

PROJECT TITLE: Evaluation of winter and spring wheat variety performance on fallow near Winifred

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OBJECTIVES:
Evaluate agronomic performance of spring and winter wheat varieties in fallow at Winifred.

RESULTS:
2002 Winter wheat trials were abandoned due to severe and variable soil burial in mid-April. Three plots were harvested to get an indication of what yield potential was there. These plots produced over 40 bushels per acre. This provides a plug for chemical fallow.

High rainfall in June offset the limited soil water, considering it was fallowed for 1.5 years, that was available at seeding. Unusually cool conditions in April and May help maximize the plant growth from the available soil water until the rains were received.

Yield – Spring wheat varieties seeded on fallow at Winifred averaged 39.5 bu/a. Reeder was the top yielder at 44.4 bu/a followed by MTW9420 and McNeal (Table 1). In Multi-year comparisons, Reeder, Westbred Express, West Bred 936 and the new variety Outlook have multi-year mean yields higher than the check variety McNeal (Table 2). Five varieties selected for sawfly resistance, Fortuna, Amidon, Rambo, Lew and Ernest, had the lowest grain yields.

Test Weight – Test weights for Winifred fallow spring wheat averaged 58.2 lbs/bu. Conan had the highest test weight at 60.5 lbs/bu and West Bred Express had the lowest test weight at 55.8 lbs (Table 1).

Protein – Grain protein content averaged 16.8 percent (Table 1). Scholar and Ernest had the highest grain protein content at 17.9 percent and Newana had the lowest grain protein content at 15.8 percent.

Plant Height – Plant heights averaged 23.4 across three locations (Table 2). Five entries had three location mean heights of just over 21 inches with Conan being the shortest at 21.1 inches.

SUMMARY:
The late spring rains provided the opportunity for the spring wheat varieties to demonstrate their yield potential. The higher yields also provided the opportunity to better assess the protein production potential of the various varieties.

FUTURE PLANS:
The winter wheat nursery will be continued at Winifred. The future of the spring wheat nursery is dependent on the MAES budget situation.

Table 1 2002 Winifred off-station spring wheat variety trial on tilled fallow
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ID	Variety	Grain Yield bu/a	Test Weight lbs/bu	Plant Ht. "	Protein Content %
ND 695	REEDER	44.4	60.1	21	16.8
MTHW9420	MTHW9420	42.3	57.3	21	16.4
PI574642	MCNEAL	42.1	59.1	23	16.7
WBEXPRES	WPB EXPRESS	41.9	59.0	19	16.9
PI549275	HI-LINE	41.7	56.9	20	16.1
WB 936	WESTBRED 936	41.3	55.8	20	17.7
PI607557	SCHOLAR	41.0	60.1	22	17.9
BZ992322	HANK	40.6	56.4	24	17
CI 17430	NEWANA	40.4	59.2	22	15.8
BZ992588	CONAN	40.2	60.5	24	16.2
MT 9806	MINNPRO/AMIDON	40.0	57.8	21	17.8
MT 9874	OUTLOOK	39.9	57.6	22	16.5
PI619086	EXPLORER	38.8	56.9	21	17.4
MT 9929	MT9401/MT9328	38.2	57.7	21	17.1
WB 926	WESTBRED 926	38.0	56.2	20	17.1
CI 13596	FORTUNA	37.5	59.1	24	16.3
PI527682	AMIDON	36.5	58.2	23	16.5
C982-324	RAMBO	35.6	59.2	21	16.6
CI 17429	LEW	35.6	59.4	24	17.1
PI592761	ERNEST	34.1	58.4	24	17.9
Mean		39.51	58.25	21.6	16.8
CV (S/MEAN) % =		10.84		9.32	
LSD(0.05 by t)=		7.078		4.214	

Seeded: 19-Apr-02
 Harvested: 19-Aug-02
 Fertilizer: 50 lbs 20-20-20-10 w/seed
 Apr-Jly precip: 9.02"

Table 2
 Exp. 9973
 Winifred spring wheat on fallow multi-year yield summary of selected varieties
 Central Agricultural Research Center, Moccasin, Montana

Selected Varieties	1998	1999	2000	2001	2002	Mean	McNeal Same Yrs
	bu/a						
McNeal	47	37	31	24	42	36.2	—
Grandin	46	36	28	22	—	33.0	34.8
Fortuna	39	36	29	24	38	33.1	36.2
Rambo	43	35	23	25	36	32.3	36.2
Lew	34	31	28	27	36	31.1	36.2
Hi-Line	46	35	27	26	42	35.1	36.2
Ernest	41	32	28	24	34	31.8	36.2
Fergus	44	34	24	—	—	34.0	38.3
WB Express	48	43	30	29	42	38.4	36.2
WestBred 936	53	38	27	26	41	37.1	36.2
Scholar	38	37	27	29	41	34.4	36.2
MTHW 9420	44	37	28	25	42	35.3	36.2
Conan (BZ 992588)	—	37	22	29	40	32.0	33.5
Reeder (ND 695)	—	40	30	30	44	36.1	33.5
Outlook (MT 9874)	—	—	—	28	40	34.1	33.1
Nursery Mean	42.5	35.5	27.5	26	39.5		

Winifred location is planted on fallow.