PROJECT TITLE: 2005 Evaluation of winter wheat variety performance on fallow at Geraldine and Winifred.

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OBJECTIVES:
Evaluate agronomic performance of winter wheat varieties in crop fallow environments near Geraldine and Winifred, Montana.

RESULTS:
The soil water holding capacity of some deeper soils in the Geraldine and Winifred areas relative to average annual precipitation make crop fallow systems more viable than continuous cropping systems.
The variety yield rankings were dissimilar between Geraldine and Winifred, even though the sites had similar soils and precipitation patterns.

Geraldine
The winter wheat variety trial had some sawfly and Hessian fly damage. The insect damage was erratic, so the data is not reported here. The winter wheat yields on fallow were more than 35 bushels higher than the spring wheat variety trial seeded on re-crop about ¾ of a mile away. Wahoo was the top yielder at 60.4 bu/a (Table 1). Eleven of the 24 entries had yields that were significantly less than the yield of Wahoo. Test weights were good. However, some varieties drop below 58 with MT0097 having the lowest test weight at 57.2 lbs/bu.

Winfred
Wahoo topped the Winifred variety nursery with a yield of 60.2 bu/a with 15 other entries having a statistically similar yield level (Table 2). Test weights were average at the Winifred site.

SUMMARY:
Wahoo has exhibited the ability to be a high yielder in the central Montana environments in crop fallow systems where soils are deep. The winter wheat nurseries yields were much higher than adjacent or nearby spring wheat trials. Thus showing why winter wheat is preferred on deep soils in a crop fallow crop cropping system.

FUTURE PLANS:
CARC will continue to evaluate winter wheat varieties under fallow environments in dryer central Montana sites with deeper soil.

Table 1 2005 Geraldine winter wheat variety trial on fallow.
Exp. 3872 Central Agricultural Research Center. Moccasin, Montana.

Cultivar/Line	Entry	Plant height	Grain Yield	Test weight	Grain Protein
	#	inch	bu/a	lbs/bu	%
Wahoo	20	33	60.4	60.5	14.9
Genou	13	37	59.0	60.5	15.3
Tiber	3	40	56.2	60.5	14.9
CDC Falcon	12	29	55.7	60.8	14.5
Morgan	5	39	55.3	58.0	14.9
MTCL0306 (IMI)	22	36	55.0	61.6	15.1
MTW01133 (HWW)	19	29	53.6	60.5	14.8
Rocky	6	38	53.5	62.4	14.7
Vanguard	4	36	53.1	60.5	15.6
Rampart	1	33	53.0	60.2	15.9
MTCL0316 (IMI)	23	38	52.9	60.8	13.5
Pryor	9	31	52.4	59.7	14.6
Paul	11	34	51.2	57.9	14.5
Neeley	2	36	50.1	59.4	14.8
Promontory	7	30	49.7	61.6	13.8
MT0097	14	36	49.6	57.2	15.0
MT00159	15	36	49.1	59.1	15.0
MT01148	17	34	47.8	58.1	14.4
MTCL0318 (IMI)	24	34	46.8	61.2	15.6
Jagalene	21	34	45.0	63.0	15.8
BigSky	8	37	44.7	57.5	15.9
Jerry	16	33	42.7	58.6	15.4
NuSky (HWW)	10	36	42.5	58.4	15.3
MTCL01159 (IMI)	18	34	42.3	58.9	13.5
MEAN TRT MEANS			50.9	59.84	14.9
CV (S/MEAN) %			11.57	0.6737	
LSD(0.05 by t)			9.674	0.834	

Seeded: 1-Oct-05
Harvested: 8-Aug-05
Fertilizer: 10-10-10-05 w/seed __N top dress urea

Table 2 2005 Winifred winter wheat variety trial on fallow.
Exp. 3873 Central Agricultural Research Center. Moccasin, Montana.

Cultivar/Line	Entry	Grain Yield	Test Weight	Plant Height	Grain Moisture	Grain Protein
Wahoo	20	**60.2****	60.7	35.2	7.9	12.2
Paul	11	**58.7***	59.9	34.5	8.0	12.0
MT0097	14	**58.6***	59.6	37.3	7.8	13.2
Pryor	9	**58.3***	59.9	33.6	7.5	12.0
Morgan	5	**57.7***	60.2	39.4	7.8	11.9
MTCL0306 (IMI, HWW)	22	**56.0***	61.5	37.5	7.8	12.7
Jagalene	21	**56.0***	**63.5****	35.3	8.2	12.9
MTCL0316 (IMI)	23	**55.3***	**62.3***	37.7	7.8	12.9
CDC Falcon	12	**54.9***	61.3	33.1	7.8	12.9
MTW01133 (HWW)	19	**54.8***	61.4	32.3	7.6	13.1
Yellowstone	15	**54.3***	59.9	36.6	7.5	13.3
NuSky (HWW)	10	**53.3***	60.2	37.9	7.7	12.6
Tiber	3	**53.2***	61.2	41.1	8.0	11.6
Vanguard	4	**53.1***	**62.3***	39.1	8.0	13.5
MT01148	17	**52.5***	58.5	37.8	7.6	14.3
Promontory	7	**51.0***	**63.1***	35.7	8.1	12.6
Neeley	2	49.9	60.2	37.8	7.9	12.5
Genou	13	49.4	61.3	37.9	7.4	13.5
Jerry	16	48.3	59.1	40.1	7.6	14.6
Rocky	6	47.6	**62.4***	37.4	8.2	13.0
MTCL0318 (IMI)	24	46.2	**62.3***	37.1	7.7	13.2
MT1159CL (IMI)	18	46.2	59.5	34.5	7.2	12.5
BigSky	8	43.0	59.8	39.7	7.7	13.9
Rampart	1	41.6	60.2	38.2	7.7	13.9
Average		52.5	60.8	37.0	7.8	13.0
LSD (0.05)		8.9	1.9	2.4	0.4	
C.V. (%)		10.3	1.5	3.9	2.8	
P-value (Varieties)		0.0023	0.0008	<.0001	0.0146	

Seeded: 4-Oct-04
Harvested: 3-Aug-05
Fertilizer: 10-10-10-05 NPKS w/seed __N as urea topdress