

Project Title: Wild Oat Herbicide Screening Trial (4W3163)

Principal Investigator: Bob Stougaard

Objective: To evaluate the effects of herbicides and application rates on wild oat control and spring wheat yield.

#### Results:

Eight herbicides were applied at their respective 1X and 1/3X rates to evaluate the consistency of wild oat control in spring wheat. In addition, Rimfire Max plus Huskie was applied to compare adjuvant effects on crop tolerance and efficacy. The experimental design was a randomized complete block with three replications. 'Volt' hard red spring wheat was planted on seven inch row spacing's, to a depth of two inches on April 22, at a rate of 70 lb/A. Wild oat was seeded in the center of each plot at a density of 16 seeds per square foot on April 26. Broadleaf weeds were controlled with 11 oz/A of Huskie applied post emergence on May 26. The herbicide treatments were applied on June 1, using a CO<sub>2</sub> backpack sprayer with Teejet XR11002 nozzles in 20 GPA of water. Spring wheat and wild oat plants were at the 5- and 3-leaf stage, respectively, at the time of application. Crop injury was evaluated at one, three, and seven week after application, while wild oat control was determined at three and seven weeks after application. Spring wheat yield and test weight were determined on August 27.

Minor crop injury was observed with Silverado and Rimfire regardless of the rate applied. Crop injury also was observed with Goldsky applied at the 1X rate. However, symptoms diminished by three weeks after application (Table 1). All herbicides evaluated provided 90% wild oat control or greater when applied at their respective 1X rates. Further, all herbicides also provided commercially acceptable wild oat control (>80%) when applied at 1/3X rates. Indeed, Axial, Everest, Goldsky, Silverado and Rimfire afforded greater than 90% control when applied at 1/3X rates. Abundant rainfall benefited spring wheat and minimized wild oat competitive effects on crop yield.

#### Summary:

Overall, herbicide performance during 2010 was excellent with all herbicides when applied at labeled rates.

Funding Summary: Budget information to be provided by OSP. No other grant support for this project.

MWBC FY2012 Grant submission Plans: Resubmittal is planned.

Table 1. Effects of wild oat herbicides and use rates on crop injury, wild oat control, and yield.

Treatment	Rate	Percent Crop Injury			Percent Wild Oat Control		Test Weight	Yield
		9-Jun	25-Jun	20-Jul	25-Jun	20-Jul	lb/bu	bu/A
Untreated		0	0	0	0	0	62.9	83.9
Untreated		0	0	0	0	0	63.9	79.5
Achieve Supercharge	6.9 oz/a	0	0	0	98	99	64.4	103.6
Achieve Supercharge	2.3 oz/a	0	0	0	96	88	64.3	102.3
Axial XL	16.2 oz/a	0	0	0	99	99	64.4	97.2
Axial XL	5.4 oz/a	0	0	0	98	94	64.7	106.4
Discover NG	12.8 oz/a	0	3	0	96	99	64.6	95.9
Discover NG	4.28 oz/a	3	0	0	98	86	64.6	109.0
Everest NIS	0.6 oz/a	0	7	0	93	92	64.5	99.0
Everest NIS	0.2 oz/a	0	0	0	96	94	64.7	93.4
Goldsky AMS NIS	1 pt/a 1.5 lb/a	12	3	0	95	95	64.4	93.7
Goldsky AMS NIS	0.33 pt/a 1.5 lb/a	8	0	0	95	92	64.5	105.1
Hoelon COC	2 pt/a 1.5 pt/a	7	0	0	98	93	64.5	94.2
Hoelon COC	0.67 pt/a 1.5 pt/a	7	0	0	93	81	64.4	99.5

Table 1. Continued

Treatment	Rate	Percent Crop Injury			Percent Wild Oat Control		Test Weight	Yield
		9-Jun	25-Jun	20-Jul	25-Jun	20-Jul	lb/bu	bu/A
Puma	10.6 oz/a	3	3	0	98	99	64.4	96.2
Puma	3.53 oz/a	7	0	0	97	86	64.5	98.4
Silverado	2.25 oz/a	10	2	0	98	99	64.4	103.1
MSO	1.5 pt/a							
UAN	1 qt/a							
Silverado	0.75 oz/a	10	0	0	96	95	64.5	95.3
MSO	1.5 pt/a							
UAN	1 qt/a							
Wolverine	27.4 oz/a	0	0	0	99	96	64.6	102.4
Wolverine	9.13 oz/a	3	0	0	98	85	64.8	101.3
Rimfire Max	3 oz/a	12	2	0	96	96	64.5	98.6
Huskie	11 oz/a							
Quad 7	1 % v/v							
Rimfire Max	3 oz a	12	0	0	93	96	64.3	98.5
Huskie	11 oz/a							
MSO	1.3 % v/v							
MIN		0	0	0	0	0	62.9	79.5
MAX		11.7	6.7	0	99	99	64.8	109.0
MEAN		4.2	0.9	0	87.7	84.8	64.4	98.0
LSD (0.05)		4.61	5.03	0	5.11	8.2	0.6	14.5
CV		65.8	335.59	0	3.53	5.86	0.5	9.0
Treatment Prob (F)		0.0001	0.4832	1	0.0001	0.0001	0.0001	0.0557