Spring Wheat

The spring wheat work was reduced this season because of budget limitations. The reduction was made in the off-station work. In the main, spring wheat work consisted of yield nurseries and one milling and baking nursery.

The yield nurseries were as follows: (1) dryland advanced yield, (2) irrigated advanced yield, (3) uniform Western Regional white wheat, and (4) the milling and baking plots.

Dryland Advanced Yield

The entries in this nursery consist of breeding material and standard varieties. The promising lines from other breeding programs are also included in this nursery.

There were twenty-eight entries in the 1961 nursery planted in four row plots and four replications. It was located in field number A-1b.

Yields were below normal for this location. Stripe rust was found on some lines, however, the majority of the hard red lines were quite resistant. There were no significant differences in this nursery and the C.V. is a little high. There was considerable difference due to replications in this test. See Table XVII.

Irrigated Advanced Yield

This nursery has the same entries as in the dryland nursery.

This nursery was located in field number Y-8. Stripe rust was found on some lines in this nursery. The mean yield for this nursery was 42.2 bushels per acre or somewhat less than expected under these conditions. A hail storm on September 1, 1961 did considerable damage to this nursery and thus accounts in part for the reduction in yield. Table XVIII shows yield and agronomic data for this nursery.

Uniform Western Regional White Wheat

This nursery is grown throughout the western states of the United States. Entries are supplied by many breeders and workers throughout the western states.

Stripe rust was quite severe in this nursery and many lines were found to be susceptible. Also there are many lines quite superior in yield, in disease resistance, and lodging resistance to Lemhi, which is the currently recommended variety. C.I. No. 13641 is the highest yielding line in this nursery. Table XIX gives the agronomic data for this trial.

Milling and Baking Plots

These plots are grown to secure sufficient seed for milling and baking tests. The material is planted with a field drill in strips, one drill width. The strips are harvested with a field combine.

The only data secured from this material this year was heading dates. The hail storm plus wet weather reduced the quality of the plots. The hail knocked out about fifty percent of the grain. Quality data is not available at this writing. See Table XX.

Table XVII. Agronomic data from dryland advanced yield spring wheat nursery at Creston, Montana in 1961. Four row plots, four replications, field number A-1b.
Date Planted: April 24, 1961 Date Harvested: August 18, 1961 Size of Plot: 16 square feet

Variety	C.I. No.	Heading Date	Stripe Rust 1 - 4	Ht. in In.	Grams Per Plot I	II	III	IV	Total Grams	Yield Bu./ Acre	Bu. Wt. in Pounds
Minn II-53-404	13465	6-23	2.5	29	140	245	270	255	910	22.8	59.2
Nrn 10-Bvr 14 x Cnt	B59-17	6-26	4.0	21	165	310	295	320	1090	27.3	60.0
Canthatch	13345	6-25	1.0	26	140	215	340	280	975	24.4	58.5
Thatcher x Lee	B55-5	6-25	1.0	27	200	265	265	365	1095	27.4	58.6
Chinook	13220	6-26	1.0	28	195	260	290	280	1025	25.6	58.0
Centana x Rescue	B61-31	6-29	1.0	31	165	275	235	250	925	23.1	60.0
Lee^2 x Kenya Farmer	13463	6-23	2.5	29	175	315	325	300	1115	27.9	58.0
II-50-17 x Pilot	B61-95	6-26	1.0	28	180	750	265	345	1540	38.5	59.0
N.D. 81 x Lee, N.D. 137	13349	6-25	1.5	30	150	230	255	265	900	22.5	57.0
Lee	12488	6-23	1.0	29	195	245	245	255	940	23.5	56.5
K. 338 x Lee	B61-88	6-26	1.0	30	205	300	330	325	1160	29.0	59.0
Centana	12974	6-28	2.0	30	210	255	295	370	1130	28.3	59.4
Sawtana	13304	6-28	1.0	29	230	300	250	275	1055	26.4	59.0
Nrn 10-Bvr 14 x Cnt	B59-1	6-27	4.0	26	265	280	260	355	1160	29.0	58.5
Pembina	13332	6-25	2.0	27	225	235	270	290	1020	25.5	57.5
Thatcher	10003	6-26	1.5	24	225	235	295	340	1095	27.4	57.6
Ceres	6900	6-27	2.0	28	195	250	310	285	1040	26.0	60.0
K.F. x Centana	B61-107	6-28	2.5	30	209	285	305	335	1134	28.4	58.0
B49-102 x K. 338	B61-18	6-26	1.0	31	215	315	305	375	1210	30.3	61.5
Rescue	12435	6-26	1.0	31	170	230	275	270	945	23.6	59.0
Selkirk	13100	6-27	1.0	28	145	265	305	305	1020	25.5	57.4
Conley x N.D. 40-2, ND 102	13462	6-27	1.0	28	155	240	275	320	990	24.8	57.3

Continued ——

Table XVII. (Continued)

Variety	C.I. No.	Heading Date	Stripe Rust 1 - 4	Ht. in In.	Grams Per Plot I	II	III	IV	Total Grams	Yield Bu./ Acre	Bu. Wt. in Pounds
1953 x Lee	13242	6-24	1.0	27	180	250	270	320	1020	25.5	58.3
P.I. 56219-7 x Rescue	B60-41	6-26	2.0	28	190	190	275	285	940	23.5	59.5
K. 338 x Lee	B61-91	6-23	3.0	30	205	240	315	320	1080	27.0	57.2
Hrn 10-Bvr 14 x Cnt	B59-3	6-27	4.0	26	265	275	295	360	1195	29.9	59.0

1 Calculated missing plot

Mean Yield..... 26.6
S.E.$\bar{x}$. 2.7946
L.S.D. ..... NS
C.V. 10.51%

Analysis of Variance

Source	D.F.	Mean Square	F
Replications	3	68,360.860	21.88**
Varieties	25	4,343.464	1.39
Error	74	3,124.032	
Total	102		

Table XVIII. Agronomic data from irrigated advanced yield nursery at Creston, Montana in 1961. Four row plots, four replications, field number Y-8.
Date Planted: May 12, 1961 Date Harvested: September 8, 1961 Size of Plot: 16 square feet

Variety	C.I. No.	Heading Date	Stripe Rust 1 - 4	Ht. in In.	Lodging %	Grams Per Plot I	II	III	IV	Total Grams	Yield Bu./ Acre	Bu. Wt. in Pounds
Minn II-53-404	13465	7- 3	2.0	44	60	190	535	375	440	1540	38.5	56.2
Nrn 10-Bvr 14 x Cnt	B59-17	7- 8	4.0	33	45	345	570	380	390	1685	42.1	56.5
Canthatch	13345	7- 6	1.5	40	78	386	530	550	365	1831	45.8	57.0
Thatcher x Lee	B55-5	7- 5	1.0	38	73	454	520	520	525	2019	50.5	56.5
Chinook	13220	7- 6	1.5	48	80	405	490	405	455	1755	43.9	59.0
Centana x Rescue	B61-31		1.0	50	52	345	470	435	410	1660	41.5	59.0
Lee^2 x Kenya Farmer	13463	7- 3	1.0	44	60	480	525	460	530	1995	49.9	57.0
II-50-17 x Pilot	B61-95	7- 6	1.0	46	40	290	465	410	255	1420	35.5*	59.0
N.D. 81 x Lee, N.D. 137	13349	7- 6	1.5	37	15	270	360	440	350	1420	35.5	55.5
Lee	12488	7- 3	1.0	40	53	355	360	490	490	1695	42.4	55.4
K. 338 x Lee	B61-88	7- 4	1.5	48	37	375	350	365	455	1545	38.6	58.0
Centana	12974	7- 9	2.5	46	45	440	430	395	390	1655	41.4	57.0
Sawtana	13304	7-10	1.0	48	88	475	525	520	510	2030	50.8	58.0
Nrn 10-Bvr 14 x Cnt	B59-1	7- 9	4.0	37	80	315	355	325	320	1315	32.9**	55.4
Pembina	13332	7- 5	1.0	40	98	434	350	480	360	1624	40.6	56.5
Thatcher	10003	7- 6	1.0	40	100	515	415	420	470	1820	45.5	56.5
Ceres	6900	7- 8	2.5	44	72	445	300	335	340	1420	35.5*	58.0
K.F. x Centana	B61-107	7- 8	3.0	47	70	460	455	420	450	1785	44.6	57.0
B49-102 x K. 338	B61-18	7- 8	1.0	50	72	555	505	550	515	2125	53.1	58.5
Rescue	12435	7- 7	1.0	46	98	375	460	290	370	1495	37.4	55.5
Selkirk	13100	7- 6	1.0	45	42	415	380	435	320	1550	38.8	55.1
Conley x N.D. 40-2, ND 102	13462	7- 7	1.0	46	37	405	355	451	365	1576	39.4	57.0

Continued ——

Table XVIII. (Continued)

Variety	C.I. No.	Heading Date	Stripe Rust 1 - 4	Ht. in In.	Lodging %	Grams Per Plot I	II	III	IV	Total Grams	Yield Bu./ Acre	Bu. Wt. in Pounds
1953 x Lee	13242	7- 4	1.0	46	30	475	475	555	470	1975	49.4	57.4
P.I. 56219-7 x Rescue	B60-41	7- 7	2.0	43	98	420	385	440	390	1635	40.9	58.5
K. 338 x Lee	B61-91	7- 2	3.0	44	45	495	535	425	435	1890	47.3	56.9
Nrn 10-Bvr 14 x Cnt	B59-3	7- 8	4.0	36	100	375	420	330	330	1455	36.4*	54.5

Hailstorm: September 1, 1961
Note: Thatcher is used as a check in this nursery
* Varieties yielding significantly less than the check (5%)
** Varieties yielding significantly less than the check (1%)

Mean Yield..... 42.2
S.E.x. 3.0039
L.S.D. (5%)..... 8.5
L.S.D. (1%)..... 11.2
C.V. 7.12%

Analysis of Variance

Source	D.F.	Mean Square	F
Replications	3	8,397.667	2.33
Varieties	25	12,155.720	3.37**
Error	75	3,609.360	
Total	103		