

Wild oat control in spring wheat with three application times at Crookston, MN - 2017. Durgan, Beverly R., Jochum Wiersma, Jim Cameron, and Douglas Miller. This experiment was designed to evaluate wild oat control with several herbicides applied at three different wild oat stages. The experiment was conducted at Crookston, MN on a Donaldson and Wheaton loam soil. Following weedy fallow, the standing residue was burned and, after receiving 149 lbs/A N and 52 lbs/A P, was chisel plowed in the fall of 2016. In the spring of 2017, a seedbed was prepared using a field cultivator with rolling baskets. 'Linkert' hard red spring wheat was seeded on May 3 at 1.8 bu/a. The experimental design was a randomized complete block with three replications. Plot size was 10 by 16 ft. Target application stages were 1 leaf, 3-4 leaf and 5-6 leaf wild oat. 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. Yields were measured. All data are presented in the table below. Wild oat emergence was monitored weekly and data are presented in the chart below.

Treatment Date	May 19	May 26	June 5
Target wild oat stage	1 leaf	3-4 leaf	5-6 leaf
Air temperature (°F)	55	67	72
Soil temperature (°F)	56	56	68
Relative humidity (%)	28	52	62
Wind	5-6 mph	SW 12 mph	SE 2 mph
Sky	partly cloudy	clear	clear
Rainfall before Application			
Week 1 (inch)	0.01	0.50	0.52
Rainfall after Application			
Week 1 (inch)	0.50	0.75	0.40
Week 2 (inch)	0.75	0.40	0.97

Results

Wild oat populations averaged 348/ft². Over 86% of wild oat had emerged prior to the first application date (May 19). Over 96% had emerged prior to the second application date (May 26) and 100% by the late application date (June 5).

At the June 30 rating date, average wild oat control was greatest for treatments applied at the first (93%) and second (95%) application dates compared to the third application date (88%). Within the second application date, all treatments showed good wild oat control and did not differ significantly. Huskie Complete showed the least control compared to other treatments grouped within the first and third application dates.

By July 11, average wild oat control for treatments applied at the second application date (94%) were significantly greater than the average of treatments in the first (89%) or the third (90%) application date groups. For treatments applied at the first application date, Rimfire Max, Wolverine Advanced, Huskie Complete and Varro resulted in significantly lower wild oat control than the highest rated treatment, PerfectMatch. For treatments applied at the second application date, Rimfire Max and Wolverine Advanced resulted in significantly lower control than the highest rated treatment, GoldSky. For treatments applied at the third application date, Varro, Huskie Complete, PerfectMatch, Everest 2.0, and Rimfire Max resulted in significantly lower wild oat control than the highest rated treatment, Axial XL.

Wheat yields were significantly higher for treatments applied at the first two application dates compared to treatments applied at the third application date. Within the first and second application dates, yields did not significantly differ between treatments.

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Treatment	Rate (Product/A)	Wild Oat Control			Wheat Injury					Wheat
		6/16	6/30	7/11	5/26	5/31	6/16	6/30	7/11	Yield
		(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(Bu/A)
Application #1 (May 19)										
Everest 2.0 + Widematch + MCPA ester + Preference + AMS	1 oz + 1 pt + 0.5 pt + 3.2 oz + 2.35 pt	90	98	93	8	0	0	0	0	66
GoldSky + Widematch + MCPA ester + Preference + AMS	1 pt + 1 pt + 0.5 pt + 3.2 oz + 2.35 pt	92	96	96	12	0	0	0	0	71
Varro + Widematch + MCPA ester + Preference + AMS	6.85 oz + 1 pt + 0.5 pt + 3.2 oz + 2.35 pt	90	93	85	10	2	0	0	0	71
Rimfire Max + Widematch + MCPA ester+ Destiny HC	3 oz + 1 pt + 0.5 pt + 0.75 pt	85	88	78	10	0	0	0	0	72
Axial XL+ Widematch + MCPA ester	16.4 oz+ 1 pt + 0.5 pt	83	96	92	5	0	0	0	0	67
Wolverive Advanced	27.4 oz	87	92	82	5	0	0	0	0	74
Huskie Complete	13.7 oz	77	83	85	2	0	0	0	0	67
PerfectMatch + Activator 90 + AMS	1 pt + 6.4 oz + 3.5 pt	95	99	98	8	0	0	7	0	72
Application #2 May 26)										
Everest 2.0 + Widematch + MCPA ester + Preference + AMS	1 oz + 1 pt + 0.5 pt + 3.2 oz + 2.35 pt	90	93	98	--	3	0	0	0	63
GoldSky + Widematch + MCPA ester + Preference + AMS	1 pt + 1 pt + 0.5 pt + 3.2 oz + 2.35 pt	90	96	99	--	5	0	0	0	67
Varro + Widematch + MCPA ester + Preference + AMS	6.85 oz + 1 pt + 0.5 pt + 3.2 oz + 2.35 pt	85	93	95	--	5	0	0	0	68
Rimfire Max + Widematch + MCPA ester+ Destiny HC	3 oz + 1 pt + 0.5 pt + 0.75 pt	87	95	87	--	5	0	3	0	71
Axial XL+ Widematch + MCPA ester	16.4 oz+ 1 pt + 0.5 pt	95	99	98	--	2	0	0	0	72
Wolverive Advanced	27.4 oz	92	98	90	--	0	0	0	0	76
Huskie Complete	13.7 oz	88	95	92	--	2	0	0	0	71
PerfectMatch + Activator 90 + AMS	1 pt + 6.4 oz + 3.5 pt	85	91	94	--	5	0	7	0	69
Application #3 (June 5)										
Everest 2.0 + Widematch + MCPA ester + Preference + AMS	1 oz + 1 pt + 0.5 pt + 3.2 oz + 2.35 pt	--	85	90	--	--	--	0	0	42
GoldSky + Widematch + MCPA ester + Preference + AMS	1 pt + 1 pt + 0.5 pt + 3.2 oz + 2.35 pt	--	88	93	--	--	--	0	0	46
Varro + Widematch + MCPA ester + Preference + AMS	6.85 oz + 1 pt + 0.5 pt + 3.2 oz + 2.35 pt	--	87	83	--	--	--	0	0	45
Rimfire Max + Widematch + MCPA ester+ Destiny HC	3 oz + 1 pt + 0.5 pt + 0.75 pt	--	85	90	--	--	--	0	0	31
Axial XL+ Widematch + MCPA ester	16.4 oz+ 1 pt + 0.5 pt	--	93	98	--	--	--	0	0	45
Wolverive Advanced	27.4 oz	--	92	95	--	--	--	0	0	55
Huskie Complete	13.7 oz	--	82	85	--	--	--	0	0	36
PerfectMatch + Activator 90 + AMS	1 pt + 6.4 oz + 3.5 pt	--	88	87	--	--	--	7	0	40
Weedy Check	--	--	--	--	0	0	0	0	0	13
LSD (0.05)		ns	8	7	ns	2	ns	4	ns	16

Everest 2.0 3.5SC = flucarbazone-sodium & cloquintacet (safener).

Widematch 1.5E = clopyralid (0.75 lb ae/gal) & fluroxypyr (0.75 lb ae/gal).

MCPA Ester 4E.

Preference = nonionic surfactant.

AMS = N-PaK AMS = 34% ammonium sulfate solution (3.4 lbs ammonium sulfate/gal).

GoldSky 0.84L = pyroxsulam (0.11 lb ai/gal) & fluroxypyr (0.71 lb ae/gal) & florasulam (0.018 lb ai/gal).

Varro = thien carbazone-methyl & safener.

Rimfire Max 6.67WDG = propoxycarbazone-sodium (4.76%) & mesosulfuron-methyl (1.91%).

Destiny HC = methylated soybean oil, high fructose corn syrup, sorbitan fatty acid esters.

Axial XL 0.42EC = pinoxaden and adigor adjuvant.

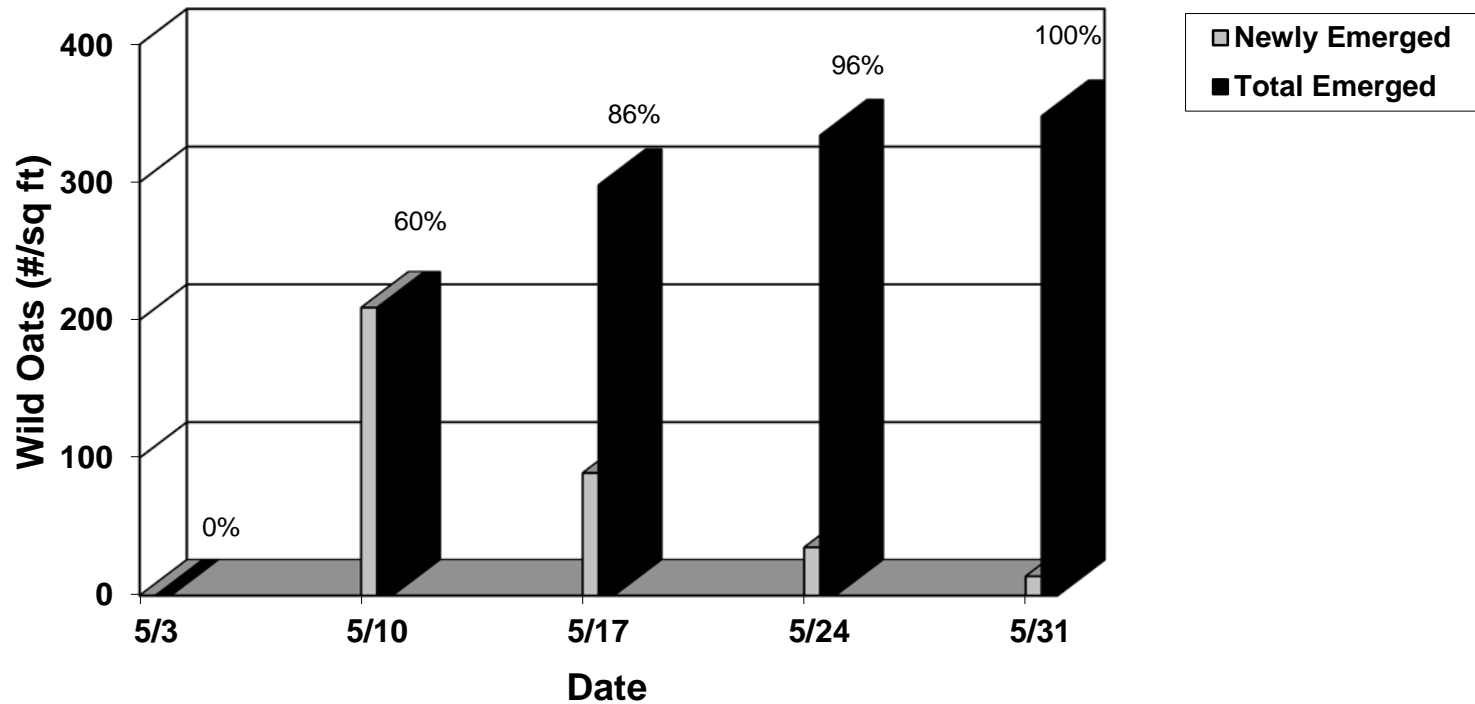
Wolverine Advanced 1.58E = fenoxaprop-p-ethyl (0.40 lb ai/gal) & pyrasulfotole (0.13 lb ai/gal) & bromoxynil (1.05 lb ai/gal).

Huskie Complete 1.76L = thien carbazone-methyl (0.042 lb ai/gal) & pyrasulfotole (0.26 lb ai/gal) & bromoxynil phenol equivalent (1.46 lb ai/gal).

PerfectMatch 1.61SE = clopyralid (0.75 lb ae/gal) & fluroxypyr (0.75 lb ae/gal) & pyroxsulam (0.11 lb ai/gal).

Activator 90 = nonionic surfactant.

2017 Wild Oat Emergence at Crookston, MN



Average Total Population = 348/sq ft