

PROJECT TITLE: Evaluation of spring wheat variety performance in off-station trials at Denton and Highwood.

PROJECT LEADER: D.M. Wichman, Agronomist - Moccasin

PROJECT PERSONNEL: L.E. Talbert, Spr. Wheat Breeder, Bozeman
S.P. Lanning, Spr Wh. Res. Assoc., Bozeman
J. Vavrovsky, Technician, Moccasin
Dave Phillips, Fergus Cty. Extension Agent
Judee Wargo, Chouteau Cty. Extension Agent

OBJECTIVES:
To evaluate the performance of spring wheat varieties in environments and cropping methods representative of the southern triangle and central Montana.

RESULTS:
The Denton trial was recropped on tilled buckwheat residue, while Highwood was recropped on tilled field pea ground. Spring wheat yields were below average at Denton and near average at Highwood.

Denton: Spring wheat yields ranged from 27 to 20 bu/a, with Newana producing the highest yield. Test weights averaged 58.8 lbs/bu, while proteins averaged 14.6%. Data are presented in Tables 1 & 2.

Highwood: Yields ranged from 36 to 30 bu/a, with Stoa producing the highest yield. Test weights averaged 59.3 lbs/bu, while proteins averaged 14.4%. Data are presented in Tables 3 and 4.

SUMMARY:
Varieties with high yield averages over 10 years at Denton are Amidon, Newana, Westbred 926, and Hi-Line. Several varieties have a 7 year average yield ranging from 32 to 34 bu/a at Highwood. McNeal has also done well in the 5 years that it has been in these trials.

FUTURE PLANS:
Spring wheat variety evaluations are to be continued at Denton and Highwood/Fort Benton.

Table 1 1996 Denton Spring Wheat Variety Performance Trial
Exp. 9971 Central Agricultural Research Center, Moccasin, MT.

Variety	Plant Ht.	Grain Yield	Test Wt.	Protein Content
	"	bu/a	lbs/bu	%
NEWANA	16	27.2	58.9	13.8
MT 9311	26	26.3	60.2	13.9
MT 9433	25	26.1	59.4	15.4
WESTBRED 936	22	26.0	59.1	15.1
FERGUS	25	25.8	59.6	15.2
MT 9410	27	25.3	59.6	14.1
WESTBRED 926	25	25.1	59.1	15.3
VANNA	18	25.1	56.2	12.9
ERNEST	27	25.0	59.9	14.8
MCNEAL	22	24.4	57.1	14.9
PIONEER 2375	24	23.9	59.2	14.1
WESTBRED EXPRESS	19	23.8	57.9	14.8
MTHW9420	22	23.6	59.0	14.7
RAMBO	21	23.5	59.1	14.0
HI-LINE	23	23.4	58.5	15.0
MT 9565	23	22.8	59.7	14.6
AMIDON	25	22.6	59.4	14.0
LEW	27	22.6	59.4	14.4
GLENMAN	24	22.4	57.9	13.9
MTHW9503	22	22.4	58.7	15.5
FORTUNA	27	21.7	59.5	14.6
STOA	25	20.9	58.3	15.4
LEN	21	20.4	58.0	15.2
TRENTON	25	20.0	58.6	14.7
GRANDIN	22	19.9	58.3	14.8
COPPER*		18.1	57.1	14.4
EXPERIMENTAL MEANS		23.61	58.82	14.61
F TEST FOR VAR. df=48		2.58	14.91	8.03
C.V. 1: (S/MEAN)*100		9.36	.69	2.64
LSD (0.05)		3.63	.67	.63

*Copper was planted on one end of trial (not randomized).

Planted: 4-30-96 recrop following buckwheat.

Fertilizer: 60 units N preplant.

Harvested: 8-14-96

Growing Season Precipitation (April-July): 5.16"

<u>April</u>	<u>May</u>	<u>June</u>	<u>July</u>
0.72"	3.02"	1.37"	0.05"

Producer: Richard Barber, Denton.

Table 2 Denton Off-Station Spring Wheat Multi-Year Summary
 Central Agricultural Research Center, Moccasin, MT.

Variety	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	Ave.	Newana Same Yrs
						*				*		
	-----bu/a-----											
AMIDON			48	26	60	23	83	23	39	23	41	41
LEN	37	25	40	26	52	21	72	20	37	20	35	40
STOA	39	23	40	25	57	25	80	22	39	21	37	40
GLENMAN		24	38	24	51	27	74	22	35	22	35	42
WESTBRED 926				24	61	19	78	25	41	25	39	40
GRANDIN				23	60	25	81	24	36	20	38	40
FORTUNA	37	17	38	23	62	17	66	20	33	22	33	40
RAMBO	44	24	42	22	49	25	74	20	37	23	36	40
LEW	34	22	40	22	50	27	65	20	36	23	34	40
NEWANA	45	26	43	21	65	25	81	20	44	27	40	--
HI-LINE			41	17	59	26	76	23	45	23	39	41
MCNEAL						27	92	22	43	24	42	39
FERGUS									36	26	31	35
WB EXPRESS									41	24	32	35
Mean	39	23	41	24	57	24	77	22	38	24		

*Planted recrop on field pea ground in 1992, recrop on buckwheat ground in 1996,
 all other years on fallow

Variety trials were located on Richard Barber farm.

The 1988 trial suffered some sawfly damage.

12/1

Table 3 1996 Highwood Spring Wheat Variety Performance Trial
Exp. 9972 Central Agricultural Research Center, Moccasin, MT.

Variety	Plant Ht.	Grain Yield	Test Wt.	Protein Content
	"	bu/a	lbs/bu	%
STOA	24	36.4	59.7	14.5
MT 9433	26	36.1	59.8	14.8
RAMBO	23	35.4	58.5	13.6
PIONEER 2375	25	34.5	60.0	14.1
WESTBRED 926	23	34.3	59.5	15.4
AMIDON	25	34.2	59.1	14.3
ERNEST	25	34.1	60.1	15.0
HI-LINE	22	34.0	58.5	15.2
MT 9410	24	33.4	60.2	13.8
WESTBRED EXPRESS	26	33.3	59.2	14.4
FERGUS	24	32.9	60.5	15.0
NEWANA	23	32.8	58.9	14.2
LEN	20	32.7	59.3	14.5
GRANDIN	21	32.7	59.3	14.9
MT 9311	24	32.5	59.6	13.6
LEW	21	32.5	60.0	13.8
TRENTON	22	32.4	59.1	14.7
WESTBRED 936	24	32.2	59.7	15.8
VANNA	21	32.1	57.3	12.4
MCNEAL	21	31.7	57.6	14.4
GLENMAN	20	31.5	58.4	13.6
FORTUNA	22	31.0	60.0	14.2
MT 9565	22	30.9	60.0	14.1
MTHW9420	21	30.1	59.3	14.7
MTHW9503	22	30.0	59.3	15.2
COPPER*		26.4	57.2	13.8
EXPERIMENTAL MEANS		32.95	59.32	14.41
F TEST FOR VAR. df=48		.85	3.13	9.96
C.V. 1: (S/MEAN)*100		9.48	1.30	2.77
LSD (0.05)		5.13	1.26	.65

*Copper was planted on one end (not randomized).
Planted: 4-25-96 recrop on field pea ground.
Fertilizer: 50# 18-46-0 w/seed.
Harvested: 8-14-96
Producer: Ron Long, Shonkin.

Table 4 Highwood Off-Station Spring Wheat Multi-Year Summary
Central Agricultural Research Center, Moccasin, MT.

Variety	1990	1991	1992	1993	1994	1995	1996	Ave.	NEWANA SAME YRS.
	-----bu/a-----								
AMIDON	45	25	15	40	36	46	34	34	32
LEN	37	25	12	40	34	42	33	32	32
STOA	38	34	12	41	37	37	36	34	32
GLENMAN	39	30	19	38	35	47	31	34	32
WESTBRED 926	44	31	11	41	34	37	34	33	32
GRANDIN	41	29	10	43	35	32	33	32	32
FORTUNA	36	33	12	36	35	42	31	32	32
RAMBO	35	27	15	43	36	46	35	34	32
LEW	40	24	23	41	31	43	32	33	32
NEWANA	35*	29	14	42	32	39	33	32	--
HI-LINE	40	22	12	44	32	44	34	33	32
MCNEAL			18	47	37	45	32	36	32
FERGUS						34	33	33	36
WB EXPRESS						41	33	37	36
Mean	38.9	28.2	14.2	40.8	34.3	40.8	32.9		

*Probable mixup of seed sources, interpret Newana rank with caution.
Variety trials were located at Ron Long farm .
The 1989 trial experienced severe hail damage.
All trials were planted on recrop ground.

File:99MY95.SWD