

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

COMPARISON OF
WINTER WHEAT VARIETIES GROWN IN COOPERATIVE
NURSERY EXPERIMENTS IN THE
HARD RED WINTER WHEAT REGION
IN 1969

V. A. Johnson, Agronomist

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

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

Lincoln, Nebraska
CR-17-70
April 1970

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By

V. A. Johnson^{1/}

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^{1/} The writer expresses appreciation to Mrs. Katie Meierhenry, Regina Hogendorn, and Charles Lay for their assistance in preparing this report.

PERSONNEL CHANGES

John Kruger is the new agronomist at the Southern Great Plains Field Station, Woodward, Oklahoma.

Merle Witt assumed duties as agronomist at the Garden City Agricultural Experiment Station, Garden City, Kansas.

Webster Sill, Department of Plant Pathology, Kansas State University, resigned to accept a position on the faculty of the University of South Dakota.

D. T. Sechler has assumed leadership of wheat breeding research at the University of Missouri.

B. J. Kolp returned to the University of Wyoming from a two-year foreign assignment in Somalia.

Greg Hinze completed graduate study at the University of Illinois and has returned to his former position as agronomist at the U. S. Central Great Plains Station at Akron, Colorado. Ken Takeda, interim agronomist at Akron, has entered graduate school at Montana State University.

Lyle Stempke is the new agronomist at the Central Montana Branch Station, Moccasin, Montana.

W. H. Miller resigned as agronomist at the North Montana Branch Station, Havre, Montana. A replacement has not been named.

R. E. Heiner, ARS geneticist, University of Minnesota, was appointed Regional Spring Wheat Improvement Leader, replacing K. L. Lebsock who moved to Beltsville, Maryland to become Eastern Wheat Improvement Leader.

R. W. Romig resigned as Leader of the Cooperative Rust Laboratory, St. Paul, Minnesota to accept a wheat breeding position with Northrup-King. J. B. Rowell is the new Leader of the Rust Laboratory.

COOPERATING AGENCIES, STATIONS, AND PERSONNEL
(The asterisk denotes U.S.D.A. employees)

CEREAL CROPS RESEARCH BRANCH, A.R.S., U.S.D.A.:

Wheat Investigations	L. P. Reitz*
Hard Red Winter Wheat Region	V. A. Johnson*
Rust Investigations	R. A. Kilpatrick*
Quality Investigations	K. F. Finney*

TEXAS AGRICULTURAL EXPERIMENT STATION:

College Station	Texas A & M University	E. C. Gilmore
Soil and Crop Sciences		O. G. Merkle*
Denton	Substation No. 6	J. H. Gardenhire
Chillicothe	Substation No. 12	K. A. Lahr
Bushland	Southwestern Gr. Plains	
	Field Station	K. B. Porter
		N. E. Daniels

NEW MEXICO AGRICULTURAL EXPERIMENT STATION:

Clovis	Plains Substation	R. E. Finkner
		C. H. Hsi

OKLAHOMA AGRICULTURAL EXPERIMENT STATION:

Stillwater	Oklahoma State University	E. L. Smith
Agronomy		E. E. Sebesta*
		B. B. Tucker
		R. M. Oswalt
Botany and Plant Pathology		H. C. Young
Entomology		H. L. Chada*
		E. A. Wood, Jr.*
Biochemistry		D. C. Abbott
Woodward	Southern Great Plains	
	Field Station	John Kruger
Goodwell	Panhandle Agr. Exp.	
	Station	R. A. Peck'

KANSAS AGRICULTURAL EXPERIMENT STATION:

Manhattan	Kansas State University	E. G. Heyne
Agronomy		T. L. Walter
		E. D. Hansing
Plant Pathology		L. E. Browder*
		J. R. Burleigh*
		H. W. Somsen*
Entomology		W. J. Hoover
Flour and Feed Milling Industries		J. A. Johnson
		A. B. Ward
Hays	Ft. Hays Branch Sta.	R. W. Livers
Garden City	Garden City Agr. Exp. Sta.	Merle Witt
Colby	Colby Branch Station	J. R. Lawless

COLORADO AGRICULTURAL EXPERIMENT STATION:

Et. Collins	Colorado State University
Agronomy	
Akron	U.S. Central Gr. Plains Sta.
Springfield	Southeastern Colo. Branch Sta.
Yellow Jacket	San Juan Basin Branch Sta. (Hesperus)

J. R. Welsh
Greg Hinze
H. O. Mann
Dale Moore

IOWA AGRICULTURAL EXPERIMENT STATION:

Ames	Iowa State University
Agronomy	

R. E. Atkins

NEBRASKA AGRICULTURAL EXPERIMENT STATION:

Lincoln	University of Nebraska
Agronomy	

V. A. Johnson*
J. W. Schmidt
M. R. Morris
P. J. Mattern
P. T. Nordquist
J. Webster

North Platte	North Platte Exp. Station
Alliance	Box Butte Exp. Station

WYOMING AGRICULTURAL EXPERIMENT STATION:

Laramie	University of Wyoming
Div. of Plant Science (Crops)	
	(Plant Pathology & Horticulture)
Cheyenne	Archer Substation
Gillette	Gillette Substation
Sheridan	Sheridan Substation

B. J. Kolp
G. H. Bridgmon
Alan Herold
L. R. Landers
L. R. Richardson

SOUTH DAKOTA AGRICULTURAL EXPERIMENT STATION:

Brookings	South Dakota State Univ.
Agronomy	
Plant Pathology	
Highmore	Central Substation
Presho	South Central Research Farm

D. G. Wells
G. W. Buchenau
Frank Holmes
Harry Geise

NORTH DAKOTA AGRICULTURAL EXPERIMENT STATION:

Fargo	North Dakota State University
Agronomy	

R. C. Frohberg
J. R. Erickson
G. S. Smith
T. J. Conlon
Neil Riveland

Dickinson	Dickinson Substation
Williston	Williston Substation

MONTANA AGRICULTURAL EXPERIMENT STATION:

Bozeman	Montana State University
Plant & Soil Science	

Alan Taylor
C. R. Haun
Lyle Stempke
Chas. Crowell

Moccasin	Central Montana Br. Sta.
Havre	North Montana Br. Sta.
Sidney	Eastern Montana Br. Sta.

IDAHO AGRICULTURAL EXPERIMENT STATION:

Aberdeen	Aberdeen Branch Station
Tetonia	Tetonia Branch Station

D. W. Sunderman*
B. A. McCallum

MINNESOTA AGRICULTURAL EXPERIMENT STATION:

St. Paul	Institute of Agriculture	
	Agronomy and Plant Genetics	R. E. Heiner*
Waseca	Southern Experiment Station	William Lueschen

ILLINOIS AGRICULTURAL EXPERIMENT STATION:

Urbana	University of Illinois	
	Agronomy	R. O. Weibel
		C. M. Brown
	Plant Pathology	W. M. Bever

MISSOURI AGRICULTURAL EXPERIMENT STATION:

Columbia	University of Missouri	
	Field Crops	D. T. Sechler

CANADA DEPARTMENT OF AGRICULTURE:

Lethbridge	Canada Agr. Research Sta.	M. N. Grant
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WASHINGTON AGRICULTURAL EXPERIMENT STATION:

Lind	Dryland Research Unit	W. L. Nelson
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THE 1969 CROP YEAR

The 1969 winter wheat crop of 1,148 million bushels was substantially below the 1968 record crop of 1,235 million bushels. However, an average yield per harvested acre of 31.3 bushels in 1969 was 2.2 bushels per acre higher than in 1968. This reflects a lower planted as well as lower harvested winter wheat acreage this year compared to 1968.

Fall-seeded wheat entered winter in good condition except in western Kansas, southwestern Nebraska, eastern Colorado, the Oklahoma Panhandle and eastern New Mexico where dry conditions prevailed. The wheat overwintered well in most areas but some smothering losses from standing water and ice occurred in eastern Nebraska. Late February and March precipitation improved wheat prospects in the dry areas. Rains during June were heavy in Kansas, Oklahoma and Nebraska. Lodging became severe in some areas. A late freeze in mid-June damaged the crop in northeastern Colorado, the Nebraska Panhandle, and central Montana. Head sterility was serious in some localities.

Leaf rust became heavy on susceptible varieties in the eastern half of the region. Stem rust remained light except in localized portions of some fields where conditions were favorable for stem rust development.

Winter wheat production statistics for 10 states appear in the tabulation that follows:

<u>State</u>	<u>Seeded acres 1,000</u>	<u>Harvested acres 1,000</u>	<u>Aban- donment %</u>	<u>Yield per harvested acre bu.</u>	<u>Production (bu.) 1,000</u>
New Mexico	288	159	44.8	32.0	5,088
Texas	4,124	2,869	30.4	24.0	68,856
Colorado	3,075	2,113	31.3	21.0	44,373
Oklahoma	5,299	4,150	21.7	28.5	118,275
Kansas	10,767	9,849	8.5	31.0	305,319
Nebraska	2,999	2,717	9.4	31.5	85,586
South Dakota	740	622	15.9	25.5	15,861
Wyoming	266	220	17.3	20.0	4,400
Montana	2,445	2,311	5.5	26.0	60,086
North Dakota	110	96	12.7	25.5	2,448

Data from USDA Statistical Reporting Service, Crop Reporting Board, CR-PR 2-1(69) Washington, D. C.

Acreage abandonment was highest in New Mexico (44.8%) followed by Colorado and Texas, both with abandonments higher than 30%. The 32 bushel average yield per harvested acre in New Mexico reflects a relatively high irrigated wheat acreage in that state. Nebraska and Kansas with 31.5 and 31.0 bushel averages were the only other states among those listed with average yields higher than 30 bu/a.

NEW VARIETIES

Foundation seed of Winoka, C.I. 14000, was distributed to growers in South Dakota for fall seeding in 1969. Winoka, selected from the Canadian variety Winalta, was described in last year's regional report.

The Texas Agricultural Experiment Station distributed Foundation Seed of Caprock (TX 391-56-D1-29), a sister selection of Sturdy for planting in the fall of 1969. This new variety also was described in last year's regional report.

The Nebraska and Kansas Agricultural Experiment Stations have under increase improved quality selections from the Scout variety, NB65482 and KS6728. In both cases, the selections exhibit distinctly stronger mixing properties than Scout itself. The Nebraska Station anticipates distribution in 1970 of foundation seed of NB65482 from a 50-acre increase. The Kansas Station may follow a similar time schedule with KS6728.

The Nebraska Agricultural Experiment Station made initial breeder seed increase of NB66425 (Ky58/2/Nth/3/Hope/2*Tk/4/Cnn/5/Pkr) in 1969. The variety is undergoing maximum foundation seed increase at sites in Nebraska and Colorado in 1970. It has an outstanding performance record in the SRPN in 1968 and 1969.

SOUTHERN REGIONAL PERFORMANCE NURSERY

Twenty-four varieties and hybrids were evaluated in 1969. The nursery was grown at 27 sites in 10 states in the region. There were both irrigated and dryland nurseries at Bushland, Texas and Clovis, New Mexico. Observation plots not included in the above totals, were grown at Brookings, South Dakota and Aberdeen, Idaho. The nursery entries also were evaluated at Lind, Washington.

Yield data were reported from all replicated nursery sites except Bushland, Texas (irrigated nursery); Mead, Clay Center, and Sidney, Nebraska; Columbia, Missouri; Ames, Iowa; and Highmore, South Dakota. Hail destroyed the irrigated nursery and damaged the dryland nursery at Bushland. The nurseries at Mead and Clay Center, Nebraska were decimated by smothering from standing water and ice during the winter. The SRPN at Sidney, Nebraska was heavily damaged by rabbit feeding during the early winter and had to be abandoned. Severe and prolonged lodging at Columbia, Missouri prevented harvest of the nursery while at Ames, Iowa, spotty but severe winterkilling rendered the nursery useless for yield purposes. Water and ice during the winter are believed to be primarily responsible for erratic and heavy stand losses leading to abandonment

of the Highmore, South Dakota SRPN. Heavy winterkilling occurred at Lind, Washington -- particularly in the winter-tender entries. Yield data were not reported for these varieties.

Data from reporting sites appear in table 1. Pedigrees and C.I. or Selection Numbers of nursery entries appear in the listing that follows:

Entry No.	Pedigree	C.I. or Sel.No.	Source
1	Kharkof	1442	Check
2	Early Blackhull	8856	Check
3	Comanche	11673	Check
4	Scout 66	13996	Nebr.
5	Pn/Cnn/3/Pn/2/Ky58/4/Cnn	NB66403	Nebr.
6	"	NB66404	Nebr.
7	Ky58/2/Nth/3/Hope/2*Tk/4/Cnn/5/Pkr	NB66425	Nebr.
8	Triumph	12132	Okla.
9*	DeKalb Hybrid	A223	DeKalb
10*	" "	A227	DeKalb
11*	" "	A230	DeKalb
12*	" "	A231	DeKalb
13*	" "	A234	DeKalb
14	" "	A235	DeKalb
15	Danne Selection 145B4	OK60111	Okla.
16*	Ky58/5/Nth/6/Cnn/Tm/3/M1/2/Hope/7/- Pn/4/Cnn/8/Om	NB66497	Nebr.
17	Bowie/Quanah//Tascosa	TX61A58	Texas
18	Agent/Tascosa	TX62C436	Texas
19	391-56-D1-8/Tascosa	TX62A4793-7	Texas
20	391-56-D1-8/Triumph	TX62A2607-6	Texas
21	Wrr/6/Ky58/4/Nth/5/Cnn/Tm/3/M1/2/- Hope/7/Pkr	CO652363	Colo.
22*	Norin 16/C.I. 12500//Bsn	TX65A1682	Texas
23*	Scout Selection	KS6728	Kansas
24**	Winoka	14000	S.Dak.

* New in 1969

** Entered from NRPN in 1969

Data Obtained

Denton--The stands of all varieties were good. Moisture was ample throughout the winter and spring. Varieties became rank but lodging in the SRPN was negligible. Varieties tillered well but the heads were small. Leaf rust was heavy. There was a moderate to heavy infection of mildew.

Chillicothe--The SRPN was much later than commercial fields in the area. This may reflect time of seeding in the fall. Stands were good and there was no loss of wheat during the winter. A dry spell in April was followed by ample moisture until harvest. In contrast to Denton the straw was short at Chillicothe probably due to the early dry weather. Leaf rust was heavy but readings were not reported.

Bushland--Both dryland and irrigated nurseries at Bushland were excellent until hail in June destroyed the irrigated nursery and caused moderate damage to the dryland nursery. The irrigated nursery was not harvested for yield. Although dryland nursery yields are reported, they were not included in regional averages for 1969 because of differential damage to varieties from the June hail.

Clovis--The dryland SRPN was the best in years. Precipitation totaled 12.58 inches for the crop year with 6.90 inches received in May. The nursery was sprayed for greenbugs on April 9. All entries survived the winter without loss of stand except TX62C436 and Hybrid A-234.

Fertilizer in the amount of 180-50-0 with 27 lbs. of sulfur was applied to the irrigated SRPN at Clovis. The nursery was irrigated 5 times and sprayed for greenbugs on April 9. The heavy nitrogen applications, irrigations, and the heavy rainfall in May resulted in severe lodging of varieties and hybrids in the nursery except the semi-dwarf entries from Texas. Reported yields appear to reflect degree of lodging.

Stillwater--Uniformly good stands were established in the fall. Soil moisture was excellent throughout the year. Moderately heavy infections of mildew and leaf rust developed but are not believed to have had serious effect on yield performance. Heavy rain storms prior to harvest caused some varieties to lodge. Varieties and hybrids differed widely in yield.

Cherokee--Good soil moisture in the fall permitted uniform stand establishment. Septoria leaf blotch occurred in the spring and became particularly severe on early maturing types. This was the last year for wheat nurseries at Cherokee. All research at the Wheatland Research Station was terminated on June 30, 1969.

Woodward--Near-ideal conditions of moisture and temperature throughout the year at Woodward are reflected in the high yields of varieties. There was no disease development of consequence. Lodging did not occur.

Manhattan--It was wet at seeding time and emergence ranged from fair to good. There was little fall growth. Water-logged soil in portions of the nursery during the winter may have caused some thinning of stands. Spring growth was slow and uneven. The nursery area was sprayed for wild buckwheat control. The spray treatment caused some damage to the wheat. Spring wheat development was 10-15 days later than normal. Heavy stem rust caused damage to susceptible entries. The rust effect is reflected in reported yields. Rains delayed harvest approximately 2 weeks.

Hays--Soil moisture at seeding time was adequate for germination and stand establishment. The wheat made good fall growth and survived the winter without apparent damage. The spring and early summer were wet and cool. There was no drought stress. Leaf rust was the only disease of consequence. It may have affected the performance of late-maturing entries. Army worms de-awned late varieties.

Garden City--The nursery was seeded on September 19 in adequate soil moisture for fall stand establishment. There was no winter-killing nor disease and insect problems in the spring. Abundant spring precipitation is reflected in the very high yields reported for the nursery entries.

Colby--Surface soil moisture was sufficient for germination and emergence but sub-soil moisture was short. There was minimal fall growth but no loss of stands occurred during a mild winter. Winter and spring moisture was below normal. The wheat benefited from a late cool spring and did not show moisture stress until late May and early June. June rains permitted the wheat to mature normally and produce about normal yields for the area. Disease and insect problems were not observed.

Colorado Stations--The SRPN was grown at 6 sites in Colorado, 4 of which were in the commercial wheat area of the eastern part of the state. They were Fort Collins, Akron, Julesburg, Burlington, Springfield and Yellow Jacket (West Colorado). Excellent nurseries were produced at all sites -- particularly those in eastern Colorado. Generally good stands at these sites reflect good fall seeding conditions and the absence of winter injury. The unusually high yields reported are indicative of the good conditions of moisture and temperature that prevailed in eastern Colorado during the spring and early summer. Too much late season rain at Julesburg probably reduced yields from an exceptionally high early June potential. There was heavy leaf rust at Fort Collins, Julesburg, and Burlington. NB66425 exhibited the best combined resistance to leaf and stem rust at Fort Collins.

Nebraska Stations--The SRPN was seeded at 5 locations -- Mead (Lincoln), Clay Center, North Platte, Sidney, and Alliance. Adequate fall stands were obtained at all sites but ensuing winter conditions were less than good. At Mead and Clay Center the nurseries were lost from standing water and ice cover during parts of the winter and early spring. Heavy grazing by rabbits in late fall and early winter destroyed much of the nursery at Sidney and resulted in its abandonment. Spring development at Alliance was only fair and a mid-June freeze caused moderately heavy damage in the form of spike sterility. Only the North Platte nursery was considered to be normal. Data are reported from North Platte and Alliance.

South Dakota Stations--Replicated nurseries were grown at Presho and Highmore and observation plots at Brookings. Data are reported from Presho where nursery yields were high. Leaf rust became very heavy. Only TX62C436 was resistant. The SRPN at Highmore was not harvested. Fall stands were adequate but heavy and erratic losses of stand occurred during the winter -- probably from water and ice. Summer rainfall at Brookings was excessive and wheat was attacked by leaf and stem rust, Septoria, root rot, and black chaff. Data were not reported from Brookings.

Urbana--Fall and winter conditions were not reported. Harvest was delayed by heavy rains and high winds but the SRPN was not measurably affected. Grain yields were high.

Columbia--Heavy rains prior to and during the harvest period caused all entries in the SRPN to completely lodge. Harvest was not possible. Agronomic and disease data were reported.

Ames--There was good stand establishment from September 20 planting. Severe but erratic loss of stands occurred during the winter resulting in abandonment of the nursery for yield purposes. Survival and leaf rust data were reported.

Lind--Heavy stand reductions occurred during the winter. Fall stand establishment was about 90%. Plots with less than 40% surviving stands were not harvested. Yields were highly erratic and are not included in this report. Agronomic data are reported but were excluded from the regional summary of agronomic data in table 6.

Table 1.--Yield and other data for varieties grown in the Southern Regional Performance Nursery at 23 stations (24 trials) in the hard red winter wheat region in 1969.

Denton, Texas
Four replications

C.I. or Sel. No.	Date : headed	Plant : height	Leaf : rust	Mildew : %	Weight : per bushel	Av. acre yield			No. years grown	Percent of Kharkof
	April	In.	%	%	Lbs.	Bu.	Bu.			
NB66425	17	42	10	T	58.5	46.7	42.2	2	197.9	
TX62C436	19	47	T	10	61.0	45.5	40.4	2	189.7	
TX65A1682	20	36	60	10	60.5	41.9	--	1	155.8	
A223	21	47	70	10	61.0	40.1	--	1	149.1	
A230	23	47	70	20	60.5	39.9	--	1	148.3	
13996	21	44	50	T	59.5	39.6	31.6	5	146.9	
KS6728	22	43	60	10	59.5	38.2	--	1	142.0	
A234	19	49	70	15	61.0	37.1	--	1	137.9	
TX61A58	25	46	30	5	61.0	36.3	33.3	2	156.3	
TX62A2607-6	23	36	50	20	60.0	35.5	29.3	2	137.3	
A227	22	47	70	10	60.0	35.3	--	1	131.2	
CO652363	23	42	50	15	60.5	35.1	31.0	2	145.5	
12132	15	43	70	5	62.0	34.8	26.9	9	123.9	
NB66404	24	42	70	5	59.5	34.5	26.2	2	123.0	
NB66497	20	42	60	T	58.0	34.1	--	1	126.8	
OK60111	15	43	50	30	59.0	33.9	28.0	2	131.5	
NB66403	23	41	60	10	58.0	33.2	25.6	2	120.0	
TX62A4793-7	23	36	50	15	55.0	32.6	23.2	2	108.9	
11673	25	46	70	10	58.5	32.3	27.7	29	127.9	
8856	15	46	60	5	61.5	31.8	27.0	33	130.1	
A235	18	46	70	20	61.0	30.7	--	1	114.1	
1442	27	46	40	15	58.0	26.9	21.3	33	100.0	
A231	19	41	70	5	61.5	26.9	--	1	100.0	
14000	24	45	60	30	60.0	25.4	--	1	94.4	

L.S.D. .05 = 3.6 bushels; C.V. = 7.2%

Chillicothe, Texas
Four replications

C. I. or Sel.No.	Date		Plant height In.	Weight per bushel Lbs.	Av. acre yield		No. years grown	Percent of Kharkof
	First head	Full ripe			1969	1968- 1969		
	May	June			Bu.	Bu.		
NB66425	1	5-31	28	61.0	38.3	38.2	2	155.1
TX62A2607-6	4-29	5-30	25	59.5	36.1	37.6	2	152.6
TX62A4793-7	3	4	28	57.0	36.1	35.4	2	143.7
KS6728	2	2	29	60.0	36.0	--	1	131.9
TX65A1682	4-28	5-29	26	60.0	34.5	--	1	126.4
13996	1	1	29	59.5	34.0	33.2	5	117.6
OK60111	4-24	5-26	32	59.5	33.8	28.6	2	116.3
TX61A58	2	2	29	61.0	33.1	34.6	2	140.4
NB66497	4	4	29	60.0	30.8	--	1	112.8
NB66403	7	8	31	58.5	30.0	26.3	2	106.9
8856	4-26	5-28	34	60.0	29.5	26.5	31	108.8
CO652363	5	5	29	62.0	29.3	29.2	2	118.5
A223	4-28	5-29	34	61.5	28.8	--	1	105.5
NB66404	6	7	30	59.0	28.6	25.7	2	104.5
A227	4-30	5-30	33	60.0	28.6	--	1	104.8
1442	8	7	35	59.0	27.3	24.6	31	100.0
A235	4-30	5-31	31	62.0	27.2	--	1	99.6
12132	4-25	5-27	32	60.5	27.1	25.3	9	128.7
11673	2	3	33	61.0	27.0	27.3	31	116.6
A234	4-28	5-30	32	62.5	24.5	--	1	89.7
A230	4-30	5-31	30	61.5	24.3	--	1	89.0
TX62C436	3	3	32	61.0	23.0	26.5	2	107.5
14000	11	11	35	58.0	22.4	--	1	82.1
A231	4-26	5-29	31	61.0	22.4	--	1	82.1

L.S.D. .05 = 3.62 bushels; C.V. = 8.3%

Bushland, Texas
Four replications, dryland

C. I. or Sel. No.	Date headed	Plant height	Hail damage	Weight per bushel	Av. acre yield
	May	In.	% shatter	Lbs.	Bu.
13996	11	26	10	60.1	22.4
NB66425	11	28	15	60.1	21.6
TX62A2607-6	9	24	10	59.8	21.5
NB66403	14	27	17	59.1	21.0
KS6728	12	24	9	60.2	20.7
NB66404	15	25	16	60.1	20.6
OK60111	8	27	10	60.3	19.9
1442	20	28	2	59.5	19.6
TX62A4793-7	10	24	5	54.1	19.6
TX61A58	12	28	5	60.6	19.5
NB66497	11	26	11	58.7	18.8
14000	20	29	5	60.1	18.7
A227	14	28	9	59.9	18.6
TX65A1682	8	22	10	58.5	18.4
CO652363	13	27	7	59.9	18.2
TX62C436	12	26	10	59.5	18.1
8856	6	27	10	60.1	17.3
11673	15	28	5	60.3	17.2
12132	6	28	11	59.5	16.2
A235	11	27	17	60.3	15.9
A223	13	29	12	59.6	14.3
A230	14	27	9	58.9	13.9
A231	9	27	13	59.4	12.2
A234	9	26	20	58.0	10.1

L.S.D. .05 = 2.0 bushels; C.V. = 10.9%

Clovis, New Mexico
Four replications, dryland

C. I. or Sel. No.	Date		Plant height	Winter survi- val	Weight per bushel	Av. acre yield		No. years grown	Percent of Kharkof
	Headed	Ripe				1969	1968- 1969		
	May	June	In.	%	Lbs.	Bu.	Bu.		
1442	12	24	31	100	62	29.1	18.5	14	100.0
NB66403	6	19	28	100	63	28.6	21.3	2	114.9
NB66425	8	20	25	100	64	28.0	20.8	2	112.2
14000	13	25	29	100	63	27.2	--	1	93.5
NB66404	5	18	27	100	62	26.8	19.8	2	107.0
13996	4	18	25	100	63	26.5	18.5	2	99.7
TX62A4793-7	4	18	23	100	62	26.0	18.3	2	98.9
TX62C436	3	20	27	84	62	25.1	18.9	2	101.9
CO632363	8	24	26	100	64	23.9	16.4	2	88.4
NB66497	6	19	26	100	62	23.8	--	1	81.8
OK60111	4	18	25	100	62	23.6	15.0	2	80.8
TX62A2607-6	4	16	23	100	62	23.2	14.4	2	77.6
11673	8	20	28	100	63	22.6	16.0	14	97.5
A227	7	21	29	100	63	21.9	--	1	75.3
KS6728	5	18	25	100	62	21.6	--	1	74.2
TX61A58	6	21	27	100	63	21.5	15.8	2	85.4
A235	5	20	26	100	63	21.0	--	1	72.2
A223	8	21	28	100	63	19.4	--	1	66.7
8856	2	18	28	100	62	19.0	12.9	12	95.1
A234	2	17	26	95	62	17.8	--	1	61.2
TX65A1682	2	16	22	100	61	17.2	--	1	40.9
12132	4	17	25	100	62	16.8	11.3	6	91.3
A230	8	24	26	100	62	16.6	--	1	57.0
A231	4	22	24	100	61	11.0	--	1	37.8

L.S.D. .05 = 5.8 bushels; C.V. = 18.2%

Clovis, New Mexico
Four replications, irrigated

C. I. or Sel. No.	Date headed	Date ripe	Plant height	Winter survi- val	Weight per bushel	Av. acre yield		No. years grown	Percent of Kharkof
	May	June	In.	%	Lbs.	Bu.	Bu.		
TX62A2607-6	7	25	39	100	62.5	70.6	73.8	2	142.3
TX62A4793-7	8	27	44	99	63.1	69.8	76.0	2	146.6
TX65A1682	7	27	36	91	62.8	64.5	--	1	156.9
KS6728	8	24	41	99	61.8	62.8	--	1	152.8
NB66425	10	26	42	95	62.3	61.4	75.7	2	145.9
OK60111	6	25	44	100	63.2	59.7	66.6	2	128.4
TX62C436	7	24	39	80	60.5	59.4	67.5	2	130.2
CO652363	10	28	46	100	63.1	58.0	66.9	2	129.0
A235	7	24	45	100	63.7	58.0	--	1	141.1
8856	8	27	40	95	61.7	57.6	58.2	7	92.1
NB66497	8	26	43	99	61.5	55.4	--	1	134.8
14000	18	29	47	100	62.3	52.4	--	1	127.5
NB66404	9	28	44	97	61.9	50.7	64.8	2	125.0
A231	7	26	45	97	62.2	48.3	--	1	117.5
12132	6	25	45	99	62.8	47.2	54.8	7	88.3
A223	9	26	48	99	62.4	46.8	--	1	113.9
NB66403	11	27	45	99	60.8	45.8	61.6	2	118.7
TX61A58	11	28	44	97	62.6	45.4	57.3	2	110.5
A230	10	28	45	100	62.1	45.4	--	1	110.5
11673	10	26	48	100	61.6	45.3	62.1	7	98.4
A227	10	28	47	100	61.0	43.2	--	1	105.1
1442	18	25	46	99	60.4	41.1	51.9	7	100.0
13996	8	26	44	99	62.1	41.0	56.5	4	101.8
A234	7	25	46	89	62.5	36.0	--	1	87.6

L.S.D. .05 = 13.5 bushels; C.V. = 18.5%

Stillwater, Oklahoma
Four replications

C. I. or Sel. No.	: Date :	Plant:	Leaf rust			:Powdery:	Lodging	:Weight:	Av. acre yield:			No.:	Percent	
	:headed:	height:	T	S	P	:mildew :	when ripe	: per :	1969	1968-	:years:	of		
	:	:	:	:	:	:	:Broken:	Leaning:	bushel:	:	1969	:grown:	Kharkof	
	May	in.	%	%	%	type	%	%	%	lbs.	bu.	bu.		
NB66425	1	40	1-2	10	90	4	Tr	2	35	61.8	64.5	59.2	2	213.3
C0652363	3	39	1-2	10	50	4	20	2	5	62.9	58.6	51.0	2	183.6
NB66497	1	41	4	60	100	4	5	5	15	61.0	58.4	--	1	182.5
TX62A4793-7	3	37	4	20	100	4	30	5	5	57.2	56.1	52.9	2	190.5
A235	4-30	42	4	40	100	4	30	10	80	62.9	55.6	--	1	173.8
TX62A2607-6	2	36	4	10	100	4	40	2	0	60.3	55.5	52.6	2	189.4
KS6728	3	40	4	50	100	4	20	2	5	61.5	54.5	--	1	170.3
OK60111	4-29	42	4	50	100	4	30	10	80	62.0	54.3	48.5	2	174.6
12132	4-28	39	4	50	100	4	20	20	55	62.9	53.6	48.4	7	148.2
TX61A58	4	41	1	Tr	100	4	Tr	5	10	62.5	53.5	52.3	2	188.3
TX62C436	3	43	0	0	0	4	20	5	25	61.8	58.5	50.5	2	181.8
13996	3	42	4	30	100	4	Tr	5	25	61.6	53.3	47.6	4	169.3
A231	4-30	40	4	50	100	4	30	5	35	63.0	52.0	--	1	162.5
TX65A1682	4-30	35	4	40	100	4	50	2	5	60.8	51.9	--	1	162.2
11673	3	42	4	40	100	4	30	10	40	61.5	50.5	47.5	28	120.6
NB66404	3	40	4	60	100	4	30	2	5	61.0	50.4	47.3	2	170.3
A223	3	45	4	40	100	4	30	10	35	62.6	47.4	--	1	148.1
8856	4-29	42	4	40	100	4	30	10	75	63.0	47.3	41.1	34	119.7
NB66403	4	42	4	50	100	4	30	2	5	60.2	47.3	43.2	2	155.7
A230	4	40	4	40	100	4	40	5	10	62.4	44.9	--	1	140.3
A227	4	42	4	40	100	4	20	20	30	61.7	44.4	--	1	138.8
A234	4-30	45	4	40	100	4	30	25	60	62.0	44.3	--	1	138.4
14000	8	42	4	50	100	4	30	2	2	61.4	38.1	---	1	119.1
1442	9	42	4	70	70	4	30	5	15	61.2	32.0	27.8	34	100.0

L.S.D. .05 = 7.9 bushels; C.V. = 11.0%

Cherokee, Oklahoma

Four replications

C. I. or Sel. No.	Date headed	Plant height	Weight per bushel	Av. acre yield		No. years grown	Percent of Kharkof
				1969	1968- 1969		
	May	In.	Lbs.	Bu.	Bu.		
TX65A1682	2	36	61.5	51.9	--	1	139.1
NB66497	4	44	60.7	47.5	--	1	127.3
13996	4	45	61.7	45.8	41.3	5	155.0
TX61A58	6	46	62.3	45.0	47.0	2	164.2
NB66403	6	45	58.1	44.9	43.2	2	151.0
A235	2	46	62.3	43.5	--	1	116.6
NB66404	6	45	59.4	42.9	42.6	2	149.0
TX62A2607-6	4	37	58.7	42.6	40.8	2	142.7
TX62A4793-7	5	43	54.5	41.3	39.6	2	138.3
TX62C436	4-30	46	59.9	40.5	40.3	2	140.9
11673	5	46	60.2	40.3	39.8	22	134.5
KS6728	5	43	60.2	39.1	--	1	104.8
A230	7	46	60.6	39.0	--	1	104.6
NB66425	5	44	59.5	38.0	39.1	2	136.5
1442	8	47	60.8	37.3	28.6	22	100.0
CO652363	7	45	60.2	37.3	40.1	2	140.0
A223	5	47	61.7	37.3	--	1	100.0
8856	1	45	62.9	36.4	37.7	22	137.0
OK60111	2	43	59.0	36.3	38.5	2	134.4
A227	7	47	59.7	34.3	--	1	92.0
12192	1	43	60.3	33.0	32.8	9	140.9
14000	13	46	59.7	32.3	--	1	86.6
A231	3	45	60.7	31.8	--	1	85.3
A234	1	46	61.6	30.8	--	1	82.6

L.S.D. .05 = 5.4 bushels; C.V. = 9.6%

Woodward, Oklahoma
Four replications

C. I. or Sel. No.	Date headed	Plant height	Weight per bushel	Av. acre yield		No. years grown	Percent of Kharkof
				1969	1968- 1969		
	May	In.	Lbs.	Bu.	Bu.		
OK60111	4	43	63.0	64.4	59.9	2	207.3
NB66425	8	41	61.5	63.9	58.3	2	201.6
TX62A2607-6	6	35	61.7	63.1	54.8	2	189.4
12132	4	44	63.7	60.5	51.0	9	135.1
TX65A1682	5	34	62.2	59.4	--	1	156.3
NB66497	7	43	60.4	58.3	--	1	153.4
A234	7	46	62.6	57.4	--	1	151.1
13996	7	42	62.3	56.9	50.8	5	148.9
A235	6	44	62.6	56.8	--	1	149.5
CO652363	9	43	62.0	56.6	54.2	2	187.5
KS6728	8	40	61.6	55.1	--	1	145.0
11673	10	45	62.0	54.4	52.2	33	173.8
TX62A4793-7	7	36	55.6	53.8	52.2	2	180.6
TX62C436	10	45	60.2	52.0	48.3	2	167.0
A231	5	43	63.2	51.9	--	1	136.6
A230	9	44	61.1	51.3	--	1	135.0
TX61A58	11	46	61.5	50.5	47.5	2	164.4
A223	7	45	62.5	49.8	--	1	131.1
A227	10	47	60.3	49.8	--	1	131.1
NB66404	10	45	59.3	49.6	51.5	2	178.0
8856	3	44	64.0	48.0	44.0	38	111.6
NB66403	11	45	57.6	47.3	48.3	2	167.1
14000	16	45	59.9	38.1	--	1	100.3
1442	15	46	59.1	38.0	28.9	38	100.0

L.S.D. .05 = 7.1 bushels; C.V. = 9.4%

Manhattan, Kansas

Four replications

C. I. or Sel. No.	Plant	Leaf	Stem	Soil	Weight	Av.		No.	Percent
	height	rust	rust	borne	per	acre	yield		
	In.	%		mosaic	bushel	1969	1968+ 1969	years	of
				virus		Bu.	Bu.	grown	Kharkof
NB66425	33	6	MR	--	58.0	35.5	45.2	2	148.0
13996	35	19	MR	S	55.8	30.1	40.6	5	114.6
NB66497	30	49	MR	--	54.4	27.8	--	1	159.8
KS6728	30	26	MR	S	53.0	26.6	--	1	152.9
CO652363	32	15	R	S	54.2	24.9	38.1	2	124.5
NB66404	35	40	MR	S	53.8	24.3	38.6	2	126.4
NB66403	34	42	MR	S	52.2	23.8	39.2	2	128.2
A235	33	15	S	S	53.6	22.5	--	1	129.3
A231	32	30	MS	S	54.4	22.0	--	1	126.4
14000	36	30	MR	S	54.0	21.6	--	1	124.1
OK60111	32	40	S	S	55.0	21.3	39.3	2	128.6
A234	36	13	S	S	54.2	21.3	--	1	122.4
TX65A1682	25	38	S	S	47.8	19.8	--	1	113.8
A223	34	20	S	--	50.6	19.6	--	1	112.6
11673	34	28	MS	R	50.0	19.1	34.4	33	117.5
12132	31	40	S	S	54.4	19.0	34.3	9	103.9
A230	35	20	S	S	51.8	18.6	--	1	106.9
TX62C436	31	Tr	MS	--	54.0	17.8	30.3	2	99.0
A227	35	19	MS	--	56.4	17.5	--	1	100.6
1442	38	23	S	S	49.4	17.4	30.6	38	100.0
TX62A2607-6	25	15	S	S	50.0	10.5	29.4	2	96.2
8856	33	30	S	S	48.4	9.3	27.4	38	109.1
TX61A58	29	Tr	MS	--	48.8	9.0	32.7	2	106.9
TX62A4793-7	26	22	S	--	52.0	6.9	28.7	2	93.8

L.S.D. .05 = 6.1 bushels; C.V. = 21.0%

Hays, Kansas
Four replications

C. I. or Sel. No.	Date headed	Plant height	Leaf rust	Lodging		Post- ripe shatter- ing 7/4	Weight per bushel	Av. acre yield			No. years grown	Percent of Kharkof
				from vertical	Percent			1969	1968- 1969	Bu.		
	May	In.	%		%		Lb.	Bu.	Bu.			
TX65A1682	17	34	50	1	0	3	59.2	45.9	--	1	188.1	
KS6728	20	41	60	9	0	1	59.3	44.0	--	1	180.3	
TX61A58	20	47	0	14	1	2	61.4	43.4	38.4	2	123.3	
TX62A2607-6	16	36	25	5	0	63	56.5	42.3	42.4	2	136.0	
CI13996	19	44	50	15	4	6	58.9	41.9	41.6	5	132.1	
CI12132	14	44	75	16	1	1	60.6	40.7	38.6	8	111.7	
OK60111	16	43	60	15	2	8	58.7	40.7	39.2	2	125.7	
NB66425	21	43	0	17	4	23	58.7	39.0	42.4	2	136.0	
A231	17	46	30	14	3	4	59.1	38.7	--	1	158.6	
CI8856	16	46	35	22	4	13	61.1	38.5	38.2	32	114.3	
NB66403	21	45	60	17	4	6	57.8	38.3	44.2	2	141.9	
NB66404	21	46	60	15	0	3	58.6	38.1	41.0	2	131.5	
A230	20	46	10	16	2	0	58.6	37.5	--	1	153.7	
NB66497	18	42	65	13	2	15	57.5	37.2	--	1	152.5	
CO652363	21	42	5	15	2	1	59.4	36.5	39.2	2	125.7	
A235	17	44	50	11	0	33	59.9	35.7	--	1	146.3	
A227	21	47	50	15	2	4	59.0	34.6	--	1	141.8	
A223	19	46	60	9	1	15	58.9	34.3	--	1	140.6	
CI11673	22	48	50	21	7	5	57.6	32.9	33.2	28	120.2	
TX62A4973-7	17	37	25	2	2	63	52.5	31.2	34.2	2	109.6	
CI14000	26	48	50	17	4	15	61.3	29.7	--	1	121.7	
A234	19	48	35	10	0	40	58.9	29.4	--	1	120.5	
TX62C436	20	49	0	11	7	43	58.4	26.7	30.8	2	98.7	
CI1442	27	48	35	12	3	50	59.0	24.4	31.2	32	100.0	

L.S.D. = 4.9 bushels; C.V. = 9.5%
.05

Garden City, Kansas
Four replications

C. I. : or Sel. No.	Date : first head	Date : full head	Plant : height	Weight : per bushel	Av. : acre yield	No. : years grown	Percent of Kharkof
	May	May	In.	Lbs.	Bu.		
KS6728	16	19	36	62	59.0	1	137.9
NB66425	16	20	39	62	58.4	1	136.4
TX62A4793-7	13	17	33	60	57.1	1	133.4
A227	16	21	42	62	56.9	1	132.9
OK60111	13	17	38	62	56.1	1	131.1
NB66403	17	22	40	62	55.5	1	129.7
CO652363	16	22	38	62	54.9	1	128.3
TX61A58	17	21	40	62	54.9	1	128.3
NB66404	17	21	39	62	54.8	1	128.0
13996	14	18	40	62	54.4	3	117.0
NB66497	14	18	39	62	53.7	1	125.5
A230	16	20	40	62	53.1	1	124.1
TX62C436	14	19	40	62	52.6	1	122.9
TX65A1682	14	18	31	63	51.8	1	121.0
A235	13	17	40	62	51.3	1	119.9
12132	12	17	39	63	51.2	7	97.8
TX62A2607-6	13	17	32	62	50.0	1	116.8
11673	17	22	41	61	49.6	14	106.3
14000	21	26	40	63	48.9	1	114.3
A231	13	17	38	62	48.0	1	112.1
8856	13	17	41	63	46.2	14	97.2
A234	14	18	42	62	44.4	1	103.7
A223	15	31	41	62	43.4	1	101.4
1442	21	27	41	62	42.8	14	100.0

L.S.D. .05 = 7.5 bushels; C.V. = 10.2%

Colby, Kansas
Four replications

C. I. or Sel. No.	Date		Plant height In.	Weight per bushel Lbs.	Av. acre yield		No. years grown	Percent of Kharkof
	Headed May	Ripe July			1969 Bu.	1968- 1969 Bu.		
13996	19	6-30	28	63.5	35.3	21.0	4	108.0
NB66403	22	2	28	62.5	33.1	20.3	2	115.7
KS6728	20	6-30	27	62.5	31.9 ^{1/2}	--	1	119.0
NB66425	22	2	27	62.0	31.7	17.9	2	101.7
NB66404	22	2	28	62.5	31.5	18.9	2	107.4
NB66497	19	6-30	27	61.5	31.5	--	1	117.5
14000	26	3	30	62.5	30.7	--	1	114.6
11673	23	3	30	61.0	29.8	17.3	16	99.6
TX61A58	23	3	28	63.0	29.4	16.2	2	92.3
TX62A4793-7	20	2	27	58.0	29.1	16.1	2	91.5
OK60111	18	6-30	28	61.5	28.7	16.6	2	94.6
TX65A1682	18	6-30	24	63.0	28.1	--	1	104.9
A227	20	2	28	62.5	27.9	--	1	104.1
A235	18	6-30	29	63.0	27.8	--	1	103.7
C0652363	22	2	26	63.0	27.5	16.6	2	94.3
1442	27	3	30	61.0	26.8	17.6	17	100.0
TX62C436	19	6-30	27	61.5	26.5	13.3	2	98.9
12132	17	6-30	29	63.0	26.0	15.0	7	89.8
8856	19	6-30	30	63.0	25.8	16.1	17	94.2
A223	19	6-30	30	62.0	25.8	--	1	96.3
TX62A]607-6	20	2	24	62.0	25.3	15.0	2	82.9
A234	18	6-30	30	62.0	25.2	--	1	94.0
A231	19	6-30	30	62.0	23.8	--	1	88.8
A230	20	2	27	62.5	21.8	--	1	81.3

L.S.D. .05 = 5.2 bushels; C.V. = 12.9%

Fort Collins, Colorado
Four replications

C. I. or Sel. No.	Date headed	Plant height	Rust		Weight per bushel	Av. acre yield			No. years grown	Percent of Kharkof
			Leaf	Stem		1969	1968- 1969	1969		
	June	In.	%	%	Lbs.	Bu.	Bu.			
TX62C436	5-29	40	0	19	62.5	100.3	97.5	2	153.6	
NB66425	6	40	1	3	61.6	97.2	91.8	2	144.6	
NB66403	6	45	90	8	61.6	94.5	95.6	2	150.6	
OK60111	5-30	39	90	31	62.0	90.3	90.2	2	142.2	
CO652363	5	40	85	8	62.7	88.5	83.1	2	130.9	
13996	1	41	90	11	62.3	87.9	91.5	4	136.9	
TX62A2607-6	2	30	38	46	61.3	86.5	87.7	2	138.1	
TX61A58	5	39	1	21	62.7	85.8	80.9	2	127.4	
NB66497	1	38	90	6	61.1	84.2	--	1	159.8	
KS6728	3	38	90	19	61.4	82.6	--	1	156.8	
NB66404	5	44	90	10	61.1	81.4	85.3	2	134.4	
A235	2	40	90	65	63.0	80.5	--	1	152.8	
A227	5	46	88	53	62.1	80.1	--	1	152.0	
11673	5	44	90	45	61.5	77.9	77.2	28	109.5	
TX62A4793-7	5-30	30	78	44	59.9	77.3	79.8	2	125.7	
12132	5-31	40	90	39	62.0	76.8	77.9	8	112.5	
A234	5	45	90	33	62.3	75.6	--	1	143.5	
A230	5	43	75	59	62.6	75.5	--	1	143.3	
TX65A1682	5-31	32	90	65	60.8	73.0	--	1	138.5	
14000	10	50	90	24	61.6	72.9	--	1	138.3	
A231	1	41	90	43	61.8	71.2	--	1	135.1	
8856	5-27	42	90	28	61.9	68.5	73.7	32	102.5	
A223	4	43	90	59	62.3	65.4	--	1	124.1	
1442	9	47	88	55	58.7	52.7	63.5	32	100.0	

L.S.D. .05 = 8.4 bushels; C.V. = 7.5%

Akron, Colorado
Four replications

C.I. or Sel. No.	Date headed	Plant height	Weight per bushel	Av. acre yield		No. years grown	Percent of Kharkof
				1969	1968- 1969		
	May	In.	Lbs.	Bu.	Bu.		
NB66425	27	32	59.0	59.5	40.0	2	128.0
TX65A1682	24	28	58.5	56.0	--	1	130.5
NB66497	24	32	58.7	54.8	--	1	127.7
NB66403	27	32	58.5	54.1	36.7	2	117.3
13996	23	33	59.7	53.1	37.9	3	100.4
TX62A2607-6	23	28	59.9	52.8	37.8	2	121.0
TX61A58	26	34	59.5	52.5	37.2	2	118.9
OK60111	25	35	58.8	52.0	36.9	2	117.9
A227	28	36	59.7	51.9	--	1	121.0
CO652363	27	33	59.1	50.6	34.6	2	110.6
NB66404	27	33	57.7	50.5	34.3	2	109.6
TX62C436	22	35	57.9	50.0	36.5	2	116.6
KS6728	24	30	59.3	49.1	--	1	114.5
A235	25	35	60.4	47.3	--	1	110.3
12132	22	33	60.5	46.6	35.6	7	90.7
14000	6-1	33	58.9	46.2	--	1	107.7
TX62A4793-7	23	28	55.5	45.8	31.6	2	101.0
A234	26	37	59.3	45.0	--	1	104.9
A230	27	35	59.1	44.4	--	1	103.5
8856	22	34	59.3	43.5	33.7	25	106.2
11673	27	33	59.1	43.4	30.6	22	103.0
1442	6-1	34	58.0	42.9	31.3	25	100.0
A231	24	36	60.1	40.5	--	1	94.4
A223	27	36	60.1	39.3	--	1	91.6

L.S.D. .05 = 5.5 bushels; C.V. = 8.0%

Julesburg, Colorado
Four replications

C. I. or Sel. No.	Date headed	Plant height	Leaf rust	Spring vigor ¹	Wt. per bu.	Av. acre yield 1968- 1969	No. years grown	Percent of Kharof
	May	In.	%		Lbs.	Bu.	Bu.	
13996	28	39	35	1.0	57.5	56.5	47.0	4 118.3
NB66403	6-2	42	60	2.5	56.3	56.4	49.4	2 135.3
NB66425	31	37	6	2.0	57.1	54.6	47.5	2 130.0
A235	28	39	35	2.0	58.8	54.0	--	1 147.9
CO652363	30	38	15	2.0	59.4	53.8	46.2	2 126.4
TX62A4793-7	27	31	55	2.5	54.5	53.1	45.7	2 125.2
A230	31	40	30	2.0	58.7	52.5	--	1 143.8
OK60111	27	38	70	2.0	57.1	51.9	45.1	2 123.6
TX61A58	6-1	39	1	2.0	59.6	50.8	45.3	2 124.0
NB66404	31	42	55	1.5	55.6	50.8	46.0	2 126.0
TX62A2607-6	27	31	25	2.0	56.2	48.8	42.2	2 115.6
NB66497	30	36	80	2.5	56.3	48.5	--	1 132.9
TX65A1682	28	31	75	1.5	56.9	48.4	--	1 132.6
KS6728	29	36	45	2.0	56.9	48.3	--	1 132.3
A234	31	40	45	2.5	58.0	48.0	--	1 131.5
12132	27	38	75	1.0	57.7	45.1	40.7	4 99.6
A231	31	40	50	2.5	57.8	44.2	--	1 121.1
11673	6-1	42	35	1.0	56.8	43.5	38.8	4 98.4
A223	29	42	25	2.0	58.1	43.4	--	1 118.9
TX62C436	28	39	8	2.5	57.6	43.2	39.5	2 108.1
A227	31	42	25	2.0	57.9	43.0	--	1 117.8
8856	27	41	55	1.0	57.9	42.0	39.6	4 97.2
1442	6-6	49	15	2.5	56.9	36.5	36.5	4 100.0
14000	31	42	8	2.5	59.8	36.4	--	1 99.7

L.S.D. .05 = 6.5 bushels; C.V. = 9.6%

¹/₁ = good; 3 = poor

Burlington, Colorado
Four replications

C. I. or Sel. No.	Date headed	Plant height	Rust Leaf	Stem	Wt. per bu.	Av. acre yield 1968-1969	No. years grown	Percent of Kharkof
	May	In.	%	%	Lbs.	Bu.	Bu.	
NB66425	28	27	45	0	61.1	45.1	40.4	2 128.5
NB66403	29	28	75	0	60.6	41.7	39.8	2 126.8
TX65A1682	22	30	45	5	60.8	40.9	--	1 140.5
13996	24	31	40	0	61.5	40.5	33.3	2 106.1
KS6728	27	29	65	1	61.0	38.8	--	1 133.3
NB66497	24	28	50	0	59.9	38.6	--	1 132.6
A227	29	31	45	10	61.2	37.6	--	1 129.2
TX61A58	29	31	13	0	58.2	37.6	36.6	2 116.4
NB66404	29	28	70	0	60.7	37.4	37.7	2 120.1
CO652363	27	28	13	0	62.6	37.3	36.4	2 115.8
A235	25	31	45	20	59.9	35.5	--	1 122.0
A234	26	33	50	0	60.7	35.4	--	1 121.6
A230	29	30	40	5	61.6	35.1	--	1 120.6
TX62A2607-6	26	24	45	15	59.8	34.8	35.2	2 111.9
11673	27	31	45	15	60.5	34.3	30.4	2 96.7
TX62C436	22	30	3	0	59.9	33.9	24.3	2 109.1
14000	6-7	32	55	1	61.8	33.0	--	1 113.4
A223	28	31	35	10	60.9	32.4	--	1 111.3
OK60111	25	29	50	5	62.1	32.4	31.9	2 101.4
TX62A4793-7	29	25	45	13	58.2	31.7	32.0	2 101.9
1442	6-3	29	40	10	60.6	29.1	31.4	2 100.0
12132	25	29	50	13	61.2	29.0	27.9	2 88.9
8856	25	31	50	6	61.5	28.9	31.4	2 100.0
A231	24	30	60	5	62.2	24.8	--	1 85.2

L.S.D. .05 = 4.4 bushels; C.V. = 8.9%

Springfield, Colorado
Four replications

C. I. or	Date	Plant	Weight	Av. acre yield	No.	Percent		
Sel. No.	headed:ripe:	height: per	: 1969	: 1968-	years:	of		
:	:	:	:bushel:	:	: 1969	:grown:Kharkof		
	May	July	in.	lbs.	bu.	bu.		
NB66425	28	7	26	61.2	51.5	40.1	2	151.6
NB66403	31	9	26	59.7	45.1	37.0	2	139.7
NB66404	31	10	25	59.1	42.6	34.6	2	130.6
OK60111	27	6	24	59.6	42.3	30.7	2	115.9
TX61A58	29	9	25	59.5	40.5	35.3	2	133.3
C0652363	30	10	25	60.9	40.4	32.9	2	124.4
13996	29	8	24	60.6	38.9	28.2	3	93.3
11673	31	9	27	59.0	38.4	30.1	9	108.7
A227	29	8	28	58.5	37.9	--	1	124.3
TX62C436	29	8	26	59.1	37.2	27.9	2	105.2
TX62A4793-7	26	5	21	58.5	37.1	30.9	2	116.6
NB66497	27	7	23	59.2	36.4	--	1	119.3
TX65A1682	26	6	23	58.9	35.9	--	1	117.7
A235	25	5	24	60.9	35.4	--	1	116.1
TX62A2607-6	24	4	22	59.5	35.3	31.3	2	118.1
12132	26	6	24	59.5	34.9	24.4	6	81.7
KS6728	31	10	23	59.5	34.3	--	1	112.5
A223	30	8	27	59.4	33.5	--	1	109.8
14000	6-5	14	27	59.4	33.5	--	1	109.8
A230	31	9	26	59.8	32.9	--	1	107.9
8856	26	6	26	59.2	32.5	24.5	9	98.0
1442	6-4	12	27	56.3	30.5	26.5	9	100.0
A234	27	7	26	60.0	30.2	--	1	99.0
A231	27	7	24	58.7	23.0	--	1	75.4

L.S.D. .05 = 6.1 bushels; C.V. = 11.9%

Yellow Jacket, Colorado

Four replications

C.I. or Sel. No.	Plant height	Weight per bushel	Av. acre yield		No. years grown	Percent of Kharkof
			1969	1968- 1969		
	In.	Lbs.	Bu.	Bu.		
NB66403	23	63.3	20.2	15.5	2	108.4
NB66425	24	63.4	19.4	18.4	2	129.1
13996	24	63.7	18.0	15.1	4	107.3
A227	26	63.5	18.0	--	1	111.8
A235	23	64.1	16.3	--	1	101.3
TX62C436	23	63.5	16.2	14.8	2	103.9
NB66404	25	64.0	16.1	14.1	2	98.9
1442	24	64.5	16.1	14.3	4	100.0
C0652363	22	64.1	15.5	14.3	2	100.4
11673	23	64.1	15.4	12.8	4	92.8
KS6728	25	63.7	15.2	--	1	94.4
TX65A1682	26	64.0	14.8	--	1	91.9
OK60111	21	63.5	14.5	12.5	2	87.4
12132	25	63.4	14.4	13.1	4	93.9
14000	23	64.5	14.2	--	1	88.2
A223	23	63.9	13.9	--	1	86.3
TX61A58	23	64.2	13.8	12.4	2	87.0
A230	26	63.7	13.2	--	1	82.0
NB66497	25	62.5	12.9	--	1	80.1
8856	23	64.5	12.5	13.4	4	92.2
A234	25	63.1	12.3	--	1	76.4
TX62A4793-7	23	62.8	11.6	13.1	2	91.9
TX62A2607-6	27	61.7	10.9	9.7	2	67.7
A231	25	--	9.3	--	1	57.8

L.S.D. .05 = 4.7 bushels; C.V. = 22.8%

North Platte, Nebraska

Three replications

C.I. or Sel. No.	Date headed	Plant ht.	Weight per bushel	Av. acre yield		No. years grown	Percent of Kharkof
				1969	1968- 1969		
	May	In.	Lbs.	Bu.	Bu.		
NB66403	26	31	63.4	47.5	44.0	2	109.5
A227	25	35	63.9	43.6	--	1	105.1
NB66425	25	31	63.7	43.1	40.3	2	99.3
13996	25	32	63.7	42.9	40.8	5	113.2
1442	29	33	62.3	41.5	40.6	32	100.0
14000	29	33	63.6	41.5	--	1	100.0
NB66404	26	31	63.4	40.3	40.7	2	100.4
NB66497	25	31	61.8	40.1	--	1	96.6
KS6728	25	31	63.1	39.5	--	1	95.2
11673	26	34	63.0	38.7	36.1	29	112.2
CO652363	25	31	63.9	37.5	36.0	2	8.88
TX61A58	26	32	64.0	37.0	38.1	2	93.8
A230	25	32	63.4	37.0	--	1	89.2
A235	25	33	63.8	36.6	--	1	88.2
OK60111	25	31	63.6	35.1	34.6	2	85.3
8856	24	35	63.7	35.0	33.5	32	100.5
TX65A1682	25	26	62.7	33.2	--	1	80.0
A223	25	34	63.5	31.6	--	1	76.1
12132	23	30	63.0	30.8	33.1	9	109.1
TX62A4793-7	25	28	61.0	30.6	29.7	2	73.6
A234	26	33	63.0	30.6	--	1	73.7
TX62C436	26	31	63.0	29.4	29.4	2	72.5
TX62A2607-6	25	27	62.0	28.7	30.9	2	76.2
A231	25	33	62.0	25.6	--	1	61.7

L.S.D. .05 = 4.6 bushels; C.V. = 7.6%

Alliance, Nebraska

Three replications

C.I. or Sel. No.	Plant height	Weight per bushel	Av. acre yield 1969	No. years grown	Percent of Kharkof
	In.	lbs.	Bu.		
NB66404	26	60.5	24.1	1	112.1
NB66403	25	59.0	23.7	7	110.2
NB66425	25	60.5	23.6	1	109.8
13996	28	60.0	23.3	4	134.3
14000	29	62.0	22.9	1	106.5
1442	30	60.5	21.5	30	100.0
11673	27	61.5	21.4	27	101.0
NB66497	26	58.5	20.8	1	96.7
A227	26	61.0	20.2	1	94.0
A235	28	60.5	20.0	1	93.2
Tx61A58	26	63.5	29.8	1	92.1
KS6728	25	59.5	19.7	1	91.6
OK60111	26	58.5	18.8	1	87.4
8856	28	60.5	18.6	30	93.8
A223	28	61.5	17.2	1	80.0
CO652363	24	61.5	17.8	1	78.1
Tx62A4793-7	23	59.5	15.6	1	72.6
Tx62A2607-6	23	58.5	15.5	1	72.1
A230	26	62.0	15.5	1	72.1
12132	27	59.0	15.4	7	97.3
Tx62C436	26	61.0	15.3	1	71.2
Tx65A1682	22	58.0	14.9	1	69.3
A234	28	60.5	11.2	1	52.1
A231	26	60.5	8.2	1	38.1

L.S.D. .05 = 8.1 bushels; C.V. = 13.3%

Presho, South Dakota
Four replications

	Date	Plant	Rust	Winter	Stand	Weight	Av. acre yield	No.	Percent			
C.I. or Sel. No.	headed	ripe	height	Leaf	Stem	survival	4-16-69	per	1969	1968	years	of
				7-2-69	7-2-69	4-16-69		bushel		1969	grown	Kharkof
	May	July	in.			%	%	lbs.	bu.	bu.		
TX62A4793-7	29	5	24	S-100	S-1	71	81	58.8	47.0	43.2	2	121.9
NB66403	6-1	6	30	S-100		80	91	60.4	46.0	48.5	2	136.8
NB66425	30	7	27	S-100		98	96	60.8	45.9	48.8	2	137.7
KS6728	28	6	27	S-100		96	81	59.9	42.1	--	1	121.3
13996	28	6	29	S-65		98	84	60.3	40.7	43.3	2	122.1
OK60111	28	4	29	S-100	S-Tr	98	95	60.0	39.9	--	1	115.0
NB66497	28	4	27	S-100		91	94	58.0	39.6	--	1	114.1
C0652363	31	7	26	Mix		98	90	61.3	38.6	41.4	2	116.8
NB66404	30	8	28	S-100		99	91	60.7	37.7	39.8	2	112.3
11673	31	6	29	S-100	S-Tr	98	86	60.0	37.3	38.9	2	109.6
A227	31	7	28	S-100	S-1	89	93	60.8	36.5	--	1	105.2
1442	6-6	9	31	S-100	S-Tr	98	89	60.3	34.7	35.5	2	100.0
14000	6-6	8	31	S-65		98	91	61.0	34.1	--	1	98.3
A223	30	7	29	S-100		96	94	60.7	33.7	--	1	97.1
8856	29	3	30	S-100	S-Tr	90	85	62.0	33.3	37.5	2	105.6
TX62A2607-6	28	6	24	X-65	S-Tr	70	83	58.7	33.3	39.2	2	110.4
TX61A58	6-1	8	30	S-1		96	89	61.6	33.0	38.4	2	108.2
TX62C436	6-2	9	29	R		85	76	59.2	32.8	32.6	2	91.8
A235	28	6	29	S-100	S-Tr	75	91	60.9	32.3	--	1	93.1
TX65A1682	29	5	23	S-100	S-1	83	90	58.4	27.7	--	1	79.8
12132	27	7	30	S-100		86	85	60.2	27.5	34.3	2	96.6
A230	30	6	28	X-40	S-1	99	89	59.9	26.9	--	1	77.5
A234	6-1	6	30	S-100	S-Tr	98	96	60.5	26.1	--	1	75.2
A231	28	6	29	S-100	S-Tr	94	94	61.0	23.8	--	1	68.6

L.S.D. .05 = 7.4 bushels; C.V. = 14.8%

Urbana, Illinois

Three replications

C.I. or Sel. No.	Date headed	Plant ht.	Weight per bushel	Av. acre yield		No. years grown	Percent of Kharkof
				1969	1968- 1969		
	May	In.	Lbs.	Bu.	Bu.		
TX62A4793-7	22	39	51.8	67.0	56.5	2	112.5
NB66425	25	44	59.7	65.9	61.6	2	122.6
NB66403	26	44	58.1	62.4	61.0	2	121.4
13996	24	45	59.8	61.5	58.0	5	122.4
NB66404	25	45	58.5	60.6	59.0	2	117.5
CO652363	25	43	60.8	60.6	57.2	2	113.9
TX62A2607-6	24	34	59.1	60.2	56.3	2	112.1
TX65A1682	24	33	59.7	58.6	--	1	107.7
A235	24	47	61.6	58.3	--	1	107.2
NB66497	24	42	58.3	58.2	--	1	107.0
OK60111	22	45	59.4	58.2	60.0	2	119.3
TX61A58	27	45	61.3	58.0	51.4	2	102.3
A227	25	48	59.7	57.9	--	1	106.4
KS6728	25	43	59.3	55.6	--	1	102.2
TX62C436	26	45	61.2	55.4	45.6	2	90.8
A230	25	45	60.6	54.8	--	1	93.4
11673	26	46	59.5	54.7	53.2	9	107.8
1442	30	47	59.4	54.4	50.2	9	100.0
14000	30	44	61.1	52.4	--	1	96.3
A223	25	48	60.4	51.8	--	1	95.2
8856	22	47	60.5	48.8	49.5	9	101.3
A231	23	44	59.7	46.9	--	1	86.2
A234	26	48	60.7	46.9	--	1	86.2
12132	22	44	60.2	38.3	44.5	9	99.2

L.S.D. .05 = 10.9 bushels; C.V. = 11.8%

Columbia, Missouri
Four replications

C. I. or Sel. No.	Date headed:	Plant height:	Lodging:	Mildew ^{1/}	Septorial/ leaf	head	Leaf rust
	May	in.	%	1-5 scale	1-5scale	1-5scale	
1442	28	45	83	3	2	2	18
8856	17	37	88	3	2	2	8
11673	22	46	90	3	2	2	18
13996	20	42	88	1	2	1	20
NB66403	23	44	88	2	3	1	5
NB66404	21	46	90	3	2	1	40
NB66425	20	44	93	2	2	2	5
12132	15	45	88	3	2	1	23
A-223	21	46	85	3	2	1	24
A-227	24	47	90	3	2	1	14
A-230	22	47	88	3	2	2	33
A-231	17	46	90	3	2	2	38
A-234	19	48	75	3	3	1	22
A-235	18	38	53	3	2	1	23
OK60111	16	41	95	3	3	1	5
NB66497	21	44	33	2	3	2	35
TX61A58	25	47	85	2	2	2	4
TX62C436	22	42	88	3	2	2	4
TX62A4793-7	19	38	70	3	2	3	30
TX62A2607-6	17	39	23	3	3	2	19
C0652363	21	46	65	3	2	2	14
TX65A1682	18	38	23	3	2	2	27
KS6728	22	45	30	3	2	2	33
14000	6-2	44	68	3	2	2	28

^{1/} Ratings on 1-5 scale; 1 best.

Ames, Iowa
Three replications

C. I. or Sel. No.	Winter survival	Leaf rust
	%	%
1442	52	30
8856	63	50
11673	50	45
13996	80	35
NB66403	53	40
NB66404	48	40
NB66425	57	Tr
12132	62	35
A-223	68	20
A-227	45	25
A-230	77	15
A-231	78	30
A-234	6	20
A-235	87	20
OK60111	75	40
NB66497	34	55
Tx61A58	37	Tr
Tx62C436	7	Tr
Tx62A4793-7	22	35
Tx62A2607-6	34	30
Go652363	87	35
Tx65A1682	62	40
KS6728	60	35
14000	38	45

Lind, Washington
Four replications

C.I. or Sel. No.:	Date	Plant	Winter
	: headed	: height	: survival
	May	In.	%
1442	31	27	79
8856	22	26	55
11673	23	27	61
13996	22	25	71
NB66403	24	25	73
NB66404	24	26	64
NB66425	26	23	63
12132	24	22	25
A223	25	26	59
A227	26	27	64
A230	24	27	75
A231	23	25	64
A234	26	25	40
A235	22	27	71
OK60111	22	24	63
NB66497	21	24	63
TX61A58	30	23	45
TX62C436	27	23	35
TX62A4793-7	27	20	31
TX62A2607-6	24	19	48
CO652363	24	25	74
TX65A1682	25	21	55
KS6728	22	24	61
14000	29	28	88

Summary of SRPN Yields

Grain yields at cooperating stations, state averages and ranks, and regional average yields are summarized for varieties and hybrids in the SRPN in table 2. Yields in kilograms per hectare are reported in table 3 -- this in anticipation of eventually reporting yield and agronomic data in metric units only. Consistent with its performance in 1968, NB66425 exhibited high productivity and unusually broad adaptation throughout the region. It ranked first in yield among nursery entries in Texas, Oklahoma, Kansas, and Colorado and was no lower than third in any of the 8 reporting states. The average yield advantage of NB66425 over Scout 66, the second-most productive variety, was a substantial 4.2 bushels per acre. NB66403, Kansas Scout Selection 6728, and NB66497 in that order were the next most productive varieties on the average. A235 and A227 were the most productive of 6 DeKalb Hybrids in the SRPN.

Summaries of 2-year average yields in bushels per acre and kilograms per hectare for 14 varieties grown in the SRPN in 1968 and 1969 appear in tables 4 and 5. NB66425 has a 2-year yield advantage of 3.6 bushels per acre over NB66403, the second-ranked variety. Scout 66 and NB66404 rank 3rd and 4th respectively on a 2-year basis. Danne Sel. OK60111 has a substantial 2-year yield advantage over Triumph (4.8 bushels).

Summary of Agronomic Data

Agronomic data for 24 varieties and hybrids in the 1969 SRPN are summarized in table 6. Varieties are arranged in the table in descending order of test weight. The best leaf rust resistance was shown by TX61A58. As a group the Nebraska varieties exhibited the highest resistance to stem rust. NB66425, Scout 66 and NB66497 were the most resistant to mildew. The semi-dwarf experimentals TX62A2607-6 and TX65A1682 lodged the least. CO652363 and NB66425 had slightly the highest bushel weights on the average. CO652363 was the only variety with resistance to the GP strain of Hessian fly although TX65A1682, TX62A4793-7, and Comanche were classified as segregating in greenhouse tests at Lafayette, Indiana. No variety was resistant to the B strain of fly.

Table 2.--Summary of average yields in bushels per acre made by 24 varieties grown in the Southern Regional Performance Nursery in 21 trials in 1969 with state averages and rank.

Variety	C.I. or Sel. No.	Texas				New Mexico			
		Ben- ton	Chilli- cothe	Aver- age	Rank	Clovis: irrig.	Clovis: dryl.	Aver- age	Rank
Ky58/2/Nth/3/Hope/2*Tk/4/Cnn/5/Pkr	NB66425	46.7	38.3	42.5	1	61.4	28.0	44.7	3
Scout 66	13996	39.6	34.0	36.8	4	41.0	26.5	33.8	17
Pn/Cnn/3/Pn/2/Ky58/4/Cnn	NB66403	33.2	30.0	31.6	15	45.8	28.6	37.2	14
Scout Selection	KS6728	38.2	36.0	37.1	3	62.8	21.6	42.2	5
Ky58/5/Nth/6/Cnn/Tm/3/Mi/2/Hope/7/Pn/4/Cnn/8/Om	NB66497	34.1	30.8	32.5	11	55.4	23.8	39.6	10
Danne 15B4	OK60111	33.9	33.8	33.9	10	59.7	23.6	41.7	6
Wrr/6/Ky58/4/Nth/5/Cnn/Tm/3/Mi/2/Hope/7/Pkr	CO652363	35.1	29.3	32.2	12	58.0	23.9	41.0	7
Pn/Cnn/3/Pn/2/Ky58/4/Cnn	NB66404	34.5	28.6	31.6	15	50.7	26.8	38.8	12
Nrn16/C:I.12500//Bsn	TX65A1682	41.9	34.5	38.2	2	64.5	17.2	40.9	8
TX391-56-D1-8/Triumph	TX62A2607-6	35.5	36.1	35.8	5	70.6	23.2	46.9	2
TX391-56-D1-8/Tascosa	TX62A4793-7	32.6	36.1	34.4	8	69.8	26.0	47.9	1
Bowie/Quanah//Tascosa	TX61A58	36.3	33.1	34.7	6	45.4	21.5	33.5	18
DeKalb Hybrid	A235	30.7	27.2	29.0	21	58.0	21.0	39.5	11
Agent/Tascosa	TX62C436	45.5	23.0	34.3	9	59.4	25.1	42.3	4
DeKalb Hybrid	A227	35.3	28.6	32.0	14	43.2	21.9	32.6	20
Comanche	11673	32.3	27.0	29.7	20	45.3	22.6	34.0	16
DeKalb Hybrid	A230	39.9	34.3	32.1	13	45.4	16.6	31.0	22
Triumph	12132	34.8	27.1	31.0	17	47.2	16.8	32.0	21
Early Blackhull	8856	31.8	29.5	30.7	19	57.6	19.0	38.3	13
DeKalb Hybrid	A223	40.1	28.8	34.5	7	46.8	19.4	33.1	19
Winoka	14000	25.4	22.4	23.9	24	52.4	27.2	32.8	9
DeKalb Hybrid	A234	37.1	24.5	30.8	18	36.0	17.8	26.9	24
Kharkof	1442	26.9	27.3	27.1	22	41.1	29.1	35.1	15
DeKalb Hybrid	A231	26.9	22.4	24.7	23	48.3	11.0	29.7	23

Table 2.--(Continued)

	: Oklahoma					: Illinois				: Kansas				: Nebraska			
C.I. or	:Chero-	:Wood-	:Still-	:Aver-	:Rank:	:Ur-	:Rank:	:Colby:	:Garden:	:Man-	:Hays:	:Aver-	:Rank:	:North	:Alli-	:Aver-	:Rank
Sel. No.	: kee	:ward	:water	:age	:	:bana:	:	: City	:hattan:	:age	:	:Platte:	:ance	:age	:	:	:
NB66425	38.0	63.9	64.5	55.5	1	65.9	2	31.7	58.4	35.5	39.0	41.2	1	43.1	23.6	33.4	2
13996	45.8	56.9	53.3	52.0	5	61.5	4	35.3	54.4	30.1	41.9	40.4	2	42.9	23.3	33.1	3
NB66403	44.9	47.3	47.3	46.5	16	62.4	3	33.1	55.5	23.8	38.3	37.7	4	47.5	23.7	35.6	1
KS6728	39.1	55.1	54.5	49.6	11	55.6	14	31.9	59.0	26.6	44.0	40.4	2	39.5	19.7	29.6	10
NB66497	47.5	58.3	58.4	54.7	2	58.2	10	31.5	53.7	27.8	37.2	37.6	5	40.1	20.8	30.5	8
OK60111	36.3	64.4	54.3	51.7	7	58.2	10	28.7	56.1	21.3	40.7	36.7	7	35.1	18.8	27.0	14
CO652363	37.3	56.6	58.6	50.8	8	60.6	5	27.5	54.9	24.9	36.5	36.0	9	37.5	16.8	27.2	13
NB66404	42.9	49.6	50.4	47.6	15	60.6	5	31.5	54.8	24.3	38.1	37.0	6	40.3	24.1	32.2	4
TX65A1682	51.9	59.4	51.9	54.4	3	58.6	8	28.1	51.8	19.8	45.9	36.4	8	33.2	14.9	24.1	18
TX62A2607-6	42.6	63.1	55.5	53.7	4	60.2	7	25.3	50.0	10.5	42.3	32.0	18	28.7	15.5	22.1	22
TX62A4793-7	41.3	53.8	56.1	50.4	9	67.0	1	29.1	57.1	6.9	31.2	31.1	19	30.6	15.6	23.1	19
TX61A58	45.0	50.5	53.5	49.7	10	58.0	12	29.4	54.9	9.0	43.4	34.2	11	37.0	19.8	28.4	11
A235	43.5	56.8	55.6	52.0	5	58.3	9	27.8	51.3	22.5	35.7	34.3	10	36.6	20.0	28.3	12
TX62C436	40.5	52.0	53.5	48.7	13	55.4	15	26.5	52.6	17.8	26.7	30.9	20	29.4	15.3	22.4	21
A227	34.3	49.8	44.4	42.8	22	57.9	13	27.9	56.9	17.5	34.6	34.2	11	43.6	20.2	31.9	6
11673	40.3	54.4	50.5	48.4	14	54.7	17	29.8	49.6	19.1	32.9	32.9	15	38.7	21.4	30.1	9
A230	39.0	51.3	44.9	45.1	18	54.8	16	21.8	53.1	18.6	37.5	32.8	16	37.0	15.5	26.3	16
12132	33.0	60.5	53.6	49.0	12	38.3	24	26.0	51.2	19.0	40.7	34.2	11	30.8	15.4	23.1	19
8856	36.4	48.0	47.3	43.9	21	48.8	21	25.8	46.2	9.3	38.5	30.0	23	35.0	18.6	26.8	15
A223	37.3	49.8	47.4	44.8	19	51.8	20	25.8	43.4	19.6	34.3	30.8	21	31.6	17.2	24.4	17
14000	32.3	38.1	38.1	36.2	23	52.4	19	30.7	48.9	21.6	29.7	32.7	17	41.5	22.9	32.2	4
A234	30.8	57.4	44.3	44.2	20	46.9	22	25.2	44.4	21.3	29.4	30.1	22	30.6	11.2	20.9	23
1442	37.3	38.0	32.0	35.8	24	54.4	18	26.8	42.8	17.4	24.4	27.9	24	41.5	21.5	31.5	7
A231	31.8	51.9	52.0	45.2	17	46.9	22	23.8	48.0	22.0	38.7	33.1	14	25.6	8.2	16.9	24

Table 2.--(Concluded)

C.I. or Sel. No.	Colorado								:So. Dakota :			21-
	:Yellow:	Fort	:Julesburg:	Burlington:	Springfield:	Akron:	Average:	Rank:	Presho:	Rank:	Trial	
	:Jacket:	Collins:	:	:	:	:	:	:	:	:	Average	
NB66425	19.4	97.2	54.6	45.1	51.5	59.5	54.6	1	45.9	3	48.1	
13996	18.0	87.9	56.5	40.5	38.9	53.1	49.2	3	40.7	5	43.9	
NB66403	20.2	94.5	56.4	41.7	45.1	54.1	52.0	2	46.0	2	43.8	
KS6728	15.2	82.6	48.3	38.8	34.3	49.1	44.7	14	42.1	4	42.6	
NB66497	12.9	84.2	48.5	38.6	36.4	54.8	45.9	9	39.6	7	42.5	
OK60111	14.5	90.3	51.9	32.4	42.3	52.0	47.2	5	39.9	6	42.3	
CO652363	15.5	88.5	53.8	37.3	40.4	50.6	47.7	4	38.6	8	42.0	
NB66404	16.1	81.4	50.8	37.4	42.6	50.5	46.5	8	37.7	9	41.6	
TX65A1682	14.8	73.0	48.4	40.9	35.9	56.0	44.8	11	27.7	20	41.4	
TX62A2607-6	10.9	86.5	48.8	34.8	35.3	52.8	44.9	10	33.3	15	41.0	
TX62A4793-7	11.6	77.3	53.1	31.7	37.1	45.8	42.8	15	47.0	1	40.8	
TX61A58	13.8	85.8	50.8	37.6	40.5	52.5	46.8	6	33.0	17	40.5	
A235	16.3	80.5	54.0	35.5	35.4	47.3	44.8	11	32.3	19	40.3	
TX62C436	16.2	100.3	43.2	33.9	37.2	50.0	46.8	6	32.8	18	39.8	
A227	18.0	80.1	43.0	37.6	37.9	51.9	44.8	11	36.5	11	39.1	
11673	15.4	77.9	43.5	34.3	38.4	43.4	42.2	17	37.3	10	38.5	
A230	13.2	75.5	52.5	35.1	32.9	44.4	42.3	16	26.9	22	37.2	
12132	14.4	76.8	45.1	29.0	34.9	46.6	41.1	18	27.5	21	36.6	
8856	12.5	68.5	42.0	28.9	32.5	43.5	38.0	21	33.3	15	35.9	
A223	13.9	65.4	43.4	32.4	33.5	39.3	38.0	21	33.7	14	35.9	
14000	14.2	72.9	36.4	33.0	33.5	46.2	39.4	20	34.1	13	35.9	
A234	12.3	75.6	48.0	35.4	30.2	45.0	41.1	18	26.1	23	34.7	
1442	16.1	52.7	36.5	29.1	30.5	42.9	34.6	24	34.7	12	33.5	
A231	9.3	71.2	44.2	24.8	23.0	40.5	35.5	23	23.8	24	33.1	

Table 3.--Summary of average yields in kilograms per hectare made by varieties grown in the Southern Regional Performance Nursery in 1969.

Variety	:CI or Sel.No.:	Texas			New Mexico		
		Denton:	Chillicothe:	Average:	Clovis:	Clovis:	Average
					Irrig.:	Dryl.:	
Ky58/2/Nth/3/Hope/2*Tk/4/Cnn/5/Pkr	NB66425	3140	2575	2858	4128	1882	3005
Scout 66	13996	2662	2286	2474	2756	1782	2269
Pn/Cnn/3/Pn/2/Ky58/4/Cnn	NB66403	2232	2017	2125	3079	1923	2501
Scout Selection	KS6728	2568	2420	2494	4222	1452	2837
Ky58/5/Nth/6/Cnn/Tm/3/Ml/2/Hope/7/Pn/4/Cnn/8/Om	NB66497	2293	2071	2182	3725	1600	2663
Danne 15B4	OK60111	2279	2272	2276	4014	1587	2801
Wrr/6/Ky58/4/Nth/5/Cnn/Tm/3/Ml/2/Hope/7/Pkr	CO652363	2360	1970	2165	3899	1607	2753
Pn/Cnn/3/Pn/2/Ky58/4/Cnn	NB66404	2319	1923	2121	3409	1802	2606
Nrn 16/CI 12500//Bsn	TX65A1682	2817	2319	2568	4330	1156	2746
TX 391-56-D1-8/Triumph	TX62A2607-6	2387	2427	2407	4746	1560	3153
TX 391-56-D1-8/Tascosa	TX62A4793-7	2192	2427	2310	4693	1748	3221
Bowie/Quanah//Tascosa	TX61A58	2440	2225	2333	3052	1445	2249
DeKalb Hybrid	A235	2064	1829	1947	3899	1412	2656
Agent/Tascosa	TX62C436	3059	1546	2303	3993	1687	2840
DeKalb Hybrid	A227	2373	1923	2148	2904	1472	2188
Comanche	11673	2172	1815	1994	3046	1519	2283
DeKalb Hybrid	A230	2682	1634	2158	3052	1116	2084
Triumph	12132	2340	1822	2081	3173	1129	2151
Early Blackhull	8856	2138	1983	2061	3872	1277	2575
DeKalb Hybrid	A223	2696	1936	2316	3146	1304	2225
Winoka	14000	1708	1504	1606	3523	1829	2676
DeKalb Hybrid	A234	2494	1647	2071	2420	1197	1809
Kharkof	1442	1808	1835	1822	2763	1956	2360
DeKalb Hybrid	A231	1808	1506	1657	3247	740	1994

Table 3.--(continued)

C. I. or Sel. No.	Oklahoma				Illinois		Kansas			
	Cherokee	Woodward	Stillwater	Average	Urbana	Colby	Garden City	Manhattan	Hays	Average
NB66425	2555	4296	4336	3729	4430	2131	3926	2387	2622	2752
I3996	3079	3825	3583	3496	4135	2373	3657	2024	2817	2718
NB66403	3019	3180	3180	3126	4195	2225	3731	1600	2575	2533
KS6728	2629	3704	3664	3332	3738	2145	3967	1788	2958	2715
NB66497	3193	3920	3926	3680	3913	2118	3610	1869	2501	2525
OK60111	2440	4330	3651	3474	3913	1930	3772	1432	2736	2468
CO652363	2508	3805	3940	3418	4074	1849	3691	1674	2454	2417
NB66404	2884	3335	3388	3202	4074	2118	3684	1634	2561	2499
TX65A1682	3489	3993	3489	3657	3940	1889	3483	1331	3086	2447
TX62A2607-6	2864	4242	3731	3612	4047	1701	3361	706	2844	2153
TX62A4793-7	2777	3617	3772	3389	4504	1956	3839	464	2098	2089
TX61A58	3025	3395	3597	3339	3899	1977	3691	605	2918	2298
A235	2925	3819	3738	3494	3920	1869	3449	1513	2400	2308
TX62C436	2723	3496	3597	3273	3725	1782	3536	1197	1795	2078
A227	2306	3348	2985	2880	3893	1876	3825	1177	2326	2301
11673	2709	3657	3395	3254	3677	2003	3335	1284	2212	2209
A230	2622	3449	3019	3030	3684	1466	3570	1250	2521	2202
12132	2219	4067	3604	3297	2575	1748	3442	1277	2736	2301
8856	2447	3227	3180	2951	3281	1735	3106	625	2588	2014
A223	2508	3348	3187	3014	3483	1735	2918	1318	2071	2011
14000	2172	2561	2561	2431	3523	2064	3288	1452	1997	2200
A234	2071	3859	2978	2969	3153	1694	2985	1432	1977	2022
1442	2508	2555	2151	2405	3657	1802	2877	1170	1640	1872
A231	2138	3489	3496	3041	3153	1600	3227	1479	2602	2227

Table 3.--(concluded).

C.I. or Sel. No.	Colorado						:So. Dak.:		Nebraska		: 21-	
	:Yellow:	Fort	:Jules-:	Burling-:	Spring:	Akron	:Average:	Presho	: North	:Alliance:	Average:	Trial
	:Jacket:	Collins:	burg	: ton	:field :	:	:	:	: Platte :	:	:	:Average
NB66425	1304	6535	3671	3032	3462	4000	3667	3086	2898	1587	2243	3237
13996	1210	5910	3798	2723	2615	3570	3304	2736	2884	1566	2225	2954
NB66403	1358	6353	3792	2803	3032	3637	3496	3093	3193	1593	2393	2943
KS6728	1022	5553	3247	2609	2306	3301	3006	2830	2656	1324	1990	2862
NB66497	867	5661	3261	2595	2447	3684	3086	2662	2696	1398	2047	2858
OK60111	975	6071	3489	2178	2844	3496	2593	2682	2360	1264	1812	2844
CO652363	1042	5950	3617	2508	2716	3402	3206	2595	2521	1129	1825	2824
NB66404	1082	5473	3415	2514	2864	3395	3124	2535	2709	1620	2165	2797
TX65A1682	995	4908	3254	2750	2414	3765	2387	1862	2232	1002	1617	2786
TX62A2607-6	733	5815	3281	2340	2373	3550	3015	2239	1930	1042	1486	2758
TX62A4793-7	780	5197	3570	2131	2494	3079	2875	3160	2057	1049	1553	2743
TX61A58	928	5768	3415	2528	2723	3530	3149	2219	2488	1331	1910	2724
A235	1096	5412	3630	2387	2380	3180	3014	2172	2461	1345	1903	2710
TX62C436	1089	6743	2904	2279	2501	3362	3146	2205	1977	1029	1503	2677
A227	1210	5385	2891	2528	2548	3489	3009	2454	2931	1358	2145	2629
11673	1035	5237	2925	2306	2582	2918	2834	2508	2602	1439	2021	2589
A230	887	5076	3530	2360	2212	2985	2842	1808	2488	1042	1765	2498
12132	968	5163	3032	1950	2346	3133	2765	1849	2071	1035	1553	2461
8856	840	4605	2824	1943	2185	2925	2554	2239	2353	1250	1802	2411
A223	934	4397	2918	2178	2252	2642	2554	2266	2124	1156	1640	2403
14000	955	4901	2447	2219	2252	3106	2647	2293	2790	1540	2165	2414
A234	827	5083	3227	2380	2030	3025	2762	1755	2057	753	1405	2335
1442	1082	3543	2454	1956	2051	2884	2329	2333	2790	1445	2118	2250
A231	625	4787	2972	1667	1546	2723	2387	1600	1721	551	1136	2223

Table 4.--Summary of 2-year average yields for 14 varieties grown in the Southern Regional Performance Nursery in 19 trials in 1968 and 1969 with state averages and rank.

Variety	: C.I. or Sel.No.:	: Oklahoma				: Illinois		
		Cherokee	Stillwater	Woodward	Average	Rank	Urbana	Rank
Ky58/2/Nth/3/Hope/2*Tk/4/Cnn/5/Pkr	NB66425	39.1	59.2	58.3	52.2	1	61.6	1
Pn/Cnn/3/Pn/2/Ky58/4/Cnn	NB66403	43.2	43.2	48.3	44.9	11	61.0	2
Scout 66	13996	41.3	47.6	50.8	46.6	8	58.0	5
Pn/Cnn/3/Pn/2/Ky58/4/Cnn	NB66404	42.6	47.3	51.5	47.1	7	59.0	4
Wrr/6/Ky58/4/Nth/5/Cnn/Tm/3/Mi/2/Hope/7/Pkr	CO652363	40.1	51.0	54.2	48.4	5	57.2	6
Danne 145B4	OK60111	38.5	48.5	59.9	49.0	3	60.0	3
TX391-56-D1-8/Triumph	TX62A2607-6	40.8	52.6	54.8	49.4	2	56.3	8
Bowie/Quanah//Tascosa	TX61A58	47.0	52.3	47.5	48.9	4	51.4	10
TX391-56-D1-8/Tascosa	TX62A4793-7	39.6	52.9	52.2	48.2	6	56.5	7
Agent/Tascosa	TX62C436	40.3	50.5	48.3	46.4	10	45.6	13
Comanche	11673	39.8	47.5	52.2	46.5	9	53.2	9
Triumph	12132	32.8	48.4	51.0	44.1	12	44.5	14
Early Blackhull	8856	37.7	41.1	44.0	40.9	13	49.5	12
Kharkof	1442	28.6	27.8	28.9	28.8	14	50.2	11

Table 4.--(continued)

C.I. or Sel. No.	Texas				New Mexico				Kansas				
	Denton	Chillicothe	Average	Rank	Clovis	Clovis	Average	Rank	Colby	Hays	Manhattan	Average	Rank
irrig. dryl.													
NB66425	42.2	38.2	40.2	1	75.7	20.8	48.3	1	17.9	42.4	45.2	35.2	1
NB66403	25.6	26.3	26.0	12	61.6	21.3	41.5	7	20.3	44.2	39.2	34.6	2
13996	31.6	33.2	32.4	5	56.5	18.5	37.5	10	21.0	41.6	40.6	34.4	3
NB66404	26.2	25.7	26.0	12	64.8	19.8	42.3	5	18.9	41.0	38.6	32.8	4
CO652363	31.0	29.2	30.1	6	66.9	16.4	41.6	6	16.6	39.2	38.1	31.3	6
OK60111	28.0	28.6	28.3	8	66.6	15.0	40.8	8	16.6	39.2	39.3	31.7	5
TX62A2607-6	29.3	37.6	33.5	3	73.8	14.4	44.1	3	15.0	42.4	29.4	28.9	9
TX61A58	33.3	34.6	34.0	2	57.3	15.8	36.6	11	16.2	38.4	32.7	29.1	8
TX62A4793-7	23.2	35.4	29.3	7	76.0	18.3	47.2	2	16.1	34.2	28.7	26.3	13
TX62C436	40.4	26.5	33.5	3	67.5	18.9	43.2	4	13.3	30.8	30.3	24.8	14
11673	27.7	27.3	27.5	9	62.1	16.0	39.1	9	17.3	33.2	34.4	28.3	10
12132	26.9	25.3	26.1	11	54.8	11.3	33.1	14	15.0	38.6	34.3	29.3	7
8856	27.0	26.5	26.8	10	58.2	12.9	35.6	12	16.1	38.2	27.4	27.2	11
1442	21.3	24.6	24.8	14	51.9	18.5	35.2	13	17.6	31.2	30.6	26.5	12

Table 4.--(concluded).

C.I. or Sel. No.	Colorado								Nebraska	So. Dak.	19-		
	Akron:	Burling-	Jules-	Fort	Spring-	Yellow:	Average:	Rank:	North	Rank:	Presho:	Rank:	Station
	: ton	: burg	: Collins:	field	: Jacket:				: Platte:				: Average
NB66425	40.0	40.4	47.5	91.8	40.1	18.4	46.4	1	40.3	5	48.8	1	45.7
NB66403	36.7	39.8	49.4	95.6	37.0	15.5	45.7	2	44.0	1	48.5	2	42.1
13996	37.9	33.3	47.0	91.5	28.2	15.1	42.2	3	40.8	2	43.3	3	40.9
NB66404	34.3	37.7	46.0	85.3	34.6	14.1	42.0	4	40.7	3	39.8	6	40.4
CO652363	34.6	36.4	46.2	83.1	32.9	14.3	41.3	5	36.0	8	41.4	5	40.3
OK60111	36.9	31.9	45.1	90.2	30.7	12.5	41.2	7	34.6	9	--	-	40.1 ^{1/}
TX62A2607-6	37.8	35.2	42.2	87.7	31.3	9.7	40.7	8	30.9	12	39.2	7	40.0
TX61A58	37.2	36.6	45.3	80.9	35.3	12.4	41.3	5	38.1	6	38.4	9	39.5
TX62A4793-7	31.6	32.0	45.7	79.8	30.9	13.1	38.9	10	29.7	13	43.2	4	38.9
TX62C436	36.5	24.3	39.5	97.5	27.9	14.8	40.1	9	29.4	14	32.6	13	37.6
11673	30.6	30.4	38.8	77.2	30.1	12.8	36.7	11	36.1	7	38.9	8	37.1
12132	35.6	27.9	40.7	77.9	24.4	13.1	36.6	12	33.1	11	34.3	12	35.3
8856	33.7	31.4	39.6	73.7	24.5	13.4	36.1	13	33.5	10	37.5	10	35.0
1442	31.3	31.4	36.5	63.5	26.5	14.3	33.9	14	40.6	4	35.5	11	32.1

^{1/} 18-station average

Table 5.--Summary of 2-year average yields in kilograms per hectare made by varieties grown in the Southern Regional Performance Nursery in 1968 and 1969.

Variety	C.I. or Sel. No.	Texas			Oklahoma			
		Denton	Chilli-	Average	Cherokee	Still-	Woodward	Average
			cothe			water		
Ky58/2/Nth/3/Hope/2*Tk/4/Cnn/5/Pkr	NB66425	2837	2568	2702	2629	3980	3920	3510
Pn/Cnn/3/Pn/2/Ky58/4/Cnn	NB66403	1721	1768	1745	2904	2904	3247	3018
Scout 66	13996	2124	2222	2178	2777	3200	3415	3131
Pn/Cnn/3/Pn/2/Ky58/4/Cnn	NB66404	1761	1728	1745	2864	3180	3462	3169
Wrr/6/Ky58/4/Nth/5/Cnn/Tm/3/Mi/2/Hope/7/Pkr	CO652363	2084	1963	2024	2696	3429	3644	3256
Danne 145B4	OK60111	1882	1923	1903	2588	3261	4027	3292
TX 391-56-D1-8/Triumph	TX62A2607-6	1970	2528	2249	2743	3536	3684	3321
Bowie/Quanah//Tascosa	TX61A58	2239	2326	2283	3160	3516	3193	3290
TX391-56-D1-8/Tascosa	TX62A4793-7	1560	2380	1970	2662	3556	3509	3242
Agent/Tascosa	TX62C436	2716	1782	2249	2709	3395	3247	3117
Comanche	11673	1862	1835	1849	2676	3193	3509	3126
Triumph	12132	1808	1701	1755	2205	3254	3429	2963
Early Blackhull	8856	1815	1782	1799	2535	2763	2958	2752
Kharkof	1442	1432	1654	1543	1923	1869	1943	1918

Table 5.--(continued).

C.I. or Sel. No.	Colorado							Nebraska
	Akron	Burlington	Julesburg	Fort Collins	Springfield	Yellow Jacket	Average	North Platte
NB66425	2689	2716	3193	6172	2696	1237	3117	2709
NB66403	2467	2676	3321	6427	2488	1042	3070	2958
13996	2548	2239	3160	6152	1896	1015	2835	2743
NB66404	2306	2535	3093	5735	2326	948	2824	2736
CO652363	2326	2447	3106	5587	2212	961	2773	2420
OK60111	2481	2145	3032	6064	2064	840	2771	2326
TX62A2607-6	2541	2366	2837	5896	2104	652	2733	2077
TX61A58	2501	2461	3046	5439	2373	834	2637	2561
TX62A4793-7	2124	2151	3072	5365	2077	881	2612	1997
TX62C436	2454	1634	2656	6555	1876	995	2695	1977
11673	2057	2044	2609	5190	2024	861	2464	2427
12132	2393	1876	2736	5237	1640	881	2461	2225
8856	2266	2111	2662	4955	1647	901	2424	2252
1442	2104	2111	2454	4269	1782	961	2280	2730

Table 5.--(concluded).

Variety	New Mexico			So. Dak.		Illinois		Kansas		19-Station
	Clovis	Clovis	Average	Presho	Urbana	Colby	Hays	Manhattan	Average	Average
	irrig.	dryl.								
NB66425	5089	1398	3244	3281	4141	1203	2851	3039	2364	3071
NB66403	4141	1432	2787	3261	4101	1365	2972	2635	2324	2833
13996	3798	1244	2521	2911	3899	1412	2797	2730	2313	2752
NB66404	4357	1331	2844	2676	3967	1271	2756	2595	2207	2717
CO652363	4498	1103	2801	2783	3846	1116	2635	2561	2104	2706
OK60111	4478	1008	2743	--	4034	1116	2635	2642	2131	2697 ^{1/}
TX62A2607-6	4962	968	2965	2635	3785	1008	2851	1977	1945	2691
TX61A58	3852	1062	2457	2582	3456	1089	2582	2198	1956	2656
TX62A4793-7	5109	1230	3170	2904	3798	1082	2299	1930	1770	2615
TX62C436	4538	1271	2905	2192	3066	894	2071	2037	1667	2530
11673	4175	1076	2626	2615	3577	1163	2232	2313	1903	2497
12132	3684	760	2222	2306	2992	1008	2595	2306	1970	2370
8856	3913	867	2395	2521	3328	1082	2568	1842	1831	2356
1442	3973	1244	2609	2387	3375	1183	2098	2057	1779	2187

^{1/} 18-station average

Table 6 -- Summary of agronomic data other than yield for varieties grown in the Southern Regional Performance Nursery in 1969.

Pedigree	: C.I. or : Sel. No. :	: Date		: Plant: : height: :	: Rust		: Mildew: : : :	: Winter: : surv-: : ival:	: Lodg-: : ing :	: Wt/ : bushel :					
		: headed:	: ripe:		: leaf:	: stem:									
		May	June	in.	%	%	%	%	%	lbs.					
Number of stations -----		20	6	25	10	2	2	4	3	22					
Wrr/6/Ky58/4/Nth/5/Cnn/Tm/3/ Mi/2/Hope/7/Phr	C0652363	18	28	34	31	4	18	96	24	61.0					
Ky58/2/Nth/3/Hope/2*Tk/4/Cnn/5/Pkr	NB66425	17	25	34	21	2	0	88	44	60.9					
Bowie/Quanah//Tascosa	TX61A58	18	27	36	1	11	3	83	32	60.8					
DeKalb Hybrid	A235	15	24	36	49	43	25	91	44	60.8					
Scout 66	13996	16	25	35	43	6	0	94	39	60.7					
Triumph	12132	13	23	35	61	21	13	87	48	60.4					
Winoka	14000	24	30	37	48	13	30	84	25	60.3					
DeKalb Hybrid	A227	18	26	37	48	32	15	84	41	60.3					
Early Blackhull	8856	13	23	36	52	17	18	87	56	60.2					
DeKalb Hybrid	A234	16	24	37	59	17	23	72	45	60.2					
Danne 145B4	OK60111	14	23	35	56	23	30	93	59	60.1					
DeKalb Hybrid	A230	18	26	36	37	32	30	94	33	60.1					
Agent x Tascosa	TX62C436	16	26	35	0.2	10	15	64	40	60.0					
DeKalb Hybrid	A223	17	25	37	49	35	20	91	40	59.9					
Nrn16/C.I.12500//Bsn	TX65A1682	14	24	29	57	35	30	84	9	59.9					
Scout Selection	KS6728	17	25	34	56	10	15	89	12	59.9					
Pn/Cnn/3/Pn/2/Ky58/4/Cnn	NB66404	18	27	36	63	5	18	86	32	59.7					
DeKalb Hybrid	A231	15	25	35	55	24	18	92	43	59.7*					
Ky58/5/Nth/6/Cnn/Tm/3/Mi/2/Hope/ 7/Pn/4/Cnn/8/Om	NB66497	16	25	34	64	3	3	81	17	59.5					
Comanche	11673	18	26	37	52	30	20	87	46	59.4					
Pn/Cnn/3/Pn/2/Ky58/4/Cnn	NB66403	19	27	36	58	4	20	83	32	59.4					
TX391-56-D1-8/ Triumph	TX62A2607-6	15	24	30	32	31	30	76	8	59.3					
Kharkof	1442	23	28	38	46	33	23	87	30	58.7					
TX391-56-D1-8/Tascosa	TX62A4793-7	16	25	31	46	24	23	73	26	57.0					

* Average based on one less station than indicated; Yellow Jacket missing.

NORTHERN REGIONAL PERFORMANCE NURSERY

Thirty-four varieties and hybrids were evaluated in 1969. There were 16 replicated nurseries in 8 states and Alberta, Canada. Observation plots were grown at Mead, Nebraska; Brookings, South Dakota; and Aberdeen, Idaho. Agronomic and yield data were reported from 13 nurseries. Observation plots at Mead, Nebraska, were lost during the winter from standing water and ice cover. Data were not reported from Brookings. Birds completely destroyed the nursery during ripening at Dickinson, North Dakota. Heavy rabbit feeding in late fall and early winter resulted in sufficiently heavy loss of stands for abandonment of the NRPN at Sidney, Nebraska. A mid-June freeze completely sterilized the wheat at Moccasin, Montana and the nursery was abandoned. Entries in the 1969 NRPN are listed. Agronomic and yield data appear in table 7.

<u>Entry No.</u>	<u>Pedigree</u>	<u>C.I.or Sel.No.</u>	<u>Source</u>
1	Kharkof	1442	Check
2	Warrior	13190	"
3	Winalta	13670	"
4	Trader	13998	Nebr.
5	Trapper	13999	"
6	Sk/2* Cnn	NB64365	"
7	Ky58/5/Nth/6/Cnn/2/Rm/3/Ml/Hope/7/Pn/4/- Cnn/8/Wrr	NB66490	"
8	Sk/2* Cnn	NB64334	"
9	Sk/3* Cnn	NB64308	"
10	Winoka	14000	So.Dak.
11*	NB60258/NB61983	SD6687	" "
12*	do.	SD6689	" "
13*	Wrr 2*/III-54-12	SD66117	" "
14*	SD 56-497-3-0-0	SD66166	" "
15*	SD 56-497-6-0-0	SD66167	" "
16*	SD 56-497-7-0-0	SD66168	" "
17*	Pnc/3*Cnn//NB61981	SD66169	" "
18*	do.	SD66171	" "
19*	Pnc/3*Cnn//NB61977	SD66173	" "
20*	do.	SD66174	" "
21*	do.	SD66176	" "
22	Froid (BWH 1904-7)	13872	Mont.
23	NT-2/Cnn 2-8-9-3	MT6326	"
24	Yogo/Cnn 12-4-2	MT6320	"
25	Selected Bulk 2-77	MT6319	"
26*	DeKalb Hybrid	A220	DeKalb
27*	" "	A222	" "
28*	" "	A225	" "
29*	" "	A226	" "
30*	" "	A229	" "
31*	" "	A233	" "
32*	Pn/Cnn/3/Pn/2/Ky58/4/Cnn	NB66403	Nebr.
33*	do.	NB66404	"
34*	do.	NB66408	"

* New entry in 1969

NORTHERN REGIONAL PERFORMANCE NURSERY

Data Obtained

Nebraska Stations.--Rabbits destroyed the nursery at Sidney. Water and ice during the winter resulted in the smothering of observation plots of the NRPN at Mead. Some damage in the form of sterility resulted from a mid-June freeze at Alliance. Generally excellent conditions prevailed throughout the crop season at North Platte.

Archer.--Soil moisture at seeding time was sufficient for uniform fall stand establishment. There was no winterkilling. Varieties were under some moisture stress in the spring. Straw was short and grain yields only fair. Diseases were not evident. The variety identified as NB64365 in the NRPN at Archer was clearly not that variety. All other entries in the nursery appeared to be correctly identified.

Sheridan.--Good conditions during the fall, winter, and early spring produced rank growth of varieties in the NRPN. A freeze on June 14 was accompanied by several inches of snow. In addition to some head sterility all varieties lodged with varying degrees of straw breakage. The hybrids as a group probably were more severely affected by the snow than varieties in the nursery. Some nursery entries without straw breakage recovered completely from their lodged condition following the storm and were erect at harvest time. Similar to the situation at Archer, the entry identified as NB64365 was not that variety.

South Dakota Stations.--Adequate fall stands were obtained at Presho and Highmore. Some winterkilling occurred at both locations with the highest loss at Highmore. Moisture stress developed during a relatively dry spring resulting in moderately short straw. Yields at both sites were good on the average. Leaf rust became heavy -- particularly at Presho. Stem rust was present with the heaviest infection occurring at Highmore. Susceptible stem rust pustules on here-to-fore resistant varieties were observed at both sites. The predominance of 15B-2 in the South Dakota collections suggests a probable high temperature breakdown of resistance in the varieties.

Minnesota Stations.--Nurseries were produced at St. Paul and Waseca. Winter survival was good at both sites. The crop season was cooler and much wetter than normal. Light stem rust occurred at St. Paul.

Williston.--Soil moisture was excellent at seeding time and good stands of all varieties were established. Loss of stands during the winter was generally light. Low precipitation in May and June slowed growth, reduced tillering, and induced early heading in several varieties. Sub-freezing temperatures in mid-June further set back the crop. Traces only of leaf and stem rust occurred.

Dickinson.--Birds destroyed the NRPN during the ripening period.

Moccasin.--Varieties were completely sterilized by a mid-June freeze.

Tetonia--The nursery survived the winter with good stands. A hot dry spring reduced yields and resulted in harvest approximately 2 weeks earlier than normal.

Aberdeen--Single rows of all entries for observation purposes were grown. Information of heading, height, lodging and bushel weight was reported.

Lethbridge--There was no winterkilling because of heavy and nearly continuous snow cover throughout the winter. The spring was relatively dry but in the last half of June and first week of July over 6 inches of rain was received. There was no subsequent precipitation until after harvest. Approximately 48 lbs. of N and 72 lbs. of P_2O_5 were applied in the spring. Grain yields were high.

Clovis--See SRPN for information on conditions.

Table 7.--Yield and other data for varieties grown in the Northern Regional Performance Nursery at 12 locations in 1969.

NORTH PLATTE, NEBRASKA
Three replications

C. I. or Sel. No.	Date May	Plant in.	Weight per bushel	Av. acre yield		No. years grown	Percent of Kharkof
				1968	1969		
			lbs.	bu.	bu.		
MT6326	28	37	62.3	54.8	49.4	2	103.4
NB66403	27	34	63.3	53.6	--	1	114.0
13190	27	36	63.2	52.8	48.6	6	116.5
SD6687	28	37	62.3	52.8	--	1	112.3
13999	28	35	62.9	51.5	51.7	4	115.8
NB64308	28	37	62.4	50.9	48.3	2	101.0
SD66117	28	35	63.4	50.7	--	1	107.9
NB66490	26	35	63.5	50.5	48.2	2	100.8
SD66174	28	35	62.9	50.1	--	1	106.6
NB66408	26	34	64.2	50.0	--	1	106.4
MT6320	28	38	62.4	50.0	44.6	2	93.3
SD66166	27	36	62.5	49.8	--	1	106.0
NB64365	27	36	62.5	49.7	48.5	4	112.2
NB64334	27	36	62.9	49.7	45.7	3	103.8
SD66176	27	38	63.4	49.5	--	1	105.3
13670	27	36	63.1	48.7	46.6	8	115.5
13998	28	35	62.9	48.5	47.4	4	106.1
MT6319	29	36	61.5	48.5	45.6	2	95.4
NB66404	27	35	63.1	48.5	--	1	103.2
14000	28	38	63.3	48.1	46.8	3	97.9
SD6689	28	36	62.4	47.9	--	1	101.9
SD66168	27	36	62.4	47.6	--	1	101.3
1442	29	36	61.4	47.0	47.8	11	100.0
A229	27	37	63.4	46.6	--	1	99.1
SD66171	28	37	63.4	45.8	--	1	97.4
A233	27	35	63.0	44.5	--	1	94.7
SD66173	27	38	63.4	44.1	--	1	93.8
SD66169	28	37	62.2	43.8	--	1	93.2
MT639 (13872)	30	38	61.9	43.0	37.2	3	86.9
A225	27	38	62.6	42.3	--	1	90.0
A220	27	38	63.2	41.9	--	1	89.1
A222	27	38	62.8	41.0	--	1	87.2
SD66167	27	36	62.4	40.5	--	1	86.2
A226	28	36	62.2	39.3	--	1	83.6

L. S. D. .05 = 6.3 bushels; C.V. = 8.1%

ALLIANCE, NEBRASKA
Three replications

C. I. or Sel. No.	Plant height in.	Weight per bushel lbs.	Av. acre yield 1969 bu.	No. years grown	Percent of Kharkof
NB66403	27	59.5	25.9	1	118.3
MT6326	29	61.0	25.6	1	116.9
13190	26	60.5	25.1	5	120.6
SD66117	25	60.5	24.8	1	113.2
13999	26	60.5	23.4	3	109.6
SD66167	27	60.0	23.2	1	105.9
NB64365	26	61.5	23.0	3	111.8
SD6687	28	61.5	22.8	1	104.1
SD66166	26	59.5	22.4	1	102.3
SD66168	27	60.0	22.3	1	101.8
1442	31	60.0	21.9	16	100.0
13670	27	61.5	21.7	6	108.2
NB66408	27	61.5	21.7	1	99.1
NB66404	27	60.0	21.1	1	96.3
MT639(13872)	29	60.0	20.6	1	94.1
SD66169	27	60.5	20.5	1	93.6
NB64334	26	60.5	20.4	2	107.2
A229	28	61.0	20.2	1	92.2
MT6320	28	60.5	20.1	1	91.8
SD66174	26	61.0	20.1	1	91.8
NB66490	25	59.0	19.6	1	89.5
NB64308	27	60.0	19.4	1	88.6
13998	26	60.5	19.3	3	104.7
MT6319	29	60.0	19.2	1	87.7
A222	29	59.5	19.0	1	86.8
14000	28	62.0	18.6	2	95.8
SD6689	27	59.0	18.4	1	84.0
A220	27	60.5	18.0	1	82.2
A225	27	60.0	17.7	1	80.8
SD66171	30	62.0	17.0	1	77.6
SD66176	27	61.0	17.0	1	77.6
A233	27	60.5	16.1	1	73.5
SD66173	28	61.0	14.9	1	68.0
A226	27	61.0	14.5	1	66.2

L. S. D. .05 = 5.7 bushels; C. V. = 16.9%

ARCHER, WYOMING
Three replications

C.I. or Sel. No.	Date : headed	Plant : height	Weight : per bushel	Av. acre yield : 1968- 1969	No. : years: grown	Percent of Kharkof
	June	in.	lbs.	bu.	bu.	
13998	20	31	61.4	21.9	30.6	4 109.7
13670	18	30	60.5	20.4	30.1	7 103.7
MT6326	22	33	60.2	20.3	28.9	2 94.6
NB66403	16	29	60.6	20.1	--	1 109.2
SD6689	16	32	58.4	20.1	--	1 109.2
SD66117	18	29	60.7	20.1	--	1 109.2
NB64308	19	30	60.9	19.9	32.6	2 106.7
13190	19	31	61.0	19.0	30.1	5 100.3
SD66174	19	30	60.3	18.8	--	1 102.2
SD66173	19	33	59.8	18.7	--	1 101.6
1442	20	35	59.4	18.4	30.5	13 100.0
NB64334	19	33	62.0	18.2	30.5	3 104.3
SD66176	19	31	60.3	17.8	--	1 96.7
13999	17	30	61.1	17.5	27.6	4 107.2
14000	21	32	61.3	17.5	26.9	3 96.2
SD66171	20	35	60.9	17.2	--	1 93.5
NB66404	16	28	61.3	17.1	--	1 92.9
MT6320	22	32	59.0	17.0	27.6	2 90.3
SD66168	20	33	60.2	16.1	--	1 87.5
SD6687	20	32	61.1	15.6	--	1 84.8
NB66408	17	27	61.5	15.6	--	1 84.8
SD66169	20	31	60.1	15.4	--	1 84.7
MT639 (13872)	23	32	59.9	15.3	26.4	3 91.4
NB66490	15	27	61.0	15.2	30.7	2 100.7
A229	16	29	59.3	14.8	--	1 80.4
? 1/	18	29	60.0	14.4	--	- --
SD66166	21	33	59.6	14.0	--	1 76.1
MT6319	20	31	59.7	12.9	27.1	2 88.9
SD66167	21	32	60.1	12.8	--	1 69.6
A222	15	30	59.5	12.4	--	1 67.4
A226	17	24	59.0	11.4	--	1 62.0
A233	18	29	59.1	10.7	--	1 58.2
A225	16	31	58.8	9.9	--	1 53.8
A220	15	29	--	7.7	--	1 41.9

L.S.D. .05 = 4.1 bushels; C. V. = 17.7%

1/ Not NB64365 as supposed to be. Identity unknown.

Sheridan, Wyoming
Four replications

C. I. or Sel. No.	: Date :headed:	: Plant :height:	: Lodging: %	: Weight: :bushel:	: Av. acre yield: 1969	: 1968- :1969	: No.: :grown:	: Percent :Kharkof
	June	in.		lbs.	bu.	bu.		
NB66403	5	40	0	61.1	52.3	--	1	119.7
NB66404	6	41	0	62.7	50.7	--	1	116.0
A229	8	41	5	62.1	46.2	--	1	105.7
NB66408	5	44	5	63.2	44.5	--	1	101.8
SD66117	7	38	5	62.2	44.5	--	1	101.8
1442	12	42	15	61.6	43.7	48.8	18	100.0
NB66490	6	38	10	61.8	43.5	49.8	2	102.2
MT6319	13	42	0	61.6	43.1	47.3	2	96.9
13998	12	42	0	62.2	42.7	48.6	4	101.0
13190	12	41	0	62.8	42.2	52.5	6	134.6
SD66168	8	41	10	61.4	42.2	--	1	96.6
SD66174	7	42	0	62.2	42.2	--	1	96.6
14000	11	43	0	63.3	41.9	46.0	3	95.6
NB64334	10	41	0	62.6	41.4	50.3	3	102.3
MT639(13872)	15	43	35	61.1	40.7	47.5	3	92.8
13670	9	40	5	62.5	40.5	46.3	8	121.3
NB64308	11	43	15	62.7	40.5	51.3	2	105.1
MT6326	14	42	5	62.2	40.5	44.4	2	91.1
SD6689	10	42	30	60.9	39.8	--	1	91.1
SD66166	8	42	0	61.3	39.8	--	1	91.1
13999	10	41	5	62.5	38.9	48.0	4	102.0
? 1/	7	43	10	62.6	38.9	--	-	--
MT6320	13	42	20	60.5	37.7	44.9	2	92.1
A222	4	44	15	61.4	37.6	--	1	86.0
SD6687	11	45	15	62.4	37.5	--	1	85.8
A226	3	40	10	62.5	37.1	--	1	84.9
SD66169	7	43	20	62.3	36.5	--	1	83.5
A233	5	42	50	61.5	33.0	--	1	75.5
SD66173	6	41	5	61.4	32.9	--	1	75.3
SD66176	8	40	0	61.6	31.8	--	1	72.8
SD66167	7	41	5	60.6	29.9	--	1	68.4
A220	4	39	50	61.3	27.1	--	1	62.0
SD66171	8	46	0	62.2	26.2	--	1	60.0
A225	4	40	35	60.6	24.9	--	1	57.0

L.S.D. .05 = 10.0 bushels; C. V. = 18.2%

1/ Not NB64365 as supposed to be. Identity unknown.

Presho, South Dakota
Four replications

C. I. or	Date	Plant	Rust	Wt./	Av. a	yield:	No.	Percent
Sel. No.	headed:	ripe:	ht.	leaf:	stem:	Stand:	1969:	1969:
	July	in.		%	lbz.	bu.	bu.	
SD66166	6-6	8	28	S-100	46	58	37.3	-- 1 120.3
SD6689	6-4	8	28	R-0 S-Tr	71	58	35.2	-- 1 113.5
SD6687	6-4	8	29	Mix	89	60	34.8	-- 1 112.3
13190	6-1	5	26	S-100	93	59	34.7	38.4 6 109.4
NB66404	5-30	7	26	S-100	99	59	34.0	-- 1 109.7
13999	6-4	6	25	S-100	96	59	33.5	35.4 4 101.9
NB66403	5-30	7	26	S-100	100	59	33.2	-- 1 107.1
SD66174	6-4	7	27	Mix	78	59	33.0	-- 1 106.5
SD66117	6-4	8	26	R-0	70	58	32.6	-- 1 105.2
MT6326	6-5	8	27	S-100	96	59	32.6	30.1 2 100.0
NB66408	5-31	7	25	S-100	98	60	31.9	-- 1 102.9
SD66171	6-6	8	30	MR-20	63	61	31.8	-- 1 102.6
13998	6-3	6	26	S-100	99	59	31.7	32.3 4 101.4
NB64365	6-2	8	27	S-100	83	60	31.5	35.4 4 108.4
13670	6-6	8	27	S-100	83	60	31.3	32.9 7 109.0
NB64308	6-4	8	27	S-75	85	59	31.2	36.6 2 121.8
NB64334	6-3	8	27	S-100	91	60	31.1	37.3 3 110.6
1442	6-6	8	26	S-100	95	58	31.0	30.1 7 100.0
14000	6-6	8	28	S-100	89	60	31.0	32.8 3 100.3
A225	5-30	7	30	S-100 S-1	99	58	30.9	-- 1 99.7
A229	6-1	7	28	S-100 S-1	99	60	30.8	-- 1 99.4
NB66490	5-29	6	25	S-100 S-Tr	91	59	30.6	33.2 2 110.3
MT6319	6-5	8	29	S-100	97	57	30.2	31.8 2 105.8
A220	5-30	6	29	S-100 S-1	95	59	30.1	-- 1 97.1
SD66176	6-2	8	28	M-15 S-Tr	84	59	29.8	-- 1 96.1
A222	5-30	7	30	S-100 S-5	99	58	29.8	-- 1 96.1
SD66173	6-1	8	27	X-5	96	60	29.7	-- 1 95.8
SD66168	6-5	8	28	S-100	33	58	29.5	-- 1 95.2
MT6320	6-6	8	29	S-100 S-Tr	98	59	28.5	27.1 2 90.2
MT639(13872)	6-9	9	29	S-65 S	96	57	27.7	26.8 3 87.9
SD66169	6-5	8	28	MR	91	60	27.3	-- 1 88.1
SD66167	6-5	8	30	S-100	36	57	26.6	-- 1 85.8
A226	5-31	5	28	S-100 S-1	98	59	25.8	-- 1 83.2
A233	6-1	7	29	S-100 S-1	98	58	25.0	-- 1 80.6

L.S.D. .05 = 4.7 bushels; C.V. = 10.8%

Highmore, South Dakota
Three replication

C. I. or Sel. No.	Leaf: rust:	Stem: rust:	Stand: %	Winter survival: %	Weight: per bushel: lbs.	Av. acre yield: 1968-1969 bu.	No. of years: grown:	Percent of Kharkof
13670	S	Mix	61	59	63.0	37.0	40.4	7
14000		S-20	76	44	62.6	36.4	38.7	3
MT6319		S-100	70	43	60.9	36.0	38.0	2
MT6320		S-100	84	48	61.7	36.0	36.6	2
MT639(13872)	S	R,S	59	26	61.3	35.8	36.0	3
MT6326		S-100	61	69	62.5	35.4	37.9	2
NB64334		S-tr	58	64	62.1	35.0	40.9	3
SD66169		R,S	33	64	61.5	33.9	--	1
SD66174		S-tr	63	39	61.0	33.9	--	1
SD6687		R-0	76	38	60.7	33.0	--	1
NB64365	S	R-0	74	79	61.3	32.8	40.9	4
13190	S	S-65	65	55	60.9	31.6	38.3	6
NB66403		R,S	78	25	61.3	30.2	--	1
NB66404		R-0	86	28	61.0	29.3	--	1
SD66166		S-tr	64	39	61.1	29.2	--	1
NB66408		R,S	51	33	62.4	28.7	--	1
13998	S	MS-1	79	54	60.8	28.4	35.7	4
SD66168		S-tr	43	74	61.0	28.2	--	1
NB66490	S-65	R-0	75	75	62.4	28.1	39.2	2
SD66117		R,S	66	41	61.1	27.9	--	1
1442	S	S-65	76	50	60.7	27.4	35.4	7
SD66173		R,S	53	23	60.4	26.8	--	1
13999	S	MS-1	63	44	59.5	26.4	33.3	4
SD66167		S-tr	31	60	60.8	26.2	--	1
NB64308		R-0	58	68	58.5	25.8	37.0	2
SD66176		S-10	48	74	60.4	25.8	--	1
SD6689		S-30	50	50	57.3	23.0	--	1
A225		S-100	60	26	61.0	21.3	--	1
A233		S-100	75	53	60.1	19.1	--	1
SD66171		R-0	80	49	61.0	18.8	--	1
A220		S-100	56	56	58.8	16.6	--	1
A229		S-100	79	33	59.0	16.1	--	1
A222		S-100	80	16	57.5	14.1	--	1
A226		S-100	89	33	61.5	10.6	--	1

L. S. D. .05 = 2.1 bushels; C. V. = 4.5 %

ST. PAUL, MINNESOTA
Three replications

C. I. or Sel. No.	Date headed	Stem rust	Weight per bushel	Av. acre yield 1969	No. years grown	Percent of Kharkof
	June	%	lbs.	bu.		
SD6689	3	0	62.0	45.9	1	130.0
NB66404	3	TrR	62.0	43.0	1	121.8
NB66408	3	TrR	64.0	42.4	1	120.1
MT6326	6	5S	63.0	42.3	1	119.8
A229	3	TrR	65.0	41.5	1	117.6
SD6687	4	TrR	63.0	41.2	1	116.7
NB64308	3	0	62.0	41.1	1	116.4
A222	1	TrR	64.0	41.1	1	116.4
NB64365	3	0	64.0	40.7	3	120.6
NB64334	3	0	64.5	40.3	2	113.9
NB66490	1	TrR	64.5	40.3	1	114.2
13998	4	TrR	62.5	39.5	3	104.8
SD66167	3	TrR	62.5	39.5	1	111.9
13999	4	0	61.5	38.9	3	116.4
NB66403	3	TrR	61.0	38.9	1	110.2
SD66169	3	0	62.5	38.2	1	108.2
MT6320	9	5MS-S	63.0	37.8	1	107.1
SD66117	3	0	62.5	37.3	1	105.7
SD66174	2	0	63.5	37.3	1	105.7
A220	2	TrMS	64.0	37.2	1	105.4
MT639(13872)	8	TrR	61.5	37.1	2	94.4
13670	5	TrR	63.0	36.6	6	106.0
SD66176	1	0	63.5	36.6	1	103.7
A233	2	TrR	64.5	36.6	1	103.7
1442	4	TrMS	62.5	35.3	8	100.0
SD66171	3	0	64.5	35.3	1	100.0
13190	3	10MS	61.5	34.9	5	103.4
SD66166	2	TrR	62.5	34.9	1	98.9
SD66168	2	TrR	62.0	33.7	1	95.5
MT6319	10	TrMR	62.0	33.7	1	95.5
14000	4	0	63.0	33.1	2	90.3
A226	3	TrR	62.5	32.6	1	92.4
A225	1	TrMR	63.5	32.1	1	90.9
SD66173	2	0	63.0	26.9	1	76.2

L. S. D. .05 = 6.9 bushels; C. V. = 11.1%

Waseca, Minnesota
Three replications

C. I. or Sel. No.	Date headed	Plant height	Lodging	Weight per bushel	Av. acre yield	No. years grown	Percent of Kharkof
	June				1969		
SD66176	10	41	3.0	62.5	52.4	1	170.1
A233	6	43	6.0	61.5	51.4	1	166.9
NB66403	7	44	6.0	61.0	50.7	1	164.6
SD6689	7	44	6.0	61.0	50.7	1	164.6
NB64308	11	43	5.0	61.5	49.5	1	160.7
NB66404	7	40	5.0	62.0	47.1	1	152.9
SD66169	11	46	6.0	64.0	46.5	1	151.0
NB66408	6	40	2.0	64.5	46.2	1	150.0
SD66173	10	42	5.0	63.5	45.9	1	149.0
SD66174	10	42	2.0	63.5	45.9	1	149.0
SD6687	9	46	6.0	64.5	44.8	1	145.5
SD66117	11	43	5.0	63.5	44.8	1	145.5
SD66166	9	44	4.0	62.5	43.5	1	141.2
NB64334	8	44	5.0	63.0	42.8	2	146.1
SD66167	10	43	2.0	63.5	42.0	1	136.4
A222	4	43	5.0	61.0	41.8	1	135.7
13670	11	47	5.0	63.0	41.7	6	125.1
NB66490	5	38	6.0	61.0	41.5	1	134.8
SD66171	11	47	5.0	64.5	41.3	1	134.1
NB64365	8	43	5.0	62.0	41.0	3	131.2
SD66168	10	45	4.0	64.0	40.8	1	132.5
A220	8	42	6.0	60.5	40.1	1	130.2
13998	11	43	5.0	63.0	37.8	3	114.4
14000	11	45	6.0	61.5	35.3	2	129.7
MT6326	11	43	5.0	52.0	35.2	1	114.3
A225	5	42	3.0	60.0	35.2	1	114.3
A229	6	50	5.0	59.0	35.2	1	114.3
MT6319	15	44	6.0	59.5	34.9	1	113.3
13999	11	46	6.0	61.0	34.8	3	121.1
13190	10	43	5.0	58.5	33.0	4	98.8
A226	7	46	4.0	59.5	31.5	1	102.3
1442	12	48	6.5	56.0	30.8	7	100.0
MT639(13872)	13	50	6.0	56.5	28.4	2	126.5
MT6320	15	48	6.0	53.5	26.8	1	87.0

L.S.D. .05 = 8.7 bushels; C. V. = 13.0%

Williston, North Dakota
Four replications

C. I. or Sel. No.	Date headed:	Plant ht. in.	Winter: sur- vival %	Spring: vigor	Lodg- ing %	Wt.: per: bu.	Av. a yield: 1969:1969 bu. bu.	No. years: grown:	Percent of Kharkof
MT6320	11	26	94	3.7	10	62.6	25.2	29.0	2 105.6
MT639(13872)	13	29	99	4.3	10	61.9	24.8	28.7	3 98.9
NB64365	7	27	95	3.5	0	62.8	24.8	27.1	4 93.4
MT6326	10	24	96	3.2	0	62.5	24.2	29.0	2 105.6
1442	12	28	90	3.5	20	62.3	23.3	27.5	4 100.0
13670	11	25	98	3.7	10	63.4	22.4	28.8	4 100.9
NB66490	6	24	93	3.0	30	62.1	22.4	25.5	2 92.7
MT6319	12	25	99	4.5	10	61.4	22.1	28.5	2 103.8
NB64334	12	26	96	3.2	0	62.7	21.6	24.8	3 90.2
NB64308	12	24	90	4.0	10	62.5	21.3	23.2	2 84.5
13190	10	26	84	2.7	0	62.9	20.9	22.9	4 87.6
13999	9	27	79	2.7	20	62.7	20.6	21.7	4 86.8
13998	9	24	86	2.5	10	62.6	20.0	23.6	4 90.7
SD66168	10	24	73	2.5	0	61.0	19.6	--	1 84.1
14000	10	25	98	4.0	20	63.6	19.6	24.3	3 86.9
SD66117	10	21	78	2.7	10	62.8	18.3	--	1 78.5
SD66167	9	24	79	2.5	0	61.3	18.3	--	1 78.5
SD66169	12	25	79	3.7	10	62.6	18.1	--	1 77.7
NB66403	7	22	76	2.2	30	62.1	18.1	--	1 77.7
SD66166	10	24	90	3.5	0	61.2	17.6	--	1 75.5
SD66174	7	25	76	2.7	20	62.5	17.5	--	1 75.1
A222	6	24	83	3.0	0	61.6	16.2	--	1 69.5
SD66173	7	24	79	2.7	0	62.2	15.8	--	1 67.8
SD66171	12	25	75	3.0	20	63.4	15.3	--	1 65.7
A225	6	24	79	2.7	0	61.0	14.9	--	1 63.9
NB66408	10	22	65	2.7	0	63.6	14.9	--	1 63.9
A226	6	23	84	2.7	0	61.8	14.5	--	1 62.2
SD6687	12	23	60	2.7	20	63.1	14.4	--	1 61.8
SD6689	10	24	69	2.5	40	60.3	14.1	--	1 60.5
A233	7	23	79	2.5	0	61.9	14.0	--	1 60.1
A229	7	24	74	2.5	10	62.7	14.0	--	1 60.1
SD66176	7	23	80	2.7	0	62.5	13.7	--	1 58.8
A220	7	25	76	2.2	0	61.7	11.9	--	1 51.1
NB66404	7	23	54	2.0	20	63.0	11.5	--	1 49.4

L.S.D._{.05} = 4.8 bushels; C.V. = 18.1%

1/ 1 = very poor; 5 = very good

C. I. or Sel. No.	Date headed	Plant height in.	Weight per bushel lbs.	Av. acre yield 1968-1969 bu.	No. years grown	Percent of Kharkof
13190	19	32	62.0	48.8	6	106.7
MT6320	30	36	61.7	47.4	2	106.3
13999	21	31	62.5	46.4	4	111.9
MT639	7-2	39	60.7	46.3	3	100.5
14000	28	36	62.6	46.1	3	104.7
NB64334	20	32	62.8	45.6	3	113.9
NB64308	28	33	61.8	44.7	2	118.7
NB64365	20	34	62.4	44.6	4	110.7
NB66403	28	30	61.5	43.0	1	103.1
SD6687	30	34	61.9	42.9	1	102.9
SD6689	28	34	58.7	42.8	1	102.6
SD66171	7-3	37	62.4	42.8	1	102.6
SD66169	7-3	36	61.6	42.1	1	102.0
1442	30	36	60.8	41.7	7	100.0
NB66404	28	33	61.5	41.7	1	100.0
13998	20	33	62.1	41.6	4	111.8
SD66117	21	32	62.2	41.3	1	99.0
NB66490	18	28	61.1	41.2	2	115.9
MT6319	7-2	35	60.8	41.1	2	100.9
MT6326	7-3	37	61.1	40.4	2	108.0
SD66176	30	33	61.7	39.9	1	95.7
13670	30	33	62.8	39.0	7	105.2
A229	30	37	61.4	38.5	1	92.3
SD66166	30	34	61.0	38.2	1	91.6
A226	24	34	61.3	38.0	1	91.1
A233	28	33	60.4	37.9	1	90.9
SD66174	30	33	61.7	37.4	1	89.7
NB66408	28	30	62.4	37.4	1	89.7
SD66173	30	34	61.4	37.3	1	89.4
SD66167	7-3	34	60.4	36.9	1	88.5
SD66168	30	35	61.2	35.9	1	86.1
A222	24	35	60.2	34.2	1	82.0
A220	24	34	61.1	33.2	1	79.6
A225	23	33	59.2	25.2	1	60.4

L.S.D. .05 = 8.0 bushels; C.V. = 14.0%

Aberdeen, Idaho
Single Plot

	Date June	Plant height in.	Lodging ^{1/}	Straw stiffness ^{2/}	Weight per bushel lbs.
1442	9	43	3	4	61.7
13190	5	41	2	3	62.5
13670	7	43	3	4	62.7
13998	6	42	3	4	61.5
13999	6	42	2	3	61.7
NB64365	7	44	2	4	61.0
NB66490	5	37	1	3	61.7
NB64334	6	44	4	4	61.7
NB64308	6	42	1	2	61.0
14000	8	45	3	4	62.3
SD6687	8	43	5	5	61.5
SD6689	7	44	3	4	62.2
SD66117	5	41	2	3	62.7
SD66166	8	41	2	3	60.6
SD66167	9	43	1	2	59.8
SD66168	9	42	5	4	61.0
SD66169	8	43	4	5	61.0
SD66171	10	47	3	4	61.7
SD66173	7	43	3	5	61.2
SD66174	8	41	3	4	61.4
SD66176	7	42	4	4	61.4
MT639(138/2)	9	49	4	4	60.5
MT6326	8	50	4	3	60.7
MT6320	8	51	7	5	61.2
MT6319	8	49	4	4	60.2
A220	5	45	3	3	60.7
A222	6	46	2	3	60.2
A225	3	45	1	2	61.3
A226	4	46	2	3	62.3
A229	5	46	3	4	61.8
A233	4	45	3	3	61.3
NB66403	4	40	3	4	62.3
NB66404	5	37	3	5	60.5
NB66408	5	36	2	3	61.7

^{1/} Lodging index: 1 = erect; 9 = prostrate

^{2/} Straw stiffness: 1 = strong; 5 = very weak

LETHBRIDGE, ALBERTA
Four replications

C. I. or Sel. No.	: Date : head-ripe :	: Plant : Ht. :	: Lodge- : ing ^{2/} :	: Shatter- : ing :	: Wt./ : bu. :	: Av. acre yield : 1968 : 1968- : 1969 :	: No. : Percent : years : of : grown : Kharkof		
	June	July	In.	%	Lbs.	Bu.	Bu.		
MT6326	9	27	32	2	20	66.0	53.5	46.3	2 102.4
NB64308	7	27	30	1	4	66.0	53.4	46.7	2 103.4
SD6689	6	27	28	3	0	67.0	52.5	--	1 106.9
13999	6	27	29	1	4	65.5	52.1	47.1	4 101.4
MT639(13872)	10	27	34	3	10	65.5	51.9	44.1	3 106.0
SD6687	8	27	30	4	3	66.5	51.9	--	1 105.7
13190	5	27	28	2	7	66.0	51.4	45.4	5 99.6
SD66117	7	27	27	2	2	66.0	51.2	--	1 104.3
NB66403	4	27	26	1	8	66.5	50.8	--	1 103.5
NB64365	5	27	29	1	4	66.0	50.7	43.9	4 95.8
NB64334	7	27	30	2	10	66.0	50.3	45.7	3 106.3
SD66174	6	27	28	2	0	66.0	50.3	--	1 102.4
MT6320	8	27	32	3	0	66.5	49.8	44.3	2 98.0
NB66404	4	27	26	1	7	67.0	49.4	--	1 100.6
1442	9	27	32	3	7	65.5	49.1	45.2	14 100.0
13998	7	27	30	2	5	66.0	47.5	45.0	4 99.0
SD66171	8	29	33	2	15	66.0	47.3	--	1 96.3
MT6319	9	27	30	3	15	65.0	47.3	41.3	2 91.5
SD66169	8	28	32	1	0	65.5	45.8	--	1 93.3
A229	5	27	30	3	4	66.5	45.7	--	1 93.1
SD66173	5	27	29	2	15	66.0	45.4	--	1 92.5
NB66490	4	26	24	1	5	66.0	44.6	38.5	2 85.3
14000	9	27	31	2	0	67.0	44.3	38.9	3 93.5
13670	8	27	30	2	0	66.5	43.9	40.1	6 92.5
SD66176	6	27	28	1	15	66.0	43.0	--	1 87.6
NB66408	4	27	26	1	10	67.0	42.9	--	1 87.4
SD66166	7	27	29	1	0	65.0	42.5	--	1 86.6
A222	4	27	27	1	0	65.0	40.9	--	1 83.3
A233	4	27	28	2	0	66.5	40.2	--	1 81.9
SD66168	8	27	30	1	0	65.0	39.6	--	1 80.7
SD66167	9	27	30	1	0	65.0	38.4	--	1 78.2
A225	4	27	29	2	3	66.0	37.7	--	1 76.8
A226	5	27	28	1	0	66.0	37.2	--	1 75.8
A220	4	27	27	1	0	66.0	34.8	--	1 70.9

^{1/} Imperial bushels

^{2/} 1-9 scale; 1=erect, 9=prostrate

L.S.D. .05 = 5.3 bushels; C.V. = 8.1%

CLOVIS, NEW MEXICO
Four replications, dryland

C. I. or Sel. No.	Date		Weight		Av. acre yield		No.	Percent
	Headed	Ripe	Plant height	per bushel	1968	1969		
	May	June	in.	lbs.	bu.	bu.	years	of
							grown	Kharkof
NB64365	10	24	30	62	30.2	21.3	2	114.9
1442	12	24	30	62	29.1	18.5	2	100.0
NB66403	6	19	28	63	28.6	--	1	98.3
SD66166	12	23	29	62	28.5	--	1	97.9
13190	12	23	27	63	28.0	19.0	2	102.7
SD66171	11	24	31	63	28.0	--	1	96.2
13998	10	22	28	63	27.8	21.1	2	113.8
NB64334	11	22	30	63	27.6	19.6	2	105.7
SD66176	10	24	30	63	27.6	--	1	94.8
SD66173	10	24	30	63	27.5	--	1	94.5
14000	13	25	29	63	27.2	17.3	2	93.2
NB66404	5	18	27	62	26.8	--	1	92.1
NB64308	8	22	30	63	26.4	19.0	2	102.4
SD66169	10	24	31	62	26.0	--	1	89.3
MT6326	13	24	30	63	25.5	17.3	2	93.5
SD6687	10	22	32	63	25.2	--	1	86.6
A222	7	20	31	63	25.2	--	1	86.6
13670	12	24	29	63	25.1	18.1	2	97.6
SD66117	10	22	26	63	25.1	--	1	86.3
MT639(13872)	14	24	32	63	24.9	15.1	2	81.6
MT6320	12	23	30	63	24.8	17.1	2	92.4
SD66168	12	23	30	62	24.6	--	1	84.5
13999	11	23	28	63	24.5	18.5	2	99.7
SD6689	12	24	30	62	24.4	--	1	83.8
NB66408	9	22	27	64	23.8	--	1	81.8
A233	8	22	29	63	22.6	--	1	77.7
SD66167	12	24	29	62	22.2	--	1	76.3
A229	8	23	30	63	22.2	--	1	76.3
A220	7	18	29	62	22.0	--	1	75.6
MT6319	14	23	27	62	22.0	15.7	2	84.6
SD66174	11	24	28	64	21.8	--	1	74.9
NB66490	6	19	26	63	21.4	16.2	2	87.6
A225	8	20	30	63	21.4	--	1	73.5
A226	8	25	28	62	17.2	--	1	59.1

L. S. D. .05 = 6.5 bushels; C. V. = 18.3%

CLOVIS, NEW MEXICO
Four replications, irrigated

C. I. or Sel. No.	Date		Plant	Winter	Weight per	Av. acre yield		No.	Percent
	Headed	Ripe	height	survival	bushel	1968	1969	grown	Kharkov
	May	June	in.	%	lbs.	bu.	bu.		
13190	13	27	44	100	61.2	59.0	67.6	5	113.6
NB66408	12	26	44	100	63.2	55.5	--	1	135.0
SD66174	15	27	46	96	61.7	53.8	--	1	130.9
14000	18	29	47	100	62.3	52.4	60.0	3	103.3
SD66166	15	26	49	100	62.4	52.2	--	1	127.0
13999	16	28	45	100	61.3	51.4	61.5	4	109.1
NB66404	9	28	44	97	61.9	50.7	--	1	123.4
NB66490	10	26	44	99	61.4	50.2	63.1	2	121.6
SD66117	14	28	45	100	61.1	49.5	--	1	120.4
13670	18	28	47	100	62.5	49.2	56.4	7	105.9
SD66173	13	27	47	95	61.3	49.2	--	1	119.7
NB64308	15	28	47	99	60.8	49.0	63.8	2	123.0
A229	10	28	49	99	61.9	48.6	--	1	118.2
A233	12	28	49	99	61.6	48.6	--	1	118.2
NB64365	14	27	47	100	61.8	48.4	61.5	4	101.2
SD66171	15	27	48	99	62.7	48.0	--	1	116.8
NB66403	11	27	45	99	60.8	45.8	--	1	111.4
A222	12	26	50	99	61.6	45.0	--	1	109.5
A220	10	26	47	100	61.7	44.8	--	1	109.0
SD66168	14	27	47	99	62.5	42.4	--	1	103.2
1442	18	25	46	99	60.4	41.1	51.9	10	100.0
13998	15	28	45	100	60.5	40.5	53.3	4	106.3
SD66176	14	28	47	96	61.7	40.5	--	1	98.5
MT6326	20	28	46	100	59.6	39.9	51.2	2	98.6
NB64334	15	26	47	97	61.9	39.2	54.1	3	100.3
SD66169	16	28	47	96	60.6	39.0	--	1	94.9
MT6319	19	28	49	100	59.2	38.4	48.5	2	93.4
SD66167	16	27	50	100	61.0	38.1	--	1	92.7
A225	12	26	47	100	61.5	37.8	--	1	92.0
A226	10	27	46	100	61.8	37.4	--	1	91.0
MT639(13872)	21	30	46	97	59.3	36.9	45.2	3	86.0
SD6687	15	28	46	96	61.2	36.2	--	1	88.1
SD6689	19	28	42	96	58.1	35.4	--	1	86.1
MT6320	18	28	46	99	58.0	29.1	43.5	2	83.9

L. S. D. .05 = 12.9 bushels; C. V. = 20.7%

Summary of NRPN Yields

Yields made by 34 varieties and hybrids in the NRPN at 12 locations in 1969 are summarized in table 8. State averages and ranks also are shown. Summary yields in kilograms per hectare are given in table 9. Highest yielding on the average was NB66403 with 38.3 bushels per acre. The same variety also ranked third in the SRPN. Varieties with the next highest average yields in the NRPN in 1969 were NB64365, NB64334, and NB64308. The least productive entries on the average were the 6 hybrids in the nursery. In contrast to the SRPN, no variety in the NRPN exhibited uniformly high yields in all states. NB66403, for example, ranked first in only Wyoming, second in Nebraska and Minnesota, but only 13th in South Dakota and 18th in North Dakota.

Two-year average yields for 14 varieties grown in 1968 and 1969 in the NRPN are summarized in tables 10 (bu/a) and 11 (kg/h). Warrior has slightly the highest 2-year average (41.7 bu/a) followed by NB64365, NB64308, NB64334, Trapper, NB66490, and Trader, in that order.

Summary of Agronomic Data

Agronomic data other than yield for varieties and hybrids in the 1969 NRPN are summarized in table 12. Varieties are arranged according to bushel weight. NB66490 and DeKalb Hybrid A225 headed the earliest. Froid was latest heading on the average. NB66490 also had slightly the shortest straw. NB66408, NB64334, SD66173, Warrior and A233 did not lodge. The highest average winter survivals were shown by NB66490, NB64365, MT6326 and NB64308 -- all with more than 90%. NB66408 produced grain with the highest average bushel weight.

Table 8.--Summary of average yields in bushels per acre made by 34 varieties grown in the Northern Regional Performance Nursery in 13 trials in 1969 with state averages and rank.

Pedigree	:	C. I. or Sel. No.	New Mexico				Wyoming				Minnesota			
			Clovis:	Clovis:	Aver-:	Rank:	Archer:	Sheri-:	Aver-:	Rank:	Waseca:	St. Paul:	Aver-:	Rank:
			dryl.:	irrig.:	age :	:	dan :	age :	:	:	:	age :	:	:
Pn/Cnn/3/Pn/2/Ky58/4/Cnn	:	NB66403	28.6	45.8	38.6	8	20.1	52.3	36.2	1	50.7	38.9	46.9	2
Selkirk/2* Cheyenne	:	NB64365	30.2	48.4	39.7	3	--	--	--	--	41.0	40.7	40.9	12
Selkirk/2* Cheyenne	:	NB64334	27.6	39.2	39.5	5	18.2	41.4	29.8	14	42.8	40.3	41.6	9
Selkirk/3* Cheyenne	:	NB64308	26.4	49.0	37.4	13	19.9	40.5	30.2	11	49.5	41.1	45.3	3
NT-2/Cnn-2 8-9-3	:	MT6326	25.5	39.9	33.0	22	20.3	40.5	30.4	9	35.2	42.3	38.8	19
Warrior	:	13190	28.0	59.0	36.9	14	19.0	42.2	30.6	6	33.0	34.9	34.0	30
Trapper	:	13999	24.5	51.4	41.8	1	17.5	38.9	28.2	18	34.8	38.9	36.9	24
Pn/Cnn/3/Pn/2/Ky58/4/Cnn	:	NB66404	26.8	50.7	37.7	12	17.1	50.7	33.9	2	47.1	43.0	44.8	5
NB60258/NB61983	:	SD6689	24.4	35.4	36.7	15	20.1	39.8	30.0	13	50.7	45.9	48.3	1
Winalta	:	13670	25.1	49.2	37.9	11	20.4	40.5	30.4	9	41.7	36.6	39.2	17
Trader	:	13998	27.8	40.5	40.1	2	21.9	42.7	32.3	3	37.8	39.5	38.7	20
NB60258/NB61983	:	SD6687	25.2	36.2	32.2	23	15.6	37.5	26.6	23	44.8	41.2	43.0	7
Pnc/3*Cnn/2/NB61977	:	SD66174	21.8	53.8	34.9	19	18.8	42.2	30.5	7	45.9	37.3	41.6	9
Wrr*2/III-54-12	:	SD66117	25.1	49.5	30.7	31	20.1	44.5	32.3	3	44.8	37.3	41.1	11
Winoka	:	14000	27.2	52.4	38.7	7	17.5	41.9	29.7	15	35.3	33.1	34.2	29
Froid	:	MT639(13872)	24.9	36.9	39.4	6	15.3	40.7	28.0	19	28.4	37.1	32.8	33
Pn/Cnn/3/Pn/2/Ky58/4/Cnn	:	NB66408	23.8	55.5	39.7	3	15.6	44.5	30.1	12	46.2	42.4	40.7	15
Kharkof	:	1442	29.1	41.1	35.1	18	18.4	43.7	31.1	5	30.8	35.3	33.1	32
Ky58/5/Nth/6/Cnn/2/Tm/3/-	:													
Mi/Hope/7/Pn/4/Cnn/8/Wrr	:	NB66490	21.4	50.2	31.0	28	15.2	43.5	29.4	16	41.5	40.3	40.9	12
Yogo/Cnn	:	MT6320	24.8	29.1	30.9	30	17.0	37.7	27.4	21	26.8	37.8	32.3	34
Pnc/3*Cnn/2/NB61977	:	SD66176	27.6	40.5	38.4	9	17.8	31.8	24.8	27	52.4	36.6	44.5	6
Selected Bulk 2-77	:	MT6319	22.0	38.4	31.0	28	12.9	43.1	28.0	19	34.9	33.7	36.1	27

Table 8.--(continued).

Pedigree	:	:	New Mexico				:	Wyoming				:	Minnesota											
			C. I. or					Clovis:Clovis:Aver-:Rank:					Archer:Sheri-:Aver-:Rank:					Waseca:St. Paul:Aver-:Rank						
			Sel. No.	dryl.:	irrig.:	age :		:	dan	age :	:		:	:	age :	:	:	:	age :					
SD 56-497-3-0-0		SD66166	28.5	52.2	32.0	25	14.0	39.8	26.9	22	43.5	34.9	39.2	17										
SD 56-497-7-0-0		SD66168	24.6	42.4	38.4	9	16.1	42.2	29.2	17	40.8	33.7	37.3	22										
Pnc/3*Cnn/2/NB61981		SD66169	26.0	39.0	32.1	24	15.4	36.5	26.0	24	46.5	38.2	42.4	8										
Pnc/3*Cnn/2/NB61981		SD66171	28.0	48.0	35.2	17	17.2	26.2	21.7	30	41.3	35.3	38.3	21										
SD-56-497-6-0-0		SD66167	22.2	38.1	35.9	16	12.8	29.9	21.4	31	42.0	39.5	40.8	14										
Pnc/3*Cnn/2/NB61981		SD66173	27.5	49.2	33.3	20	18.7	32.9	25.8	25	45.9	26.9	36.4	26										
DeKalb Hybrid		A229	22.2	48.6	30.0	32	14.8	46.2	30.5	7	35.2	41.5	35.9	28										
DeKalb Hybrid		A233	22.6	48.6	30.0	32	10.7	33.0	21.9	29	51.4	36.6	45.2	4										
DeKalb Hybrid		A222	25.2	45.0	31.8	26	12.4	37.6	25.0	26	41.8	41.1	37.0	23										
DeKalb Hybrid		A226	17.2	37.4	31.1	27	11.4	37.1	24.3	28	31.5	32.6	36.5	25										
DeKalb Hybrid		A225	21.4	37.8	33.1	21	9.9	24.9	17.4	32	35.2	32.1	33.9	31										
DeKalb Hybrid		A220	22.0	44.8	25.6	34	7.7	27.1	17.4	32	40.1	37.2	40.6	16										

Table 8.--(continued)

C.I. or Sel. No.:	: North Dakota :			Nebraska			: South Dakota			Idaho		: Alberta :		13-	
	Williston:	Rank:	Alliance:	North:	Average:	Rank:	High-:	Presho:	Average:	Rank:	Tetonia:	Rank:	Leth-:	Rank:	Trial
	:	:		:Platte:		:	:more :		:	:	:	:	:bridge:		:Average
NB66403	18.1	18	25.9	53.6	39.8	2	30.2	33.2	31.7	13	43.0	9	50.8	9	38.3
NB64365	24.8	2	23.0	49.7	36.4	7	32.8	31.5	32.2	11	44.6	8	50.7	10	38.0 ^{1/}
NB64334	21.9	9	20.4	49.7	35.1	12	35.0	31.1	33.1	8	45.6	6	50.3	11	36.6
NB64308	21.3	10	19.4	50.9	35.2	10	25.8	31.2	28.5	24	44.7	7	53.4	2	36.3
MT6326	24.2	4	25.6	54.8	40.2	1	35.4	32.6	34.0	2	40.4	20	53.5	1	36.2
13190	20.9	11	25.1	52.8	39.0	3	31.6	34.7	33.2	7	48.8	1	51.4	7	36.0
13999	20.5	12	23.4	51.5	37.5	6	26.4	33.5	30.0	19	46.4	3	52.1	4	36.0
NB66404	11.5	34	21.1	48.5	35.0	16	29.3	34.0	31.7	13	41.7	14	49.4	14	36.0
SD6689	14.1	29	18.4	47.9	33.2	24	23.0	35.2	29.1	22	42.8	11	52.5	3	35.7
13670	22.4	6	21.7	48.7	35.2	10	37.0	31.3	34.2	1	39.0	22	43.9	24	35.3
13998	20.0	13	19.3	48.5	33.9	19	28.4	31.7	30.1	18	41.6	16	47.5	16	35.3
SD6687	14.4	28	22.8	52.8	37.8	4	33.0	34.8	33.9	3	42.9	10	51.9	5	35.1
SD66174	17.5	21	20.1	50.1	35.1	12	33.9	33.0	33.5	5	37.4	27	50.3	11	35.1
SD66117	18.3	16	24.8	50.7	37.8	4	27.9	32.6	30.3	16	41.3	17	51.2	8	35.0
14000	19.6	14	18.6	48.1	33.4	21	36.4	31.0	33.7	4	46.1	5	44.3	23	34.6
MT639(13872)	24.8	2	20.6	43.0	31.8	27	35.8	27.7	31.8	12	46.3	4	51.9	5	34.6
NB66408	14.9	25	21.7	50.0	35.9	9	28.7	31.9	30.3	16	37.4	27	42.9	26	34.5
1442	23.3	5	21.9	47.0	34.5	18	27.4	31.0	29.2	21	41.7	14	49.1	15	33.8
NB66490	22.4	6	19.6	50.5	35.1	12	28.1	30.6	29.4	20	41.2	18	44.6	22	33.8
MT6320	25.2	1	20.1	50.0	35.1	12	36.0	28.5	32.3	10	47.4	2	49.8	13	33.7
SD66176	13.7	32	17.0	49.5	33.3	23	25.8	29.8	27.8	26	39.9	21	43.0	25	33.4
MT6319	22.1	8	19.2	48.5	33.9	19	36.0	30.2	33.1	8	41.1	19	47.3	17	33.4

^{1/} Average based on 11 trials

Table 8.--(concluded)

C. I. or Sel. No.	: North Dakota :			Nebraska :			South Dakota :			Idaho :		Alberta :		13-	
	Williston:	Rank:	Alliance:	North:	Average:	Rank:	High-:	Presho:	Average:	Rank:	Tetonia:	Rank:	Leth-:	Rank:	Trial
	:	:	:	Platte:	:	:	more :	:	:	:	:	:	bridge:	:	Average
SD66166	17.6	20	22.4	49.8	36.1	8	29.2	37.3	33.3	6	38.2	24	42.5	27	33.3
SD66168	19.6	14	22.3	47.6	35.0	16	28.2	29.5	28.9	23	35.9	31	30.6	30	33.3
SD66169	18.1	18	20.5	43.8	32.2	25	33.9	27.3	30.6	15	42.1	13	45.8	19	33.2
SD66171	15.3	24	17.0	45.8	31.4	28	18.8	31.8	25.3	29	42.8	11	47.3	17	31.5
SD66167	18.3	16	23.2	40.5	31.9	26	26.2	26.6	26.4	27	36.9	30	38.4	31	31.2
SD66173	15.8	23	14.9	44.1	29.5	33	26.8	29.7	28.3	25	37.3	29	45.4	21	31.1
A229	14.0	30	20.2	46.6	33.4	21	16.1	30.8	23.5	30	38.5	23	45.7	20	31.1
A233	14.0	30	16.1	44.5	30.3	29	19.1	25.0	22.1	32	37.9	26	40.2	29	30.1
A222	16.2	22	19.0	41.0	30.0	30	14.1	29.8	22.0	33	34.2	32	40.9	28	29.4
A226	14.5	27	14.5	39.3	26.9	34	10.6	25.8	18.2	34	38.0	25	37.2	33	28.0
A225	14.9	25	17.7	42.3	30.0	30	21.3	30.9	26.1	28	25.2	34	37.7	32	27.6
A220	11.9	33	18.0	41.9	30.0	30	16.6	30.1	23.4	31	33.2	33	34.8	34	27.2

Table 9.--Summary of average yields in kilograms per hectare made by varieties grown in the Northern Regional Performance Nursery in 1969.

Pedigree	: C. I. or	: Nebraska	: South Dakota	: Idaho				
	: Sel. No.	:Alliance:North	:Average:Highmore:Presho	:Average:Tetonia				
	:	:Platte:	:	:				
Pn/Cnn/3/Pn/2/Ky 58/4/Cnn	NB66403	1741	3604	2673	2030	2232	2131	2891
Selkirk/2* Cheyenne	NB64365	1546	3341	2444	2205	2118	2162	2998
Selkirk/2* Cheyenne	NB64334	1371	3341	2356	2353	2091	2222	3066
Selkirk/3* Cheyenne	NB64308	1304	3422	2363	1735	2098	1917	3005
NT-2/Cnn-2 8-9-3	MT6326	1721	3684	2703	2380	2192	2286	2716
Warrior	13190	1687	3550	2619	2124	2333	2229	3281
Trapper	13999	1573	3462	2518	1775	2252	2014	3119
Pn/Cnn/3/Pn/2/Ky58/4/Cnn	NB66404	1419	3261	2340	1970	2286	2128	2803
NB60258/NB61983	SD6689	1237	3220	2229	1546	2366	1956	2877
Winalta	13670	1459	3274	2367	2488	2104	2296	2622
Trader	13998	1298	3261	2280	1909	2131	2020	2797
NB60258/NB61983	SD6687	1533	3550	2542	2219	2340	2280	2884
Pnc/3*Cnn/2/NB61977	SD66174	1351	3368	2360	2279	2219	2249	2514
Wrr*2/III 54-12	SD66117	1667	3409	2538	1876	2192	2034	2777
Winoka	14000	1250	3234	2242	2447	2084	2266	3099
Froid	MT639(13872)	1385	2891	2138	2407	1862	2135	3113
Pn/Cnn/3/Pn/2/Ky58/4/Cnn	NB66408	1459	3362	2411	1930	2145	2038	2514
Kharkof	1442	1472	3160	2316	1842	2084	1963	2803
Ky58/5/Nth/6/Cnn/2/Tm/3/Mi/Hope/7/Pr/4/Cnn/8/Wrr	NB66490	1318	3395	2357	1889	2057	1973	2770
Yogo/Cnn	MT6320	1351	3362	2357	2420	1916	2168	3187
Pnc/3*Cnn/2/NB61977	SD66176	1143	3328	2236	1735	2003	1869	2682
Selected bulk 2-77	MT6319	1291	3261	2276	2420	2030	2225	2763

Table 9.--(continued)

Pedigree	C.I. or Sel. No.	Nebraska			South Dakota			Idaho	
		Alliance	North	Average	Highmore	Presho	Average	Tetonia	
		Platte							
SD 56-497-3-0-0	SD66166	1506	3348	2427	1963	2508	2236	2568	
SD 56-497-7-0-0	SD66168	1499	3200	2350	1896	1983	1940	2414	
Pnc/3*Cnn/2/NB61981	SD66169	1378	2945	2162	2279	1835	2057	2830	
Pnc/3*Cnn/2/NB61981	SD66171	1143	3079	2111	1264	2138	1701	2877	
SD 56-497-6-0-0	SD66167	1560	2723	2142	1761	1788	1775	2481	
Pnc/3*Cnn/2/NB61981	SD66173	1002	2965	1984	1802	1997	1900	2508	
DeKalb Hybrid	A229	1358	3133	2246	1082	2071	1577	2588	
DeKalb Hybrid	A233	1082	2992	2037	1284	1681	1483	2548	
DeKalb Hybrid	A222	1277	2756	2017	948	2003	1476	2299	
DeKalb Hybrid	A226	975	2642	1809	713	1735	1224	2555	
DeKalb Hybrid	A225	1190	2844	2017	1432	2077	1755	1694	
DeKalb Hybrid	A220	1210	2817	2014	1116	2024	1570	2232	

Table 9.--(continued)

C.I. or Sel. No.	:No. Dakota:	New Mexico	:	Wyoming	:	Minnesota	:	Alberta	:13-Trial			
	:Williston:	Clovis:	Average:	Archer:	Sheridan:	Average:	Waseca:	St. Paul:	Average:	Lethbridge:	Average	
	dryl. irrig.											
NB66403	1217	1923	3267	2595	1351	3516	2434	3409	2891	3150	3415	2573
NB64365	1667	2030	3308	2669	--	--	--	2756	2736	2746	3409	2556
NB64334	1472	1856	3456	2656	1224	2783	2004	2877	2709	2793	3382	2460
NB64308	1432	1775	3254	2515	1338	2723	2031	3328	2763	3046	3590	2444
MT6326	1627	1714	2723	2219	1365	2723	2044	2366	2844	2605	3597	2435
13190	1405	1882	3079	2481	1277	2837	2057	2219	2346	2283	3456	2421
13999	1378	1647	3967	2807	1177	2615	1896	2340	2615	2478	3503	2417
NB66404	773	1802	3267	2535	1150	3409	2280	3167	2851	3009	3321	2421
SD6689	948	1640	3294	2467	1351	2676	2014	3409	3086	3248	3530	2398
13670	1506	1687	3409	2548	1371	2723	2047	2803	2461	2632	2951	2374
13998	1345	1869	3523	2696	1472	2871	2172	2541	2656	2599	3193	2374
SD6687	968	1694	2635	2165	1049	2521	1785	3012	2770	2891	3489	2359
SD66174	1177	1466	3227	2347	1264	2837	2051	3086	2508	2797	3382	2360
SD66117	1230	1687	2434	2061	1351	2992	2172	3012	2508	2760	3442	2352
14000	1318	1829	3375	2602	1177	2817	1997	2373	2225	2299	2978	2324
MT639 (13872)	1667	1674	3617	2646	1029	2736	1883	1909	2494	2202	3489	2329
NB66408	1002	1600	3731	2666	1049	2992	2021	3106	2360	2733	2884	2318
1442	1566	1956	2763	2360	1237	2938	2088	2071	2373	2222	3301	2274
NB66490	1506	1439	2723	2081	1022	2925	1974	2790	2709	2750	2998	2272
MT6320	1694	1667	2481	2074	1143	2535	1839	1802	2541	2172	3348	2265
SD66176	921	1856	3308	2582	1197	2138	1668	3523	2461	2992	2891	2245
MT6319	1486	1479	2682	2081	867	2898	1883	2346	2501	2424	3180	2246

Table 9.--(concluded)

C.I. or Sel. No.	:No.Dakota:	New Mexico	:	Wyoming	:	Minnesota	:	Alberta	:13-Trial			
	:Williston:	Clovis:	Clovis:	Average:	Archer:	Sheridan:	Average:	Waseca:	St.Paul:	Average:	Lethbridge:	Average
	dryl.:irrig.											
SD66166	1183	1916	2380	2148	941	2676	1809	2925	2346	2636	2857	2240
SD66168	1318	1654	3509	2582	1082	2837	1960	2743	2266	2505	2662	2236
SD66169	1217	1748	2561	2155	1035	2454	1745	3126	2568	2847	3079	2235
SD66171	1029	1882	2851	2367	1156	1761	1459	2777	2373	2575	3180	2116
SD66167	1230	1493	3328	2411	861	2010	1436	2824	2656	2740	2582	2100
SD66173	1062	1849	2622	2236	1257	2212	1735	3086	1808	2447	3052	2094
A229	941	1493	2541	2017	995	3106	2051	2366	2461	2414	3072	2093
A233	941	1519	2514	2017	719	2219	1469	3456	2615	3036	2703	2021
A222	1089	1694	2582	2138	834	2528	1681	2810	2158	2484	2750	1979
A226	975	1156	3025	2091	766	2494	1630	2118	2790	2454	2501	1880
A225	1002	1439	3012	2226	666	1674	1170	2366	2192	2279	2535	1856
A220	800	1479	1956	1718	518	1822	1170	2696	2763	2730	2340	1829

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Table 10.--Summary of 2-year average yields for 14 varieties grown in the Northern Regional Performance Nursery in 10 trials in 1968 and 1969 with state averages and rank.

Pedigree	C. I. or Sel. No.	Nebraska			South Dakota			Idaho	
		North	Rank	High	Presho	Average	Rank	Tetonia	Rank
		Platte	more						
Warrior	13190	48.6	3	38.3	38.4	38.4	2	47.9	4
Selkirk/2* Cheyenne	NB64365	48.5	4	40.9	35.4	38.2	3	48.7	2
Selkirk/3* Cheyenne	NB64308	48.3	5	37.0	36.6	36.8	4	48.7	2
Selkirk/2* Cheyenne	NB64334	45.7	11	40.9	37.3	39.1	1	48.8	1
Trapper	13999	51.7	1	33.3	35.4	34.4	9	47.8	5
Ky58/5/Nth/6/Cnn/2/Tm/3/Mi/Hope/7/Pn/4/Cnn/8/Wrr	NB66490	48.2	6	39.2	33.2	36.2	6	47.5	6
Trader	13998	47.4	8	35.7	32.3	34.0	10	47.2	7
Winalta	13670	46.6	10	40.4	32.9	36.7	5	43.6	10
NT-2/Cnn-2 8-9-3	MT6326	49.4	2	37.9	30.1	34.0	10	44.3	8
Kharkof	1442	47.8	7	35.4	30.1	32.3	12	41.0	14
Winoka	14000	46.8	9	38.7	32.8	35.3	7	44.2	9
Selected Bulk 2-77	MT6319	45.6	12	38.0	31.8	34.9	8	41.4	13
Yogo/Cnn 12-4-2	MT6320	44.6	13	36.6	27.1	31.9	13	43.6	10
Froid	MT639 (13872)	37.2	14	36.0	26.8	31.4	14	42.1	12

Table 10.--(concluded).

C. I. Or	New Mexico				Wyoming				North Dakota		Alberta		10-Trial
Sel. No.	Clovis	Clovis	Average	Rank	Sheridan	Archer	Average	Rank	Williston	Rank	Lethbridge	Rank	Average
	irrig.: dryl.												
13190	67.6	19.0	43.3	1	52.5	30.1	41.3	2	22.9	13	51.4	1	41.7
NB64365	61.5	21.3	41.4	2	--	--	--	--	27.1	7	43.9	10	40.9 ^{1/}
NB64308	63.8	19.0	41.4	2	51.3	32.6	42.0	1	23.2	12	46.7	3	40.7
NB64334	54.1	19.6	36.9	9	50.3	30.5	40.4	3	24.8	9	45.7	5	39.8
13999	61.5	18.5	40.0	4	48.0	27.6	37.8	8	21.7	14	47.1	2	39.3
NB66490	63.1	16.2	39.7	5	49.8	30.7	40.3	4	25.5	8	38.5	14	39.2
13998	53.3	21.1	37.2	8	48.6	30.6	39.6	6	23.6	11	45.0	7	38.5
13670	56.4	18.1	37.3	7	46.3	30.1	38.2	7	28.8	3	40.1	12	38.3
MT6326	51.2	17.3	34.3	11	44.4	28.9	36.7	11	29.0	1	46.3	4	37.9
1442	51.9	18.5	35.2	10	48.8	30.5	39.7	5	27.5	6	45.2	6	37.7
14000	60.0	17.3	38.7	6	46.0	26.9	36.5	12	24.3	10	38.9	13	37.6
MT6319	48.5	15.7	32.1	12	47.3	27.1	37.2	9	28.5	5	41.3	11	36.5
MT6320	43.5	17.1	30.3	13	44.9	27.6	36.3	13	29.0	1	44.3	8	35.8
MT639(13872)	45.2	15.1	30.2	14	47.5	26.4	37.0	10	28.7	4	44.1	9	34.9

^{1/} Average based on 8 trials

Table 11.--Summary of 2-year average yields in kilograms per hectare made by varieties grown in the Northern Regional Performance Nursery in 1968 and 1969.

Pedigree	:Nebr. : South Dakota :Idaho: New Mexico : Wyoming :No.Dak.:Alb.: 10														
	:C. I. or:North :High-:Presho:Aver: Te- :Clovis:Clovis:Aver:Sheri-:Archer:Aver:Willis-:Leth- : Trial														
	:Sel. No.:Platte:more : :age :tonia: : :age : dan : :age : ton :bridge:Average														
irrig.:dryl.															
Warrior	13190	3267	2575	2582	2579	3220	4545	1277	2911	3530	2024	2777	1540	3456	2802
Selkirk/2* Cheyenne	NB64365	3261	2750	2380	2565	3274	4135	1432	2784	--	--	--	1822	2951	2751 ^{1/}
Selkirk/3* Cheyenne	NB64308	3247	2488	2461	2475	3274	4289	1277	2783	3449	2192	2821	1560	3140	2738
Selkirk/2* Cheyenne	NB64334	3072	2750	2508	2629	3281	3637	1318	2478	3382	2051	2717	1667	3072	2674
Trapper	13999	3476	2239	2380	2310	3214	4135	1244	2690	3227	1856	2542	1459	3167	2640
Ky58/5/Nth/6/Cnn/2/- Tm/3/Mi/Hope/7/- Pn/4/Cnn/8/Wrr	NB66490	3240	2635	2232	2434	3193	4242	1089	2666	3348	2064	2706	1714	2588	2635
Trader	13998	3187	2400	2172	2286	3173	3583	1419	2501	3267	2057	2662	1587	3025	2587
Winalta	13670	3133	2716	2212	2464	2931	3792	1217	2505	3113	2024	2569	1936	2696	2577
NT-2/Cnn-2 8-9-3	MT6326	3321	2548	2024	2286	2978	3442	1163	2303	2985	1943	2464	1950	3113	2547
Kharkof	1442	3214	2380	2024	2202	2756	3489	1244	2367	3281	2051	2666	1849	3039	2533
Winoka	14000	3146	2602	2205	2404	2972	4034	1163	2599	3093	1808	2451	1634	2965	2562
Selected Bulk 2-77	MT6319	3066	2555	2138	2347	2783	3261	1056	2159	3180	1822	2502	1916	2777	2455
Yogo/Cnn 12-4-2	MT6320	2998	2461	1822	2142	2931	2925	1150	2038	3019	1856	2438	1950	2978	2409
Froid	MT639(13872)	2501	2420	1802	2111	2830	3039	1015	2027	3193	1775	2484	1930	2965	2347

^{1/} Average based on 8 trials

Table 12.--Summary of Agronomic data other than yield for varieties grown in the Northern Regional Performance Nursery in 1969.

Pedigree	C. I. or Sel. No.	Date head-ripe ed	Plant height in.	Lodg- ing %	Winter- sur- vival %	Wt/ bushel
Number of stations		June	July			
		13	4	12	2	4
Pn/Cnn/3/Pn/2/Ky58/4/Cnn NB66408		3	6	32	0	79
Pnc/3*Cnn/2/NB61981 SD66171		6	7	37	13	83
Winalta 13670		6	7	34	8	89
Winoka 14000		6	7	36	18	85
Selkirk/2* Cheyenne NB64334		6	7	35	0	90
NB60258/NB61983 SD6687		6	7	35	25	77
Pnc/3*Cnn/2/NB61977 SD66174		5	6	34	10	83
Trader 13998		6	6	34	5	87
Selkirk/2* Cheyenne NB64365		4	7	35	5	92
Warrior #2/III-54-12 SD66117		4	6	33	5	82
Dw/Cnn/3/Pn/2/Ky58/4/Cnn NB66404		2	5	33	15	74
Ky58/5/Nth/6/Cnn/2/Gm/3/ Mi/Hope/7/Pn/4/Cnn/P/Wrr NB66490		1	5	31	20	93
Pnc/3*Cnn/2/NB61981 SD66169		6	7	36	5	87
Pnc/3*Cnn/2/NB61977 SD66173		4	7	35	0	78
Pnc/3*Cnn/2/NB61977 SD66176		5	7	34	18	89
Pn/Cnn/3/Pn/2/Ky58/4/Cnn NB66403		2	5	33	15	78
Warrior 13190		4	6	34	0	86
Trapper 13999		4	6	34	13	83
DeKalb Hybrid A229		3	6	36	30	80
Selkirk/3* Cheyenne NB64308		5	6	34	13	91
SD56-497-7-0-0 SD66168		6	6	35	10	88
DeKalb Hybrid A233		3	6	34	0	85
DeKalb Hybrid A226		3	6	34	3	83
DeKalb Hybrid A225		1	5	35	5	80
DeKalb Hybrid A220		3	5	35	8	84
SD56-497-6-0-0 SD66167		6	7	35	5	87
NT-2/Cnn-2 8-9-3 MT6326		7	7	36	10	91
SD56-497-3-0-0 SD66166		6	7	34	3	84
Yogo/Cnn 12-4-2 MT6320		8	7	37	5	84
Kharkof 1442		7	6	36	18	86
NB60258/NB61983 SD6689		5	7	34	23	83
DeKalb Hybrid A222		2	6	35	18	78
Selected Bulk 2-77 MT6319		8	7	35	30	85
Froid MT639(13872)		9	7	37	8	81

1/ One less than number of stations shown.

QUALITY DATA

The quality of varieties in the SRPN and NRPN is evaluated at the Hard Winter Wheat Quality Laboratory at Kansas State University. One-pound samples of varieties from each nursery site are composited for evaluation purposes. Results are reported to 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 is made up of wheats from Texas, New Mexico, Kansas, Nebraska and Colorado. The Northern Materials Section has wheats from South Dakota, Wyoming, Minnesota, and Montana. Entries are grown in single rows with 2 replications. Nursery sites in 1969 for the Southern Section comprised of 197 entries were Laramie, Wyoming; Brookings and Watertown, South Dakota; St. Paul, Minnesota; Casselton, North Dakota; and Havre, Montana. Differential survivals were reported from Brookings, Watertown, St. Paul, and Laramie. There was no winterkilling at Havre or Fargo. Nursery sites for a Northern Section containing 77 entries were the same as for the Southern Section with the exception of Lethbridge, Alberta being substituted for Laramie, Wyoming. Survival data for the Northern Section were reported from Brookings, Watertown, and St. Paul. No winterkilling was reported from Fargo, Havre, or Lethbridge. Survival data for both sections were summarized and distributed to cooperators as a separate report.

SOIL-BORNE MOSAIC NURSERY

The nursery is grown each year at Urbana, Illinois and Powhattan, Kansas on soil known to be infested with the soil-borne mosaic virus. There were 48 varieties tested in 1969. Both sites provided data which were distributed to cooperators in a separate report.

HYBRID WINTERHARDINESS NURSERY

Twenty-four F hybrids involving Gage as the seed parent and various T. timopheevi-derived fertility restoring selections from the Nebraska program as male parents were evaluated together with parent lines in 1969. The nursery comprised of single rows in 4 replications was seeded at 5 locations in the region. An irrigated nursery at Bushland, Texas was destroyed by hail. Winter survival at Brookings, South Dakota was insufficient for valid yield comparisons. The mid-June freeze at Moccasin Montana sterilized the nursery. The nurseries at Ft. Collins, Colorado and Lethbridge, Alberta survived the winter without loss of stand but there was no harvest at the latter location. Yield and agronomic data were reported only from Ft. Collins. These together with survival data from Brookings and dates of spike emergence at Moccasin are presented in table 13.

There was little evidence from survivals at Brookings that the hybrid condition imparts any winter survival advantage. Survival differences were not large and only 9 hybrids out of 24 survived better than the parents. Four hybrids had lower survival than the parents. The remainder were either intermediate to the parents or no better than the best parent. The 1969 data are consistent with those obtained in 1967 and 1968.

Plot yields at Ft. Collins were highly variable with a mean difference of 19.2 bushels per acre required for statistical significance. Only 5 hybrids were equal to or higher in yield than their best parent and none significantly so. Four hybrids yielded less than either parent. Nine hybrids were taller and 8 were as tall as the tallest parent. The remainder were intermediate in height.

Heads were bagged at Ft. Collins, Brookings, and Lethbridge to measure degree of restoration in the hybrids. Seed sets on bagged heads have not yet been determined. The nursery has been discontinued for 1970.

Table 13.--Agronomic and yield data for hybrids and parent varieties grown in the Hybrid Winterhardiness Nursery in 1969.

Pedigree	Entry: C.I. or: Brookings: Moccasin:			Fort Collins (irrigated)							
	: No. :	Sel. No.:	Winter ^{1/} :	Date :	Date :	Plant :	Leaf:	Stem:	Test :	Bushels:	Rank in
	:	:	survival :	headed :	headed:	height:	rust:	rust:	weight:	per acre:	yield
	:	:	%	June	June	In.	%	%	lb/bu		
Gage	1	13532	94	8	3	43	31	9	60.7	89.5	16
Gage/NB3547	2	68-1351	95	6	4	47	80	15	59.4	75.5	47
NB3547	3	68-1301	94	8	5	47	80	21	59.1	71.3	57
Gage	4	13532	69	6	3	43	44	8	60.5	93.9	8
Gage/NB3515	5	68-1352	80	7	4	46	85	16	59.3	81.2	38
NB3515	6	68-1302	73	8	6	47	70	15	59.4	64.1	66
Gage	7	13532	71	5	3	43	60	9	60.5	89.9	15
Gage/NB3584	8	68-1353	74	6	5	48	90	18	59.6	84.4	28
NB3584	9	68-1303	78	8	4	48	85	18	58.6	78.3	41
Gage	10	13532	64	6	3	44	31	10	60.6	95.8	3
Gage/NB3591	11	68-1354	76	6	4	48	90	18	59.6	72.6	50
NB3591	12	68-1304	74	6	4	47	90	13	58.9	69.7	62
Gage	13	13532	77	5	3	43	43	8	60.8	95.8	3
Gage/NB3593	14	68-1355	61	6	4	48	90	21	59.4	81.7	37
NB3593	15	68-1305	64	8	4	48	90	20	58.1	69.4	63
Gage	16	13532	78	7	3	41	43	6	60.8	91.5	12
Gage/NB3594	17	68-1356	85	7	5	43	90	19	59.8	85.0	26
NB3594	18	68-1306	81	7	4	42	90	20	58.6	55.2	71

Table 13.--(continued)

Pedigree	Entry: C.I. or: Brookings: Moccasin:				Fort Collins (irrigated)							
	No.	Sel. No.	Winter 1/	Date	Date	Plant	Leaf	Stem	Test	Bushels	Rank in	
	:	:	survival	headed	headed	height	rust	rust	weight	per acre	yield	
			%	June	June	In.	%	%	lb/bu			
Gage	19	13532	88	6	6	42	40	9	60.9	86.6	21	
Gage/NB3597	20	68-1357	94	8	4	48	90	28	59.6	83.1	35	
NB3597	21	68-1307	84	9	5	48	90	24	58.5	52.1	72	
Gage	22	13532	88	6	3	43	33	11	60.6	83.3	32	
Gage/NB3599	23	68-1358	92	7	5	47	48	19	59.8	62.8	67	
NB3599	24	68-1308	85	10	8	51	27	24	59.0	72.5	51	8
Gage	25	13532	84	5	3	42	18	11	60.7	99.7	1	
Gage/NB3910	26	68-1359	86	6	4	47	85	21	59.8	73.5	48	
NB3910	27	68-1309	81	7	4	45	85	10	59.8	72.5	51	
Gage	28	13532	88	6	3	42	35	8	60.7	83.3	32	
Gage/NB3914	29	68-1360	91	7	4	46	90	20	59.5	85.0	25	
NB3914	30	68-1310	95	6	4	45	90	20	59.2	71.3	57	
Gage	31	13532	88	5	3	42	55	10	60.8	84.0	30	
Gage/NB3916	32	68-1361	80	5	3	46	85	18	60.2	86.7	20	
NB3916	33	68-1311	83	7	3	47	85	23	60.0	77.2	45	
Gage	34	13532	89	7	3	43	43	13	60.6	95.7	5	
Gage/NB3954	35	68-1362	91	7	4	48	85	15	59.7	88.6	17	
NB3954	36	68-1312	91	6	4	47	90	5	58.5	66.5	65	

Table 13.--(continued)

Pedigree	Entry: C.I. or Brookings: Moccasin:			Fort Collins (irrigated)							
	: No. :	Sel. No. :	Winter ¹ / ₇ :	Date :	Date :	Plant :	Leaf :	Stem :	Test :	Bushels :	Rank in
	:	:	: survival :	headed :	headed :	height :	rust :	rust :	weight :	per acre :	yield
			%	June	June	In.	%	%	lb/bu		
Gage	37	13532	91	6	3	46	43	13	60.4	84.9	26
Gage/3/Tt/3*Marquis/2/4*Bsn	38	68-1363	91	6	4	47	75	20	59.7	86.0	22
Tt/3*Marquis//4*Bsn	39	68-1313	85	8	5	48	65	30	57.7	76.5	46
Gage	40	13532	94	6	3	45	59	14	60.4	87.5	19
Gage/NB3515 Sel. 3119	41	68-1364	97	7	9	46	53	10	59.2	58.5	70
NB3515 Sel. 3119	42	68-1314	92	9	9	45	26	5	60.1	61.8	68
Gage	43	13532	69	6	3	42	24	7	60.7	91.9	11
Gage/NB3515 Sel. 3129	44	68-1365	80	7	4	45	75	15	58.9	77.6	43
NB3515 Sel. 3129	45	68-1315	80	7	5	45	40	15	59.1	72.4	54
Gage	46	13532	85	6	3	43	58	11	60.6	90.8	13
Gage/NB3518 Sel. 3144	47	68-1366	90	5	5	47	90	15	59.8	78.5	40
NB3518 Sel. 3144	48	68-1316	69	5	3	47	90	8	59.7	70.7	59
Gage	49	13532	91	5	3	43	65	10	60.4	85.2	24
Gage/NB3518 Sel. 3146	50	68-1367	86	5	4	45	90	11	59.5	85.8	23
NB65318 Sel. 3146	51	68-1317	52	6	5	45	90	6	58.8	71.9	56
Gage	52	13532	90	6	3	42	55	13	60.6	94.6	6
Gage/NB3519 Sel. 3158	53	68-1368	78	5	3	48	85	14	58.9	70.2	61
NB3519 Sel. 3158	54	68-1318	96	6	3	46	90	19	59.0	68.6	64

Table 13.--(concluded)

Pedigree	:Entry:C.I. or:Brookings:Moccasin: Fort Collins (irrigated)											
	: No. :	Sel.No.:	Winter	: Date	: Date	: Plant	: Leaf	: Stem	: Test	: Bushels	: Rank in	
	:	:	: survival	: headed	: headed	: height	: rust	: rust	: weight	: per acre	: yield	
				June	June	In.	%	%	lb/bu			
Gage	55	13532	82	5	3	44	38	9	60.7	90.0	14	
Gage/NB3519 Sel. 3169	56	68-1369	82	5	4	50	85	19	59.6	72.5	51	
NB3519 Sel. 3169	57	68-1319	73	7	6	52	85	15	58.8	59.8	69	
Gage	58	13532	61	5	3	42	31	9	60.4	92.1	10	
Gage/NB3937 Sel. 4243	59	68-1370	58	5	3	46	85	24	60.3	77.9	42	
NB3937 Sel. 4243	60	68-1320	46	4	3	46	85	20	59.8	77.3	44	
Gage	61	13532	73	5	3	43	23	8	60.7	96.8	2	
Gage/NB3937 Sel. 4256	62	68-1371	73	5	4	46	85	21	60.5	93.0	9	
NB3937 Sel. 4256	63	68-1321	41	5	4	45	33	33	60.7	70.5	60	
Gage	64	13532	80	7	3	44	25	8	60.5	82.6	36	
Gage//Tt/Nebred 494659	65	68-1372	78	7	3	49	85	11	59.6	84.1	29	
Tt/Nebred 494659	66	68-1322	87	9	7	50	80	10	59.4	83.3	32	
Gage	67	13532	85	5	3	44	29	8	60.4	88.5	18	
Gage//Cnn Sel/1279A4-III-16 501316	68	68-1373	93	6	4	48	90	11	59.8	80.4	39	
Cnn Sel/1279A4-III-16 501316	69	68-1323	93	14	8	51	24	15	59.9	94.0	7	
Gage	70	13532	89	5	2	43	35	13	60.8	83.7	31	
Gage/4/Mida/2/Kyl117A/3/Cnn/- 1279A4-III-16	71	68-1374	81	6	4	48	90	18	59.8	72.0	55	
Mida/2/Kyl117A/3/Cnn/1279A4-III-16 57454	72	68-1324	59	10	7	50	65	18	60.6	73.2	49	

1/ Mean of four replications

C.V. = 17.0%

L.S.D. .05 = 19.2 bushels