

YEAR: 1964

TITLE: Small Grain Investigation (Spring Wheat) 5023

LOCATION: Northwestern Montana Branch Station and several off-station locations.

PERSONNEL: Leader - Vern R. Stewart
Cooperator: F. H. McNeal

DURATION: Indefinite

OBJECTIVES:

1. To determine the adaptation of new and introduced spring wheat varieties and selection by comparison with recommended varieties.
2. To evaluate material from spring wheat breeding program in Montana and other stations.

EXPERIMENTAL DESIGN AND PROCEDURES:

Standard nursery procedures were used in the variety testing program. The station nurseries were grown four row plots, replicated four times. A randomized block design was used in all nurseries. The off-station nurseries were grown in single row plots, replicated four times.

The advanced yield hard red spring nursery contained 27 entries, the western regional soft white, 26 entries and the off-station, 12 entries.

RESULTS AND DISCUSSION:

Yield in the hard red spring wheat nursery was about average. However, test weights are below average. This was due to the continual rain that fell during the harvest period. The nursery was cut when the grain was high in moisture and was dried before cleaning and weighing. The Durm entries were higher in yield than in past seasons. Using Centana as check only two entries were significantly higher in yield, namely, C.I. 13777 and C.I. 13596. Table 1 gives complete data for this study.

Stripe rust was again a factor in the white wheat nursery. There was a direct relationship between variety yield and the stripe rust and coefficient. The larger the coefficient the lower the yield. See Table 2 for complete data on this study.

Three off-station nurseries were seeded in the spring of 1964. Only two were harvested. The nursery in Missoula County was poor in stand and a large number of wild oats. Therefore, it was not harvested.

Ravalli County

C.I. 13641 was the highest yielding entry in this nursery, with 45.6 bushels per acre. Only three replications were harvested because of Quackgrass infestation in the 4th replication. Test weights were fair in this study. Table 3.

Spring Wheat (con't)

Lake County

Stands were excellent in this nursery. Growing conditions were optimum this season in this location.

Yields are good, but test weight quite low because of the rain during the harvest season. C.I. 13736 and C.I. 13641 are the two top yielding lines in the nursery. Table 4.

Table 5 is a summary of white wheat varieties grown at Creston, Montana, 1956-1964 inclusive. This summary indicates that most lines are superior to Lemhi.

FUTURE PLANS:

Continue in a limited way spring wheat varietal studies.

SUMMARY:

1. Yields were average or above this season. Continuous rain during the harvest season caused a reduction in test weight.
2. Most varieties now being grown are superior to Lemhi because of the stripe rust problem.

Table 1. Agronomic data obtained from the advanced yield nursery grown at Creston, Montana on dryland in 1964. Field No. Y-1

Date Seeded: May 11, 1964 Date Harvested: Sept. 28, 1964
Size of Plot: 16 square feet

Variety	C.I. or Selection	First Headed	Plant Ht.	Lodging		Test Wt.	Bu./A
				Sever-ity	Preve-lance		
R.L. 2520 x Tc ⁶ -K.F.	13777	7-11	43	5	71	59.2	68.9*
51-3549 x II-50-17	13596	7- 9	41	7	95	58.0	62.9*
(Nrn-Bvr x Tc)xB52-91	B61-146	7- 9	45	7	95	57.5	60.5
Lakota (Durum)	13335	7-10	45	5	51	58.0	59.1
Wells (Durum)	13333	7-10	47	6	55	59.5	57.1
Ceres	6900	7-12	46	8	97	58.5	56.6
N2211 x Centana	B60-86	7- 9	42	3	56	58.5	55.0
Sawtana	13304	7-14	44	9	99	57.5	51.0
R.L. 4125 x Tc ⁶ -Sr ⁶	13775	7- 9	40	4	74	56.2	50.8
II-50-17 x Pilot	B61-95	7-10	45	6	76	59.5	50.6
Justin	13162	7-10	44	4	59	57.6	50.6
(Nrn-Bvr x Cnt) x Cly	B61-138	7- 9	43	3	87	56.0	50.3
Langdon (Durum)	13165	7-10	47	5	74	57.5	49.2
II-50-17 x Rmr	13655	7- 9	45	6	95	59.5	49.1
B50-18 x Rescue	B61-69	7-13	45	5	99	57.1	48.0
Centana	12974	7-12	45	7	89	57.0	47.8
Thatcher	10003	7- 8	41	4	70	57.4	46.7
Chinook	13220	7- 9	47	6	74	57.0	46.7
II-50-17 x Pilot	B61-94	7- 9	45	7	79	60.0	45.0
Mindum (Durum)	5296	7-14	53	7	96	59.6	44.7
II-50-17 x Pilot	B60-82	7-10	43	8	77	58.4	43.1
Crim	13465	7- 8	42	4	79	55.4	43.0
Rescue x II-50-17	B61-23	7-10	45	8	82	55.1	42.4
Rescue	12435	7-12	43	8	79	56.5	42.2
Ftn-Tc ³ x II-44-29-Tc ²	13751	7-10	41	6	74	57.2	41.8
II-50-17 x Rmr	13654	7- 9	43	7	92	58.9	41.1
Cypress	13344	7-12	44	9	99	55.5	28.8

NOTE: Centana is used as a check in this nursery.

* Varieties yielding significantly more than the check (.05)

Analysis of Variance				\bar{x}	49.4
Source	D.F.	Mean Square	F.	S.E. \bar{x}	4.84
Replications	3	42010.000	4.168	L.S.D.(.05)	13.64
Varieties	26	26547.700	2.823*	C.V.%.....	9.47
Error	78	14482.579			
Total	107				