PROJECT TITLE: Evaluation of agronomic performance of winter wheat varieties under no-till fallow near Winifred, Montana.

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OBJECTIVES:
Evaluate the relative agronomic performance of cereal grain varieties and development lines under no-till fallow environments in central Montana.

METHODS:
Trial was seeded with a five row double disk drill designed for no-till applications with serrated offset disk openers. Row spacing is 11 inches (accommodates a 4 ft header). The target seed depth is ½ to 1 inch into the soil. Starter, "pop-up", fertilizer is placed with the seed at a rate of NPKS: 10+10+10+05 lbs per acre. Top dress nitrogen, 60 lbs/a, was applied by the grower. Surface layer was dry at seeding, but sub moisture was good. Grower applied the herbicides. Yield is determined from three replications, test weight from two reps, and protein content from one rep per nursery.

RESULTS:
Growing conditions on fallow ground were good for winter wheat in the Winifred area. The nursery had problems with run-off water. It was placed in a location where run-off would not normally be a problem. Apparently, snow or ice bridging caused water flow across instead of down the gradient causing some soil erosion in the plot area. Nursery yields were lower than the surrounding field and more variable.

Neeley had the highest mean yield. However, due to nursery variability there were no significant yield differences (Table 1). Jagalene had the highest test weight and Rampart had the highest grain protein content. Wahoo and Pryor, with 65.6 and 64.8 bu/a, respectively, have four year mean yields slightly higher than the yield check Yellowstone (Table 2)

SUMMARY:

Wahoo has been an outstanding wheat producer at the Winifred location as reflected in its top multi-year mean yield. No known acres of Wahoo are grown in Montana. Yellowstone and Pryor are similar to Wahoo in yield, so there is probably no reason for growers to make a significant effort to obtain Wahoo seed.

FUTURE PLANS:
These trials will be continued in 2009 provided funding is available.

Table 1 2008 Winifred winter wheat variety performance evaluation.
Exp 3874 Central Agricultural Research Center. Moccasin, Montana

Cultivar/Line	Origin/Pedigree	Entry	Plant Height	Grain Yield	Test Weight	Protein Content
			"	bu/ac	lb/bu	%
MT0552	(Wesley sib, N95L159)/CDC Clair	23	30	79.5	61.7	10.7
Neeley	Idaho, 1980	4	34	75.5	61.6	10.9
Norris (CL)	Montana/WestBred, 2005	16	31	73.8	62.5	11.6
Pryor	WestBred, 2002	9	29	73.2	61.5	10.5
Promontory	Utah, 1990	11	32	72.9	63.0	10.3
CDC Falcon	Sask/WestBred, 1999	2	27	72.1	60.6	10.3
Jagalene	AgriPro, 2002	6	28	71.1	63.2	10.8
Yellowstone	Montana 2005	10	28	70.2	61.2	11.8
Genou	Montana, 2004	1	33	69.8	61.2	10.7
MT0495	MT9640/NB1133	20	32	69.4	61.4	10.0
Hyalite (CL, HWW)	Montana/WestBred, 2005	15	31	68.7	62.3	11.6
Jerry	North Dakota, 2001	13	32	68.6	60.5	10.3
MTS0531 (HWW)	L'Govskaya 167/Rampart//MT9409	21	27	68.2	61.4	12.3
NuSky (HWW)	Montana, 2001	12	33	68.1	62.4	11.7
MTS04114 (HWW)	L'Govskaya 167/Rampart//MT9409	18	28	66.7	61.5	13.1
Tiber	Montana, 1988	7	31	65.7	62.0	13.4
Ledger	WestBred, 2004	5	29	64.5	61.4	11.0
MTS0532 (HWW)	L'Govskaya 167/Rampart//MT9409	22	31	64.4	61.3	11.7
Wahoo	Nebraska, 2001	14	27	63.9	59.2	12.6
Bynum (CL)	Montana/WestBred, 2005	17	35	62.7	61.4	12.2
Carter	WestBred, 2006	24	26	61.7	61.0	11.4
Rocky	Agripro, 1978	8	36	57.9	61.9	9.3
MTS04120	L'Govskaya 167/Rampart	19	35	56.1	61.7	13.0
Rampart	Montana, 1996	3	33	55.6	61.0	12.0
Average			30.8	67.5	61.5	11.4
P-value (Varieties)				0.32	<.0001	
C.V. (%)				11.3	0.7	
LSD (0.05)				ns	0.9	

Seeded: 17-Sept-07 no-till in chem-fal Soil: temp: 12 C Moist Depth: 24"
Fertilizer: NPKS w/seed 10+10+10+05 Topdress N= 60 lbs Harvest:15-Aug-08
Comment: Producer cut an excellent yield, >80 bu/a, the plot was variable due to runoff erosion apparently caused by snow, ice or stubble bridging in normal water channel.

Table 2 **2008 Winifred fallow multi-year winter wheat variety performance**
Exp. 3874 **Central Agricultural Research Center. Moccasin, Montana.**

Cultivar	2005	2006	2007	2008	Average	Yellowstone same Yrs.
				bu/a		
Yellowstone	54	61	71	70	64.1	64.1
Bynum (CL)	46	53	55	63	54.3	64.1
CDC Falcon	55	52	63	72	60.4	64.1
Genou	49	57	63	70	59.7	64.1
Hyalite (CL,HW	56	60	65	69	62.2	64.1
Jagalene	56	55	59	71	60.2	64.1
Jerry	48	54	58	69	57.3	64.1
Ledger		59	59	65	61.0	67.3
Morgan	58	58	59		58.4	62.0
Neeley	50	57	66	76	62.1	64.1
Norris (CL)	55	58	59	74	61.5	64.1
NuSky (HW)	53	55	61	68	59.4	64.1
Promontory	51	51	62	73	59.3	64.1
Pryor	58	60	68	73	64.8	64.1
Rampart	42	53	60	56	52.5	64.1
Rocky	48	60	58	58	55.7	64.1
Tiber	53	60	51	66	57.4	64.1
Wahoo	60	65	73	64	65.6	64.1
Average	52.5	56.9	61.5	67.5		

2008 had soil washing from runoff and lower yields than producer field.