PROJECT TITLE: 2003 Evaluation of soft winter wheat variety performance under fallow at the Central Agricultural Research Center, near Moccasin.

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OBJECTIVES:
Evaluate agronomic performance, particularly winter hardiness, of soft winter wheat varieties in crop-fallow environments in the central Montana.

RESULTS:
The soft white winter wheat was seeded into tilled fallow soil on 20-September 2002. Emergence was uniform. The 2002-03 winter was relatively mild as some spring wheat over wintered in stubble. Not significant winterkill was observed. The April precipitation was much above average. May through July precipitation was much below average. June and July temperatures were above average by 0.5 and 5.0 degrees F. The nursery mean yield was about 15 bu below the ten-year average. The nursery mean test weight was 48.1 lbs/bu.

Several soft white entries topped the yield of the hard red check variety Neeley. KW960195p 7005 topped the nursery with a yield of 42.9 bu/a acre followed by Kmor at 41.3 bu/a (Table 1). MAC-1 and KW960195p 7005 had the high test weight values at 51.9 and 49.4, respectively. Eltan and Bruehl had the highest protein content at 19%. KW960195p 7005 was also the first entry to head. In the multi-year yield summary, Eltan's ten year mean yield (56.6 bu/a) is closest to Neeley's mean yield 57.9 bu/a). The average mean yield difference between Neeley and the soft white entries is 5.8 bu/a(Table 2). KW960195p 7005, which has only been evaluated two years, is the only entry with a multi-year mean yield greater than Neeley.

SUMMARY:
Eltan has been a fairly consistent high yielder over tens years of evaluation. Only in 1996, did its yield fall as much as 10 bu/a below the yield of Neeley. The soft white varieties evaluated do not have sufficient winter hardiness to be raised in areas which frequently have bare soils and windy conditions during the winter months.

FUTURE PLANS:
Replace the consistently low yielding varieties and continue to evaluate soft white winters for adaptation.

Table 1 2003 Soft white winter wheat variety performance evaluations.
Exp 5007 Central Agricultural Research Center. Moccasin, Montana.

ID	Pedigree	Trt	Headdate	Plant Ht	Yield	Test Wt	Protein
			d of y	"	bu/a	lbs/bu	%
KW960195	KW960195p 7005	1	169	32	42.9	49.4	18
PI536995	KMOR	7	173	31	41.3	48.5	16
CI 17954	HILL 81	14	173	36	39.9	49.1	18
CI 17419	DAWS	15	172	33	39.1	47.5	17
PI511673	MADSEN	9	171	34	38.6	47.7	18
PI552427	MACVICAR	8	172	31	38.4	48.1	17
CI 17909	LEWJAIN	12	174	31	37.7	47.5	18
CI 17860	NEELEY	2	171	39	37.1	51.9	17
PI583372	LAMBERT	16	170	37	36.4	46.4	17
MAC1	MAC-1	6	171	36	36.4	50.2	17
PI536994	ELTAN	3	174	34	36.1	46.1	19
PI558510	ROD	5	172	29	36.1	48.7	16
CASHUP	CASHUP	13	172	32	33.2	46.7	18
PI606764	Bruehl	4	174	30	32.1	43.9	19
CI 11755	STEPHENS	10	173	32	31.4	48.4	16
PI497672	MALCOLM	11	171	34	31.0	48.8	17
	OVERALL MEAN		171.7	33.23	36.73	48.06	17.4
	CV (S/MEAN)		0.6239	6.395	13.85	4.394	
	LSD(0.05 by		2.284	3.543	8.484	3.521	

Seed date: 20-Sep-02
Fertilizer: 10-10-10-05 w/seed 60N topdress urea
Harvest: 31-Jul-03 Precip: crop yr: 12.41" GrowSea: 8.17"

Table 2 Yield summary of selected soft white winter wheat varieties, 1993-2003
Exp. 5007 Central Agricultural Research Center, Moccasin, MT

Varieties	1993[2/]	1995	1996	1997	1998	1999	2001	2002	2003	Ave	Neeley Same Year
	bu/a										
NEELEY (HRW) [1/]	67	49	49	67	86	58	57	51	37	57.9	
ELTAN	73	47	39	73	75	59	58	49	36	56.6	57.9
ROD	75	--	--	52	72	54	48	50	36	55.2	60.5
DAWS	78	50	41	53	73	50	49	51	39	53.8	57.9
LEWJAIN	70	52	32	60	76	54	55	46	38	53.6	57.9
KMOR	77	47	27	61	74	52	50	51	41	53.3	57.9
HILL 81	73	42	32	57	78	52	50	48	40	52.4	57.9
CASHUP		47	39	60	75	58	47	48	33	50.9	56.8
MACVICAR	76	43	18	57	70	53	47	49	38	50.1	57.9
MALCOLM	76	47	14	60	70	47	50	48	31	49.3	57.9
LAMBERT			31	42	79	50	51	52	36	48.8	57.9
MADSEN	70	39	23	47	71	55	49	50	39	49.1	57.9
STEPHENS	74	44	16	49	68	45	51	50	31	47.6	57.9
KW960195p 7005								50	43	46.3	44.3
MAC-1							46	45	36	42.7	48.5
Bruehl							52	44	32	42.6	48.5
Nursery Mean	71	45.1	28.7	55	72.8	53.6	50.4	48.8	36.7	51.3	

[1/] Neeley is used as a hard red winter wheat check.
2/ Neeley was in a different nursery in 1993.
1994 Nursery was damaged by wind blown soil and the 2000 nursery was damaged by hail.