PROJECT TITLE: 2004 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 no-till recrop (continuous) crop environments near Geraldine and Winifred, Montana.

RESULTS:
The Geraldine site was abandoned due to variable stand establishment. The site was a no-till fallow site where the surface soil was strongly crusted. The double disk opener only penetrated the dry crust to a depth of about 0.5 to 0.75 inch. It was very difficult to get the Brown moisture probe through the two inch dry crust. However, once through the crust the moist soil went to a depth greater than 48". Sufficient moisture was received to sprout the seed, but insufficient to sustain some seed till the roots could penetrate the crusted surface and the seeding died. The farmer used an air seeder with hoe openers and had excellent stand establishment.

The soil at the Winifred site was less crusted, but stand establishment and seedling growth was not as good as the farmer had around the plots. The farmer used a hoe drill and placed the seed at a deeper depth. An interesting observation, the soil temperature at a two-inch depth was 8 degrees C colder at the Winifred site as at the Geraldine site. Early May spring moisture was good. However, the winter wheat crop ran out of moisture during grain fill causing the test weights to be light and erratic. The information generated is weak due to variation across the nursery.

SUMMARY:
The early maturing variety Jagalene had the highest yield (61.8 bu/a) and the highest test weight (61.4 lbs/bu) in the Winifred trial (See Table 1). Tiber had the lowest grain yield (45.6 bu/a) and Morgan had the lowest test weight (56.2 lbs/bu). Promontory had the high two year average yield of the entries grown in both 2003 and 2004.

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

Table 1 2004 Winter wheat variety performance near Winifred and 2 y average yield.
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Variety	Plant Height	Test Weight	Protein Content	2004 Yield	2003 Yield	2Y Ave. Yield
	inches	lbs/bu	%	bu/a	bu/a	bu/a
Big Sky	39.6	59.3	14.7	48.3	41.1	44.7
CDC Falcon	**31.2**	59.2	13.0	57.3	42.1	49.7
Genou	37.2	56.3	15.2	52.1	42.5	47.3
Jerry	38.4	58.5	14.0	57.0	44.4	50.7
Morgan	38.4	55.2	14.7	48.6	38.2	43.4
MT00159	38.4	57.0	16.1	52.5	50.5	51.5
MT0097	38.4	56.4	16.0	47.1	42.5	44.8
Neeley	36.0	57.6	16.3	52.4	41.5	47.0
NuSky	34.8	56.9	15.0	55.5	49.1	52.3
NuWest	**40.8**	58.0	14.9	51.1	42.8	47.0
Paul	32.4	55.5	14.6	52.6	41.1	46.9
Promontory	37.2	57.9	14.2	57.6	**52.3**	**54.9**
Pryor	32.4	57.8	15.3	57.9	48.5	53.2
Rampart	37.2	57.5	15.6	48.7	40.9	44.8
Rocky	39.6	59.1	14.3	56.5	45.0	50.8
Tiber	39.6	58.3	16.0	45.6	40.6	43.1
Vanguard	34.8	59.0	14.9	53.4	41.7	47.6
Wahoo	33.6	56.4	14.2	57.2		
Jagalene	32.4	**61.4**	14.6	**61.8**		
Millineum	34.8	60.2	13.9	60.5		
MTCL0115	33.6	56.2	13.5	56.7		
MT01148	36.0	58.8	14.5	59.5		
MT0177	**31.2**	59.4	13.6	59.8		
Mean	36.0	57.9	14.7	54.3		
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Seeded: 1-Oct-03 No-till plant following 2002 hay barley crop.
Fertilizer: NPKS 10-10-10-05 w/seed. 60 N topdress as urea.
Soil: Moist Soil depth: 28" Temp 2 inch depth: 9C