

PROJECT TITLE: Agronomic performance evaluation of Winter Wheat Cultivars near Ronan, MT.

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PROJECT COOPERATORS: Phil Bruckner, Winter Wheat Breeder and Jim Berg, Research Associate Bozeman, MT.
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OBJECTIVES:

To evaluate winter wheat cultivars for yield, test weight, harvest moisture, and protein in environments and cropping systems representative of western Montana.

RESULTS:

Winter wheat yields ranged from a low of 86 and 83 bu/acre for Erhardt and McGuire to greatest yields of 135 and 125 bu/acre for cultivars MT 9426 and Stephens, respectively (Table 1). All test weights exceeded 61 lbs/bu. Test weights over 64 lbs/bu were produced by Neeley, MT 9426, Nuplains, and Promontory. Neeley, Hill 81, Mac-1, Nuplains, and Malcom had slower moisture dry down than other cultivars. Percent protein in McGuire was 17.7 percent protein followed by several cultivars over 15 percent. Low protein was determined in Malcom at 12 percent. The irrigated nursery was planted on September 23, 1999 and harvested on August 8, 2000.

SUMMARY:

Despite below normal amounts of precipitation during head filling, reserve subsoil moisture and supplemental water permitted excellent yields and test weights. Several cultivars exhibited superior yield performance and produced excellent proteins. Consideration for future planting of these selections may be warranted.

FUTURE PLANS:

None.

Table 1. Agronomic data from the offstation winter wheat nursery grown at the Lake Farm in cooperation with Lake Seed Inc. Ronan, MT.

Cultivar	¹ Yield Bu/A	Test Wt Lbs/Bu	² Moisture %	² Protein %
MT 9426	135.3	64.5	13.0	12.6
STEPHENS	125.2	63.5	14.5	11.7
QUANTUM 542	122.7	63.4	12.6	15.5
PROMONTORY	122.6	64.6	13.2	13.1
BIGHORN	121.7	62.9	12.6	15.2
MT 9513	120.1	62.6	14.7	12.7
MAC-1	118.8	62.7	15.8	13.6
³ MALCOLM	118.3	61.6	15.5	12.0
DAWS	116.7	62.2	13.9	12.4
MADSEN	116.6	62.3	12.5	13.5
MTS9720	115.7	62.6	13.3	12.8
NEELEY	113.2	64.5	16.0	13.8
MTS9882	113.2	63.9	13.6	13.5
JUDITH	108.0	63.1	13.3	13.3
³ HILL 81	108.0	NA	15.6	12.2
MTW9441	107.0	62.4	15.0	14.5
HALT	106.3	63.0	14.6	14.4
RAMPART	105.0	63.4	10.4	14.7
VANGUARD	105.0	63.7	12.8	14.8
⁴ NUWEST	103.1	62.9	14.6	13.7
ROCKY	101.9	63.4	13.9	14.2
TIBER	101.1	63.7	14.2	15.1
PRONGHORN	99.1	63.0	13.4	15.4
BIGSKY	98.3	63.3	12.3	15.8
NORSTAR	93.5	63.7	14.2	13.6
MORGAN	92.8	62.5	12.0	13.6
⁴ NUPLAINS	91.8	64.2	15.8	15.0
ELKHORN	88.0	63.1	11.6	15.5
ERHARDT	85.9	64.0	12.2	14.8
MCGUIRE	83.2	61.5	12.1	17.7
Mean	107.9	63.2	13.6	14.0
⁵ LSD p=0.05	18.4	1.4		
C.V.	10	1		
Replicate F	4.68	0.52		
Replicate Prob (F)	0.0131	0.5965		
Treatment F	3.79	1.99		
Treatment Prob (F)	<0.0001	0.0133		

¹Yields adjusted to 13 % moisture.

²Moisture and protein (composite sample) 1 replicate only

³Soft white winter wheat

⁴Hard white winter wheat

⁵Data analyzed with GLM of SAS