

TITLE: Spring Wheat

PROJECT: Small Grains Investigations MS 756

YEAR: 1981

PERSONNEL: Leader - Vern R. Stewart
 Technician - Todd K. Keener
 Cooperators: Montana Agricultural Experiment Station, MSU
 USDA-SEA-AR
 Montana Wheat Research & Marketing Committee

OBJECTIVES:

1. To determine the adaptability of new and introduced spring wheat varieties and selections.
2. To aid in basic genetic research programs in spring wheat.

EXPERIMENTS FOR 1981:

1. Private Variety Nursery
2. Western Regional Spring Wheat Nursery

RESULTS AND DISCUSSION:

Private Variety Nursery

Yields were noticeably lower this season in comparison to the previous two years. The highest yield of the nursery was 84.4 bu/a from the variety Aim. Aim and the variety NK 55114 were the two varieties which yielded significantly more than the check, Newana. The mean yield this year was 26% less than the yield mean for last year.

The three highest yielding varieties also had the highest test weights (Aim, NK 55114 and Fortuna). Lodging was severe in the varieties Fortuna, Solar and Walera and moderate in Fielder and Fieldwin (Table 1).

Stripe rust (*Puccinia striiformis* West) was detected throughout the nursery in the maturing stage of the grain. Susceptibility ranged from light to severe. Several of the varieties which were highly susceptible to this disease like Fielder and Fieldwin, had very low yields. One variety, Owen, was observed to be resistant to this disease organism.

Western Regional Spring Wheat Nursery

Yields for this nursery were also lower than previous year averages. Leaf rust, stripe rust, and dry weather during grain maturation could all have contributed to depleted yields.

Ten varieties yielded significantly higher than the check. Of those ten varieties several were new Washington entries that were crossed with Potam 70. Eleven varieties yielded significantly less than the check (Table 2).

Spring Wheat (con't)

Test weights were also noticeable lower when comparing previous season means. Several varieties were significantly higher than the check test weight yet just two varieties were above 57 lbs/bu.

Lodging was not a serious problem throughout the nursery although there were four varieties which exhibited severe lodging tendencies.

Stripe rust was not as prevalent in this nursery yet seven varieties were moderately to severely infected. Five entries were resistant to stripe rust. Table 2.

Table 3. Summary of the Western Regional Spring Wheat Nursery yields grown at the Northwestern Agricultural Research Center, Kalispell, MT, 1979-1981.

C.I. or State No.	Variety	1979	1980	1981	Ave.	Sta. Yrs.	% Owens
CI 4734	Federation	78.2	45.2	42.4	55.3	3	58.9
CI 17904	Owens (ID 0185)	114.8	93.9	73.5	94.1	3	100.0
ID 187	A 7243S-A-3-1	117.6	89.7	64.3	90.5	3	96.2
ID 183	ID 0053/A6596S-A-21-1	116.6	88.0	64.8	89.8	3	95.4
WA 6402	CI14482/K6202578R21	112.1	77.5	71.4	87.0	3	92.5
CI 17903	Mckay (ID0167)		98.1	93.9	96.0	2	114.7
ID 134	Bor/3/IT-60-101//TZPP/SN		95.6	91.1	93.4	2	111.5
UT 541774	Bannock/738-274-1		92.2	65.1	78.7	2	94.0
UT 541777	Bannock/738-274-1		83.7	65.5	74.6	2	89.1
UC 355	CI 13232/Ramona 50/Anza		76.7	51.7	64.2	2	76.7
UC 353	Bluebird Sib/Anza		71.0	58.7	64.9	2	77.5
ID 162	Borah/ID 0033		69.9	75.3	72.6	2	86.7
ID 172	Hyslop/Fielder		69.5	51.6	60.6	2	72.3
WA 6831	Potam 70/WA 6021			95.0	95.0	1	129.3
WA 6830	Potam 70/WA 6021			94.1	94.1	1	128.0
WA 6826	Potam 70/WA 6021			92.0	92.0	1	125.2
WA 6829	ID 65/Potam 70			88.2	88.2	1	120.0
WA 6833	ID 65/Potam 70			85.8	85.8	1	116.7
ID 170	MRN//TBR66/3/TZPP/AN3//B			85.0	85.0	1	115.6
WA 6827	Potam 70/WA 6021			84.2	84.2	1	114.6
ID 232	ID0118/Oasis/3/5*Twin/ID			83.7	83.7	1	113.9
WA 6823	CI 17689/Wared			80.9	80.9	1	110.1
WA 6828	Potam 70/WA 6021			80.3	80.3	1	109.3
WA 6824	Borah/CI 17689			76.1	76.1	1	103.5
ID 236	FLR/5/BBII/4/7*SFL/3/AS			74.2	74.2	1	101.0
ID 235	FLR/5/BBII/4/7*SFL/3/AS			73.4	73.4	1	99.9
WA 6832	LIFN*2/N1220//WA6150			71.4	71.4	1	97.1
ID 190	ID 0046/7/ID 0045/6/			70.6	70.6	1	96.1
WA 6825	Borah/CI 17689			70.3	70.3	1	95.6
ID 224	Fielder/5/BBII/4/7			66.5	66.5	1	90.5
ID 233	FLR/5/BBII/4/7*SFL			65.9	65.9	1	89.7
ID 234	FLR/5/BBII/4/7*SFL			61.3	61.3	1	83.4
UT 93	UT W498-259/Prospur			55.6	55.6	1	75.6
WA 6753	N 7000315/ID65			49.6	49.6	1	67.5
ID 226	BBII/2*Fielder			37.7	37.7	1	51.3
UT 1543	UT W498-259/S.D.871			30.9	30.9	1	42.0
UT 125	UT W498-259/Prospur			20.6	20.6	1	28.0
UT 326	UT W498-259/Prospur			19.9	19.9	1	27.1