PROJECT TITLE: 2005 Evaluation of winter wheat variety performance on no-till re-crop at Moccasin and Denton.

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OBJECTIVES:
Evaluate agronomic performance of winter wheat varieties in no-till re-crop (continuous) crop environments near Moccasin and Denton, Montana.

RESULTS:
The growing conditions for the 2005 winter wheat crop were generally good, though precipitation in the May-July period was below average. The Moccasin and Denton sites have been no-till continuous crop for a number of years with pulse and oilseeds included in the rotation along with winter wheat, barley and spring wheat. The continuous cropping has reduced yield levels slightly. Both of these sites are on relatively shallow soils, 2-3.5 feet in depth, and thus do not have soils with large water holding capacities. The use of broadleaf legume and oilseed crops has facilitated the use of a wider array of herbicides which has help managed wild oats, downy brome and other weeds often associated with cereal only systems.

Nematodes reduced yields and test weights at the Moccasin location (Table 1). The Denton location suffered herbicide drift so yield results carry little weight as they represent only one replication.

SUMMARY:
Yellowstone (MT00159) continued its outstanding yield performance at both locations. MT00159 continues to have outstanding yield performance as it has done in the three previous years. Yellowstone test weight is not outstanding but it is generally heavier than Paul. The protein levels indicate some nitrogen loss may have occurred at the Denton location. Nitrogen loss or tie up has been observed in some long term no-till fields at the CARC.

FUTURE PLANS:
CARC will continue to evaluate winter wheat varieties under no-till continuous crop environments in central Montana.

Table 1 2005 Moccasin no-till recrop winter wheat variety trial following continous crop barley.
Exp. 3870 Central Agricultural Research Center. Moccasin, Montana.

Cultivar/Line	Source	Entry	Yield bu/ac	Test weight lb/bu[1/]	Heading date d of y	Plant height in	Grain moist %	Grain Protein %
		#						
Paul	Montana, 2003	11	**38.5****	50.5	176.7	33.3	10.6	18.2
Yellowstone	Montana, 2005	15	**37.7***	51.8	175.3	35.6	10.7	17.2
Jerry	North Dakota, 2001	16	**35.7***	**52.5***	175.3	37.8	10.5	17.5
Wahoo	Nebraska, 2001	20	**35.7***	50.1	171.0	32.4	10.3	18.0
CDC Falcon	WPB/Sask, 1999	12	**35.1***	50.3	173.7	29.8	10.2	18.1
MT0097	Erhardt//Judith/Kestrel	14	**34.7***	**53.7***	176.7	34.7	11.1	17.9
Jagalene	AgriPro, 2002	21	**34.5***	**54.3***	173.0	32.3	10.9	15.7
Pryor	WestBred, 2002	9	**34.5***	**53.3***	177.0	28.6	10.9	16.5
MTW01133 (HWW)	NuWest/SD88191	19	**34.4***	**53.0***	171.7	29.8	9.9	16.3
MTCL0316 (IMI)	Big Sky/IMMIBC304-6	23	**34.2***	**53.2***	172.3	38.1	10.9	16.7
Promontory	Utah, 1990	7	**34.0***	**54.4****	175.0	33.7	11.0	16.2
Vanguard	Montana, 1995	4	**33.5***	**53.6***	175.3	35.7	10.5	18.1
Rocky	Agripro, 1978	6	**31.9***	**53.0***	173.0	36.0	10.7	17.6
Morgan	WPB/Sask, 1996	5	**31.8***	51.4	177.7	35.0	9.8	17.5
Tiber	Montana, 1988	3	30.7	**53.5***	177.3	36.3	10.9	18.3
BigSky	Montana, 2001	8	29.5	**53.7***	175.0	37.3	10.6	18.0
Neeley	Idaho, 1980	2	29.1	51.4	177.0	35.0	10.6	18.9
Rampart	Montana, 1996	1	29.1	**53.0***	176.3	35.3	10.2	18.7
MT01148	Judith/Blizzard	17	28.4	50.7	177.0	35.4	10.5	18.3
NuSky (HWW)	Montana, 2001	10	27.6	**53.4***	177.0	33.2	10.8	17.5
MTCL0318 (IMI)	Rampart/Fidel//Kestrel	24	27.1	**53.8***	174.7	35.3	10.4	18.4
MTCL0306 (IMI, HV	MTW9727/Fidel/Nuwest	22	26.9	51.7	173.7	32.7	10.7	18.3
MT1159CL (IMI)	Montana/WestBred, 200	18	26.1	48.6	175.3	31.6	10.6	18.0
Genou	Montana, 2004	13	21.8	52.0	175.7	36.6	10.6	19.4
Average			31.8	52.4	175.1	34.2	10.6	17.7
LSD (0.05)			6.8	2.3	1.2	3.2		
C.V. (%)			13.0	2.1	0.4	5.7		
P-value (Varieties)			0.0007	0.0010	<.0001	<.0001		

Seeded: 12-Oct-04
Harvest: 11-Aug-05
Fertilizier: 10-10-10-5 NPKS w/seed 80 N top dress urea
1/ Nematodes were the apparent cause for low test weights.

Table 2 2005 Denton no-till recrop winter wheat variety trial following continous crop hay barley.
Exp. 3870 Central Agricultural Research Center. Moccasin, Montana.

Cultivar/Line	Source	Entry	Grain Yield	Test weight	Plant height	Grain Protein
		#	bu/a	lbs/bu	in	%
Yellowstone	Montana, 2005	15	36.9	59.1	31.9	11.9
Pryor	WestBred, 2002	9	35.1	61.4	26.4	10.9
MT0097	Erhardt//Judith/Kestrel	14	33.4	60.7	28.3	12.4
MTCL0316 (IMI)	Big Sky/IMMIBC304-6	23	32.8	61.5	28.7	11.4
Promontory	Utah, 1990	7	32.4	62.1	30.3	12.4
Morgan	WPB/Sask, 1996	5	32.3	61.2	29.1	11.2
Jagalene	AgriPro, 2002	21	32.0	62.1	31.5	11.9
NuSky (HWW)	Montana, 2001	10	31.9	61.7	29.5	11.6
Wahoo	Nebraska, 2001	20	31.1	59.7	26.4	10.8
CDC Falcon	WPB/Sask, 1999	12	30.8	59.7	25.2	11.4
Tiber	Montana, 1988	3	30.8	62.2	32.7	11.1
Rocky	Agripro, 1978	6	30.2	61.4	34.6	11.9
Neeley	Idaho, 1980	2	29.1	60.6	28.7	11.5
Genou	Montana, 2004	13	28.5	60.0	29.1	12.1
MT1159CL (IMI)	Montana/WestBred, 2004	18	28.2	57.7	32.7	12.8
Jerry	North Dakota, 2001	16	28.0	60.4	31.9	12.8
Vanguard	Montana, 1995	4	27.2	60.4	29.5	12.3
MTW01133 (HW\	NuWest/SD88191	19	27.1	61.0	24.8	11.8
BigSky	Montana, 2001	8	25.5	60.9	32.3	11.8
MTCL0306 (IMI, H'	MTW9727/Fidel/Nuwest	22	22.6	60.3	29.9	11.9
Rampart	Montana, 1996	1	22.3	59.2	31.5	12.7
Paul	Montana, 2003	11	22.2	57.8	27.6	11.7
MTCL0318 (IMI)	Rampart/Fidel//Kestrel	24	21.8	60.2	28.3	12.4
MT01148	Judith/Blizzard	17	18.9	60.9	26.8	12.9
Average			28.8	60.5	29.5	11.9
LSD (0.05)						
C.V. (%)						
P-value (Varieties)						

Seeded: 30-Sep-04
Harvested: 9-Aug-05
Fertilizer: 10-10-10-5 NPKS W/seed 60 lbs N as urea topdress
Spray drift damage all but one rep. Therefore no statistics are available.