

Project Title: Evaluation of Clearfield Winter Wheat Cultivars for Herbicide Tolerance – 2013

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Objective: To evaluate experimental lines for herbicide tolerance and agronomic performance in environments and cropping systems representative of northwestern Montana.

Results:

Seven experimental winter wheat lines, with genes for resistance to the imidazolinone herbicides, were planted in a split-plot design and replicated three times. A non-treated control was included to compare the effects of herbicide treatments where Beyond was applied at 2X rate (12 oz/A) with either MSO or NIS adjuvants.

Plants were assessed for herbicide injury with head deformation, which ranged from 40.3 percent for MTCS1202 to 0.0 percent for MTCS 1077. Yields ranged from 116.9 bu/A for MTCS1131 to 100.6 bu/A for MTCS 1203. Test weights ranged from 58.5 lb/bu for MTCS1131 to 56.5 for MTCS1203. All lines showed moderate to high susceptibility to stripe rust, which ranged from 56.7 percent for MTCS1077 to 71.7 percent infection for MTCS1201. Lodging ranged from 0.6 percent for MTCS1202 to 25.3 percent for MTCS1077. Plant heights ranged from 38.3 inches for MTCS1202 to 41.2 inches for MTCS1201.

Summary:

Significant differences in agronomic traits were not observed between herbicide treatments, but were observed among experimental lines (Table 2).

Table 1. Materials and Methods - Winter wheat IMI (mwbc) - 2013

Seeding Date:	9/25/12	Soil Type:	Creston Sil
Julian Date:	269	Soil Test:	264-6-166
Seeding Rate	80 lb/A	Fertilizer:	10-35-90-8.5-0.85/ TD 60-0-0
Previous Crop:	Peas	Pesticide:	NA
Tillage:	Conventional	Harvest Date:	8/8/13
Irrigation:	None	Julian Date:	220

Table 2. Winter wheat clearfield qualifications– 2013

	HDFRM %	SR %	HD Julian	HT in	LOD %	YLD bu/A	TWT lb/bu	MC %
Herbicide								
OX	17.3	68.1	158	39.7	4.0	109.5	56.9	11.7
2XNIS	18.4	59.3	159	40.5	16.2	110.7	57.7	12.0
2XMSO	17.4	66.2	159	39.7	2.4	107.8	57.5	11.8
LSD	6.4	18.2	0.9	2.1	14.8	9.7	0.9	0.4
Pr>F	0.8742	0.4452	0.2184	0.5832	0.1106	0.7207	0.1757	0.3056
Experimental Line								
MTCS1204	31.3	71.1	159	39.9	4.4	114.2	57.4	11.9
MTCS1201	0.2	71.7	158	41.2	5.3	101.1	56.9	11.8
MTCS1131	3.4	63.9	159	39.7	9.1	116.9	58.5	12.2
MTCS1261	38.7	63.3	159	41.0	1.1	109.1	57.3	11.7
MTCS1202	40.3	58.9	159	38.3	0.6	112.8	57.7	11.4
MTCS1203	9.8	66.1	158	39.5	6.9	100.6	56.5	11.8
MTCS1077	0.0	56.7	159	40.3	25.3	110.4	57.4	12.1
LSD	7.3	9.3	1.1	0.8	10.7	6.0	0.7	0.3
Pr>F	0.0001	0.0161	0.2289	0.0001	0.0008	0.0001	0.0001	0.0001

HDFRM: head deformation, SR: stripe rust, HD: heading, HT: height, LOD: lodging, YLD: Yield, TWT: test weight, MC: moisture content