

Wild oat control in hard red spring wheat with reduced rates of Puma, Axial, Discover, and Rimfire at Crookston, MN - 2006. Durgan, Beverly R., Jochum Wiersma, Jim Cameron, and Douglas W. Miller. This experiment was designed to evaluate wild oat control with Puma (fenoxaprop & safener), Axial (pinoxaden), Discover (clodinaop and cloquintocet), and Rimfire (propoxycarbazone & mesosulfuron) applied at the labeled rate and at two reduced rates and at two application times. The experiment was conducted at Crookston, MN on a Donaldson and Wheaton loam soil. Following weedy fallow, the experimental area received 100 lb/A of N and was plowed in the fall. In the spring of the following year, the experimental area was disked and harrowed. 'Alsen' hard red spring wheat was seeded on May 12 at 1.5 Bu/A. The experimental design was a randomized complete block with treatments in a split plot arrangement with three replications. Application date comprised whole plots and herbicide treatments, subplots. Subplot size was 10 by 16 ft. All herbicide treatments were applied with a backpack type sprayer delivering 10 gpa at 30 psi using 80015 flat fan nozzles. Application data and environmental conditions are listed below. Crop injury and wild oat control were rated visually. Prior to harvest, wild oat population and wheat / wild oat biomass data were collected from a one ft² area. Yields were measured. Wild oat seed production was measured after harvest. All data are presented in the table below.

Treatment Date	June 1	June 7
Wheat stage	3.5 leaf	5 leaf
Wild oat stage	3 leaf	4 leaf
Air temperature (°F)	66	80
Relative humidity (%)	73	40
Soil temperature (°F)	62	70
Sky	scattered clouds	sunny
Wind	WSW 4mph	N 4.5 mph
Rainfall before Application		
Week 1 (inch)	0.11	0.68
Rainfall after Application		
Week 1 (inch)	0.64	0.10
Week 2 (inch)	0.13	0.07

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Treatment	Rate	<u>Wild Oat Control</u>		Wioa	Wioa	Wioa	Wheat	<u>Wheat Injury</u>		Wheat
		7/3	7/12	Plants	Seeds	Biomass	Biomass	6/8	6/15	Yield
	Product/A	(%)	(%)	(#/ft2)	(#/ft2)	(g/ft2)	(g/ft2)	(%)	(%)	(Bu/A)
<u>Application #1 (June 1)</u>										
Puma	0.67 pt	97	99	0	0	0	90	0	0	51
Puma	0.5 pt	99	99	3	39	4	88	0	0	46
Puma	0.33 pt	90	93	10	91	10	81	3	0	46
Axial + Adigor Adjuvant	8.2 oz + 9.6 oz	100	99	1	15	3	92	0	0	51
Axial + Adigor Adjuvant	6.2 oz + 9.6 oz	100	99	0	0	0	91	2	0	55
Axial + Adigor Adjuvant	4.1 oz + 9.6 oz	100	99	0	0	0	91	0	0	53
Discover NG	12.8 oz	100	99	7	78	9	80	3	0	54
Discover NG	9.6 oz	100	99	0	0	0	87	0	0	57
Discover NG	6.4 oz	100	99	4	56	6	85	0	0	54
Rimfire + Destiny	1.75 oz + 1.5 pt	100	93	0	0	0	89	7	2	50
Rimfire + Destiny	1.31 oz + 1.5 pt	100	99	0	0	0	85	10	0	52
Rimfire + Destiny	0.88 oz + 1.5 pt	96	99	1	7	2	82	2	0	48
Weedy Check	--	--	--	90	1033	62	57	0	0	17
<u>Application #2 (June 7)</u>										
Puma	0.67 pt	95	95	3	57	4	80	0	0	36
Puma	0.5 pt	78	86	1	9	2	80	0	3	44
Puma	0.33 pt	90	93	5	54	4	80	0	3	41
Axial + Adigor Adjuvant	8.2 oz + 9.6 oz	98	99	1	11	2	79	0	3	42
Axial + Adigor Adjuvant	6.2 oz + 9.6 oz	96	99	0	0	0	87	0	5	42
Axial + Adigor Adjuvant	4.1 oz + 9.6 oz	90	99	0	0	0	82	0	0	43
Discover NG	12.8 oz	95	99	0	2	2	88	0	0	44
Discover NG	9.6 oz	98	99	0	2	2	70	0	0	43
Discover NG	6.4 oz	95	99	0	5	2	79	0	0	43
Rimfire + Destiny	1.75 oz + 1.5 pt	73	91	3	28	2	77	0	5	38
Rimfire + Destiny	1.31 oz + 1.5 pt	75	85					0	7	37
Rimfire + Destiny	0.88 oz + 1.5 pt	73	82	0	2	2	83	0	3	42
Weedy Check	--	--	--	68	859	41	56	0	0	25
LSD (0.05)		14	9	22	206	7	14	5	ns	12

Puma 1EC = fenoxaprop and safener

Axial 0.83 EC = pinoxaden.

Adigor Adjuvant = emulsifiable oil adjuvant from Syngenta.

Discover NG 0.5 EC = clodinafop and cloquintocet (safener).

Rimfire 10.2 WDG = propoxycarbazone (8.14%) & mesosulfuron (2.03%).

Destiny = methylated soybean oil and nonionic surfactant blend.

Wioa = wild oat.