

PROJECT TITLE: 2003 Evaluation of winter wheat variety performance in recrop trials near Denton.

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OBJECTIVES:

Evaluate agronomic performance of winter wheat varieties in recrop or continuous crop environments in the southern triangle and central Montana.

RESULTS:

2003 Denton winter wheat variety trial was re-cropped till-plant after hay barley. Moist soil depth at seeding was 15-18". Stand survival was good. Yields were slightly below average due droughty conditions through the winter and late spring. Deeper soil moisture allowed the kernels to develop and produce average test weights.

Pryor and Promontory were the two highest yielding varieties with 43.4 and 42.9 bu/a, respectively. Two selections from Promontory crosses placed third and fourth in yield. Once again, Rocky had the nursery high test weight with 62.5 lbs per bushels compared to a nursery mean of 60.5 lbs per bushel. MT0097 and Bighorn had the highest protein contents at 14.4 and 14.3%, respectively. The Neeley protein content is un-expectedly high. This may be due to a human error or a chance fluke protein sample. A single sample from a single rep is utilized to determine protein levels. This data point shows why more than one rep per treatment is preferred. Judith, Quantum 542 and Promontory are the only entries with multi-year yield means the same as or above Neeley at the Denton location (Table 2).

SUMMARY:

2003 No-Till recrop weather precipitation conditions were such that early maturity was favored. The later the maturity the greater the exposure to increased heat and reduced plant available moisture. The main factor missing was winter stress.

FUTURE PLANS:

Winter wheat variety evaluations will continue at Denton a continuous crop environment if possible. Richard Barber will be the cooperater as he has provided excellent exposure for this site through his seed plant's field tours.

Table 1 2003 Denton winter wheat variety performance on tilled hay barley recrop.
Exp 3871 Central Agricultural Research Center, Moccasin, Montana

ID	Variety	Plant Ht	Yield	Test Wt	Protein
		"	bu/a	lbs/bu	%
BZ96-919	PRYOR	29	43.4	60.4	12.2
PI555458	PROMONTORY	33	42.9	62.5	12.3
MT00159	Promontory/Judith	33	41.9	60.0	12.8
MT9982	Promontory/Judith	33	41.5	60.7	13.1
S94-4	CDC FALCON	30	40.6	61.5	13.5
MT9989	Blizzard/Arapahoe	35	40.6	59.9	12.5
MT9426	PAUL	32	39.3	59.4	13.0
PI584526	JUDITH	36	37.6	58.8	13.9
MTR9997	PI262605/MT7863//Redwin	33	37.5	61.5	13.2
MTS0031	MTS92015//Vanguard/Norstar	35	37.4	60.8	14.2
CI 17860	NEELEY	34	37.1	59.9	14.2
ND9257	JERRY	34	37.0	61.1	12.8
PI593891	VANGUARD	34	36.1	60.7	13.7
MTI01158	Fidel/Tiber	32	35.6	61.6	13.6
MT 9432	BIGSKY	36	35.6	61.4	13.7
CI 17879	ROCKY	33	35.4	62.5	13.4
PI517194	TIBER	37	35.1	61.4	12.9
MTW9441	NUSKY	33	34.3	60.1	11.7
RH78W296	BIGHORN	29	34.0	60.3	14.3
PI586806	NUWEST	34	33.8	60.0	12.8
MT0097	Erhardt//Judith/Kestrel	34	32.6	59.2	14.4
PI599336	MORGAN	34	32.3	59.0	13.4
PI593889	RAMPART	34	32.1	58.7	13.9
CI 17735	NORSTAR	36	28.9	60.7	12.3
	OVERALL MEAN =	33.46	36.8	60.5	13.2
	CV (S/MEAN) % =		5.485	1.876	
	LSD(0.05 by t)=		3.315	1.865	

Seed date: 20-Sep-2002

Fertilizer: w/seed none inadvertently shutoff. 60 N pre plant anhydrous.

Harvest Date: 25-Aug-2003 Soil water: 1.5 at seeding.

Table 2 Denton recrop winter wheat multi-year yield summary of selected varieties, 1990-2003
 Exp. 3801 Central Agricultural Research Center, Moccasin, MT

Selected Varieties	1990	1991	1992	1993	1995	1996	1997	1998	1999	2001	2002	2003	average	Neeley Same Yrs
	----- bu/a -----													
Neeley	55	64	24	66	82	44	62	61	45	48	51	37	53	53
Norstar	44	39	24	55	51 ^{1/}	35	54	51	35	40	44	29	41	53
Rocky	50	60	22	57	73	46	59	61	40	31	53	35	49	53
Tiber	52	55	28	65	73	42	65	61	46	45	49	35	51	53
Judith	59	61	26	55	87	45	59	66	45	42	54	38	53	53
Quantum 542	57	--	40	59	78	48	67	76	48	--	--		59	55
Bighorn	48	60 ^{2/}	23	56	73	46	64	67	39	30	52	34	48	53
NuWest	50	54	--	--	67	43	64	59	45	39	51	34	51	55
Vanguard					56	41	56	62	35	34	46	36	46	54
Rampart					76	40	51	55	37	33	--	32	46	46
Paul (MT 9426)										41	46	39	42	45
Promontory						53	56	65	47	37	52	43	50	50
BigSky							64	62	44	39	46	36	48	51
Morgan									46	34	49	32	40	45
Nursery Mean	49	53	22	56	73	43	60	60	42	36	49	37	48	53

1/ Suspected low germination resulted in low yields. 2/ Bighorn was planted on one end of the trial. 1994 stand was variable due to wind damaged. Thus abandoned. 1999 two reps were harvested. 2000 yields not reported due to plugged drill opener in some rows.