PROJECT TITLE: 2003 Evaluation of spring wheat variety performance in no-till recrop after pulse crop system near Moccasin.

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

RESULTS:
2003 Spring wheat variety trial following lentils was established at the Central Ag Research Center on land in its eighth year of continuous no-till annual cropping (since 1996). The current rotation is: pulse – spring wheat – canola/mustard – barley – barley – winter wheat – pulse crop. The Moccasin location experienced dry conditions through the winter than had much above average precipitation April through early May. The growing precipitation dwindled to almost nothing from June 10 through the first half of July. Field conditions at seeding were good with very little residue to obstruct the drill and good soil moisture. Cool temperatures through April into early May slow seed germination and seedling emergence. Dry conditions coupled with much above average temperatures in the mid to late growing season severely stressed the spring wheat. The droughty weather in combination with the variable shallow soils resulted in extremely variable yield results. The spring wheat ripen earlier than usual but harvest was delayed some because of conflict with other harvests.

Yield were 10 to 15 bushels below pre-plant expectations. The 20 entries averaged 19.3 bu/a with McNeal, Outlook and Fortuna topping the yield list (Table 1). When Fortuna is one of the top yielder it indicates it was not a good spring wheat year. Test weights were severely impacted with the nursery averaging 54.3 lbs/bu. Scholar had the high test weight at 57.8 lbs/bu and WB 926 and MTW9420 had tail end test weights at 51.8 and 51.9 lbs/bu. Protein contents ranged from 18.3% for McNeal down to 16.7 for MT 9918. Heading occurred over a 4 day period, June 28 to July 2 (d 183).

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:
This trial will be continued in the same rotation.

Table 1 2003 Spring wheat variety trial recropped no-till into lentil stubble.

Exp 9970 Central Agricultural Research Center, Moccasin, Montana

ID	PEDIGREE	HEADDAT	PLANTH	YIELD	TESTWT	Protein
PI574642	MCNEAL	182	27	22.5	53.6	18.30
MT 9874	OUTLOOK	183	25	22.2	52.4	17.40
CI 13596	FORTUNA	182	29	21.5	54.6	16.90
MT 9929	Choteau	181	24	21.3	56.0	16.70
C982-324	RAMBO	183	24	21.0	54.1	17.30
PI527682	AMIDON	182	28	20.8	55.9	16.90
WB 936	WESTBRED 936	180	26	20.6	52.0	18.20
CI 17429	LEW	183	29	20.2	52.9	18.00
ND 695	Reeder	182	26	19.9	56.6	17.00
PI607557	SCHOLAR	182	28	19.2	57.8	17.70
WB 926	WESTBRED 926	180	25	19.1	51.8	18.30
CI 17430	NEWANA	183	27	18.9	55.9	16.80
PI592761	ERNEST	182	27	18.4	54.5	17.90
MT 9918	MT9328/MT9419	179	29	18.1	55.5	16.70
PI549275	HI-LINE	181	25	17.6	53.7	18.20
MTHW9420	MT8182/MT8289	181	27	17.3	51.9	17.20
PI619086	EXPLORER	179	27	17.3	54.5	17.50
BZ992322	HANK	181	24	17.2	54.8	17.80
BZ992588	Conan	181	25	16.9	54.8	17.40
WBEXPRES	WESTBRED EXPRESS	180	25	15.8	52.4	17.00
	OVERALL MEAN	181.3	26.28	19.3	54.3	17.46
	CV (S/MEAN) %	0.204	9.92	15.5	2.037	
	LSD(0.05 by t)	0.6115	4.309	4.944	1.828	

Seed Date: 21-Apr-2003 Herbicide: Preplant glyphosate and bromoxynil + 2,4D

Fertilizer: 10-10-10-5 w/seed 45 N preplant at urea in March

Harvest Date: 8-Aug-2003 Precip: crop yr: 12.41" GrowSea: 8.17"