

PROJECT TITLE: 2003 Evaluation of spring wheat variety performance in recrop systems near Denton and Fort Benton.

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OBJECTIVES:
Evaluate the agronomic performance of spring wheat varieties in recrop or continuous crop environments in the southern triangle and central Montana.

RESULTS:
The Fort Benton was frosted on the 26 June 03. The nursery was just at heading stage. The frost damaged heads, white appearance by July 1, occurred in streaks across the nursery. Heads in portions of some plots were totally sterile while others were nearly undamaged. The site was abandoned. The Denton location started the season with decent soil moisture. However, scarce precipitation was received through June and July resulting in low grain yield and low test weights.

Westbred 936, Scholar and Fortuna produced the nurseries high yields at 18.5, 18.5 and 18.4 bu/a, respectively (Table 1). Few varieties had significantly lower grain yields. The mean test weight was 54.6 lbs with Ernest having the high test weight at 56.2 lbs/bu. Westbred 926 and McNeal had the high protein content at 18.3%. Scholar, Reeder, Explorer, Outlook and Choteau have multi-year mean grain yields equal or greater than McNeal (Table 2).

SUMMARY:
Drought conditions contributed to low yields and test weights and above normal grain protein levels. These trials continue to show how spring wheat varieties perform in less than ideal plant available water conditions.

FUTURE PLANS:
Uncertain because of MAES budget restrictions. If able, spring wheat variety evaluations on recrop will continue at Moccasin, Denton, and Geraldine.

Table 1 2003 Denton recrop spring wheat variety trial.
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ID	Pedigree	Plant Ht	Yield	Test Wt	Protein
		"	bu/a	lbs/bu	%
WB 936	WESTBRED 936	24	18.5	54.4	18.2
PI607557	SCHOLAR	25	18.5	56.2	17.7
CI 13596	FORTUNA	24	18.4	55.3	16.9
MT 9874	OUTLOOK	22	17.6	53.2	17.4
PI619086	EXPLORER	23	17.5	55.6	17.5
PI527682	AMIDON	24	17.5	56.0	16.9
WB 926	WESTBRED 926	25	17.4	53.0	18.3
BZ992588	Conan	22	17.4	55.9	17.4
MTHW9420	MTHW9420	22	17.3	53.3	17.2
C982-324	RAMBO	17	17.1	55.9	17.3
ND 695	Reeder	23	16.8	55.4	17.0
BZ992322	HANK	25	16.7	53.4	17.8
WBEXPRES	WESTBRED EXPRESS	21	16.4	53.1	17.0
MT 9918	MT9328/MT9419	22	16.4	54.3	16.7
CI 17430	NEWANA	21	16.3	55.6	16.8
PI592761	ERNEST	24	16.1	56.2	17.9
MT 9929	MT9401/MT9328	21	16.0	55.8	16.7
CI 17429	LEW	23	15.6	54.2	18.0
PI574642	MCNEAL	23	15.5	53.0	18.3
PI549275	HI-LINE	20	14.6	52.9	18.2
	OVERALL MEAN	22.55	16.88	54.64	17.5
	CV (S/MEAN) %		8.788	1.46	
	LSD(0.05 by t)		2.451	1.319	
Seed Date:	28-Apr-2003				
Fertilizer:	10-10-10-05 w/seed.	54 N soil test		30 TD urea N	
Harvest Date:	15-Aug-2003	Decent soil moisture at seeding			

Table 2 Denton recrop spring wheat multi-year yield summary of selected varieties, 1992-2003
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Selected Varieties	Year:	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	Ave.	McNeal Same Yrs
----- bu/a -----															
McNeal		27	92	22	43	24	47	34	17	29	29	22	15	33.4	
Fortuna		17	66	20	33	22	42	32	18	29	26	19	18	28.5	33.4
Rambo		25	74	20	37	23	43	29	12	25	27	18	17	29.2	33.4
Lew		27	65	20	36	23	40	29	13	25	27	20	16	28.4	33.4
Hi-Line		26	76	23	45	23	46	32	12	26	27	23	15	31.1	33.4
Ernest				19	41	25	46	29	17	24	28	18	16	26.3	28.2
WB Express					41	24	41	30	13	25	27	--	16	27.2	28.9
WestBred 936					39	26	43	35	16	26	31	21	18	28.3	28.9
Scholar						26	46	37	16	29	31	21	18	28.0	27.1
MTHW 9420						24	44	30	12	26	28	20	17	25.2	27.1
Reeder (ND 695)									18	28	32	24	17	23.8	22.4
Conan (BZ 992588)									14	26	28	22	17	21.5	22.4
Explorer (MTHW9710)										27	29	24	18	24.4	23.8
Outlook (MT 9874)											29	24	18	23.7	22.0
Choteau (MT 9929)											30	21	16	22.3	22.0
Nursery Mean		24.0	77.0	22.0	38.0	24.0	44.0	32.0	15.0	26.6	28.0	21.1	16.9		

The variety trial was planted re-crop on pea ground in 1992, re-crop on buckwheat in 1996, re-crop following millet in 1997, and lentils in 2002 & 03. All other years the trial was planted on fallow ground.