SD6935-1	"
13	do.	-3	"
14	do.	-5	"
15	do.	-7	"
16	do.	-8	"
17	do.	-9	"
18	do.	-10	"
19	do.	SD6938-2	"
20	Minter	12138	Check
21	Hume/Nebr. Semidwarfs	SD6941-1	S. Dak.
22	do.	-2	"
23	do.	-5	"
24	do.	-6	"
25	do.	-11	"
26	do.	SD6949-2	"
27	do.	-3	"
28	do.	-4	"
29	do.	-6	"
30	Warrior	13190	Check
31	Hume/Nebr. Semidwarfs	SD6949-7	S. Dak.
32	do.	-14	"
33	do.	-15	"
34	do.	-19	"
35	do.	-20	"
36	do.	-21	"
37	do.	SD6954-2	"
38	do.	SD6958-2	"
39	do.	-7	"
40	Minter	12138	Check
41	Hume/Nebr. Semidwarfs	SD6958-9	S. Dak.
42	do.	-11	"
43	do.	SD6966-7	"
44	do.	-14	"
45	do.	-15	"

1972 UWHN (Northern Materials Section) concluded

Entry No.	Pedigree	C.I. or Sel.No.	Source
46	Hume/Nebr. Semidwarfs	SD6966-16	S. Dak.
47	do.	SD6970-7	"
48	do.	-12	"
49	do.	SD6978-4	"
50	Warrior	13190	Check
51	Hume/Nebr. Semidwarfs	SD6978-5	S. Dak.
52	do.	-7	"
53	do.	-8	"
54	do.	-9	"
55	do.	-10	"
56	do.	SD6988-5	"
57	Recurrent Selection	SD56713-10	"
58	Hume/Nebr. Semidwarfs Comp.	SD697	"
59	Warrior	13190	Check
60	Minter	12138	Check

Table 18.--WINTER SURVIVAL (%)
Uniform Winterhardiness Nursery
Northern Materials Section
1972

Entry No.	Casselton No. Dakota	Williston No. Dakota	Brookings[1/] So. Dakota	3-Station Average
1	5	30	76	37
2	5	33	75	38
3	5	23	86	38
4	5	40	83	43
5	5	55	83	48
6	1	35	81	39
7	1	40	84	42
8	1	23	60	28
9	36	85	91	71
10	0	8	67	25
11	0	18	70	29
12	0	11	90	34
13	0	20	90	37
14	0	20	78	33
15	0	15	80	32
16	1	13	88	34
17	1	3	73	26
18	0	0	68	23
19	16	65	88	56
20	41	40	91	57
21	10	50	89	50
22	3	50	93	49
23	0	50	66	39
24	10	90	94	65
25	10	93	93	65
26	3	20	90	38
27	5	20	88	38
28	5	20	70	32
29	5	20	63	29
30	1	20	70	30
31	10	15	70	32
32	1	25	65	30
33	3	35	68	35
34	0	35	74	36
35	0	30	80	37
36	0	30	70	33
37	38	55	94	62
38	10	45	76	44
39	1	45	75	40
40	35	30	70	45
41	10	35	65	37
42	0	23	55	26
43	25	55	93	58
44	41	60	95	65
45	35	70	93	66
46	20	45	80	48
47	40	80	96	72

1972
UWHN Northern Materials Section Winter Survival (concluded)

Entry No.	Casselton No. Dakota	Williston No. Dakota	Brookings[1/] So. Dakota	3-Station Average
48	30	85	88	68
49	1	45	78	41
50	0	30	63	31
51	0	5	65	23
52	0	20	73	31
53	0	25	75	33
54	3	20	73	32
55	0	35	73	36
56	15	65	64	48
57	5	40	70	38
58	5	55	65	42
59	1	25	68	31
60	15	40	73	43

[1/] Average based on 2 sets of the nursery.

1972
SOIL-BORNE MOSAIC NURSERY

Entry No.	Pedigree	C.I. or Sel.No.	Source
1	Pawnee	11669	Check
2	Cch/Pkr	KS69123	Kans.
3	do.	KS69127	"
4	do.	KS69174	"
5	Tsc/Ot	KS70153	"
6	Ot/Bsn	KS70174	"
7	Cch/2/Tst/2*Pn/3/Tmp	KS69242	"
8	Cch/3*Tmp	KS71275	"
9	do.	KS71276	"
10	Concho	12517	Check
11	Cch/3*Tmp	KS71279	Kans.
12	Cch/2*Tmp/2/Bsn/Pkr	KS71222	"
13	do.	KS71224	"
14	do.	KS71228	"
15	do.	KS71232	"
16	Cch/2*Tmp/2/Sut	KS71252	"
17	do.	KS71255	"
18	do.	KS71258	"
19	do.	KS71259	"
20	Bison	12518	Check
21	Cch/2*Tmp/2/Sut	KS71307	Kans.
22	do.	KS71323	"
23	do.	KS71353	"
24	Scout/4/Qv/2/Tm/3/Mql/Oro	NE68432	Nebr.
25	do.	NE68435	"
26	Sut/4/Ky58/Nth/2/Cnn/Tm/Mi/Hope/3/Pn/Cnn	NE68437	"
27	do.	NE68440	"
28	Gage/Lancer	NE68427	"
29	Gage Sel.	NE65409	"
30	Pawnee	11669	Check
31	Atl 66/Cmn//Lcr	NE701124	Nebr.
32	do.	NE701129	"
33	do.	NE701132	"
34	do.	NE701135	"
35	do.	NE701136	"
36	do.	NE701137	"
37	do.	NE701134	"
38	do.	NE701139	"
39	Fertodi 293/Lancer Sel.	NE70804	"
40	Concho	12517	Check
41	Fertodi 293/Lancer Sel.	NE70810	Nebr.
42	do.	NE70812	"
43	Ottawa/Cnn/4/Kaw/3/Sk/2/*2 Cnn	NE701035	"
44	Bison	12518	Check

Table 19.--- 1972
Winter Wheat Regional
Soil-borne Mosaic Nursery

Entry No.	Kansas[1] Newton Reaction	Kansas[1] Powhattan Reaction	Urbana, Illinois Incidence[2] % Mosaic	Urbana, Illinois Severity[3] 0 - 5
1	S	MS	40	3
2	MR	MR	15	2.5
3	R$^-$	R	7.5	2
4	MR	R	15	2
5	R	R	25	1.5
6	R	R	0	0
7	R	R	5	1
8	MR	MR	10	0.5
9	MR	MR$^-$	5	2
10	R	R^g	2.5	1
11	MR	MR	10	2.5
12	MR$^+$	R	7.5	2
13	R$^-$	R$^-$	35	2
14	MR	R$^-$	15	2
15	R	R	5	1
16	R$^-$	MR	5	2
17	R	R	25	1.5
18	R	R^g	0	0
19	R	R^g	0	0
20	S	MS	2.5	1
21	R	R	30	3
22	MR	MR	60	2
23	R	R$^-$	50	2
24	S	MS$^-$	80	2.5
25	MR	R$^-$	60	2
26	R	R	20	3
27	S	MS$^-$	50	3
28	S	MR	50	2.5
29	S	MR	25	2
30	S	MS	60	2.5

1972
Winter Wheat Regional Soil-borne Mosaic Nursery (concluded)

Entry No.	Kansas[1/] Newton Reaction	Kansas[1/] Powhattan Reaction	Urbana, Illinois Incidence[2/] % Mosaic	Urbana, Illinois Severity[3/] 0 - 5
31	R	R	80	2.5
32	MR	MR$^-$	40	2
33	MR$^-$	MR$^-$	50	2.5
34	R	R	45	2
35	MR	MR$^-$	80	2.5
36	R$^-$	MR	50	1.5
37	R$^-$	MR	30	2
38	MR	MR$^-$	80	2.5
39	S	MR$^-$	70	2
40	R	R	0	0
41	S	R$^-$	22.5	2
42	S	MS$^-$	40	2.5
43	R	R$^-$	45	2.5
44	S	MS	5	2

[1/] R = less than 15% of plants showing symptoms. (g) indicates good green color with no stunting. Plus and minus classes indicate deviates from the major class.

MR = 16-100% of plants showing symptoms, very little or no stunting, some yellowing of leaves to considerable yellowing.

S = all plants with symptoms, some to considerable stunting, and considerable yellowing. MS and VS are included within this class.

[2/] % plants showing the symptoms in a row of 5 feet.

[3/] 0 = no visible symptoms
1 = light green mottling and no stunting
2 = pronounced light green mottling with moderate stunting
3 = yellow mottling with pronounced stunting
4 = resetting