

Wild oat control in spring wheat with three application times at Crookston, MN - 2016. 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 126 lbs/A N and 52 lbs/A P, was chisel plowed in the fall of 2015. In the spring of 2016, a seedbed was prepared using a field cultivator with rolling baskets. 'Linkert' hard red spring wheat was seeded on April 12 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 2	May 16	May 29
Target Wild oat stage	1 leaf	3-4 leaf	5-6 leaf
Air temperature (°F)	55	56	70
Soil temperature (°F)	49	52	65
Relative humidity (%)	35	37	55
Wind	S 3 mph	NE 8 mph	SE 3 mph
Sky	clear	clear	clear
Rainfall before Application			
Week 1 (inch)	0.01	0.09	2.14
Rainfall after Application			
Week 1 (inch)	0.00	1.30	5.24
Week 2 (inch)	0.09	0.84	0.26

Results

Wild oat populations averaged 215/ft². 10% to 63% of wild oat had emerged prior to the first application date (May 2). 95% to 99% had emerged prior to the second application date (May 16) and 100% by the late application date (May 29).

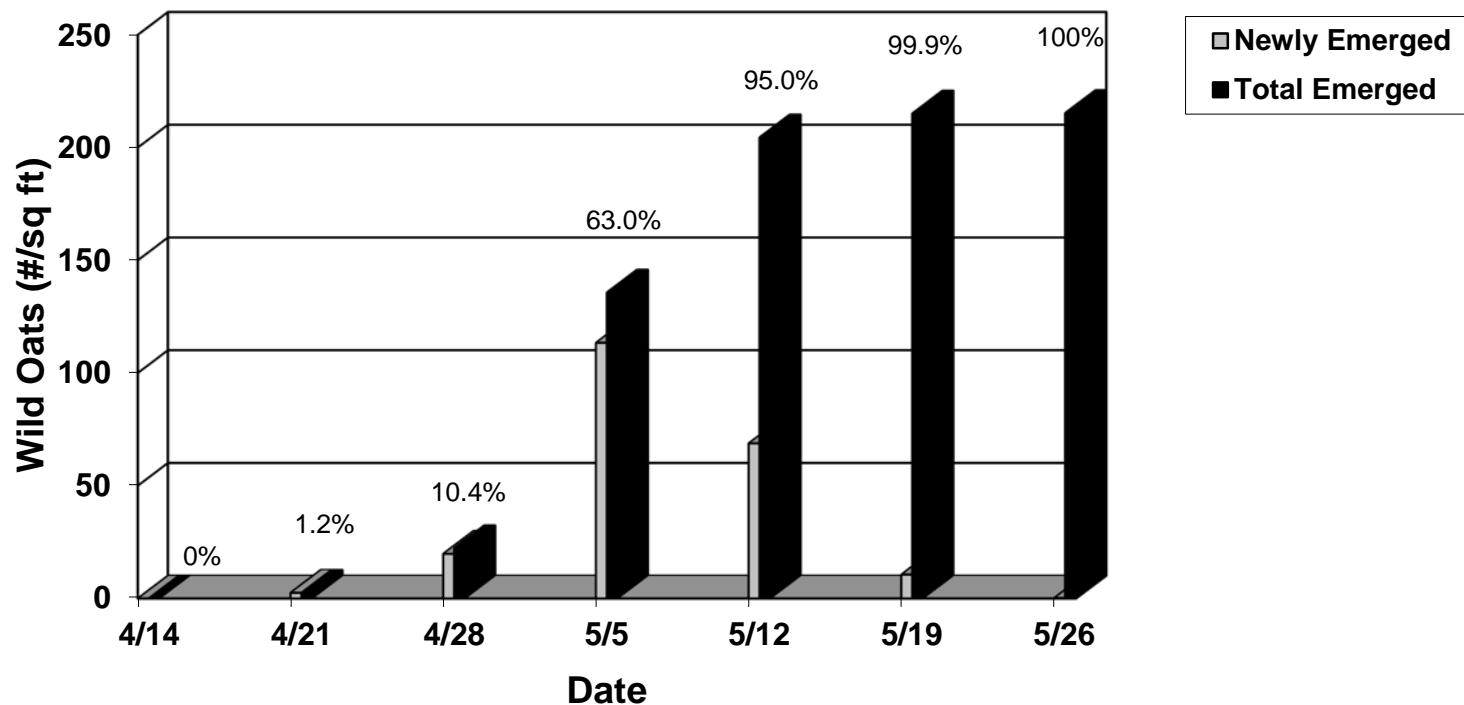
Average wild control was lowest for treatments applied at the early application date and highest for treatments applied at the second application date. At the early application date, significant numbers of wild oat had yet to emerge. At the second application date, most of the wild oats had emerged by the date of treatment application. By the third application date, all wild oats were emerged, however several of the herbicide treatments showed lower control compared to the second application date due to the larger growth stage of the wild oats.

GoldSky provided the best control at the early application date followed by Everest 2.0, Axial XL, and PerfectMatch. GoldSky, Everest 2.0, and PerfectMatch provided some short-term residual control of later germinating wild oats resulting in wheat yields in the higher range of all treatments in the early application date group.

All treatments applied at the second application date to 3-4 leaf wild oat provided good control. Differences between treatments applied at this application date did not differ significantly. Yield differences among treatments generally did not differ significantly with the exception of the highest yielding treatment (Axial XL) yielding significantly higher than the lowest yielding treatment (Everest 2.0).

Wild oat control at the late (5-6 leaf wild oat) application date did not differ significantly among treatments except for Huskie Complete, where control decreased as the season progressed and was significantly lower than the other treatments. Wild oat control was greatest with Axial XL and Wolverine Advanced. Average wheat yields of all treatments at the late application date were less than the average yields of the treatments applied at the second application date. Axial XL resulted in the highest yield at the late application date and Huskie complete had the lowest yield.

2016 Wild Oat Emergence at Crookston, MN



Average Total Population = 215/sq ft

**Wild oat control in spring wheat with three application times at Crookston, MN – 2016.
Durgan, Wiersma, Cameron, and Miller.**

Treatment	Rate (Product/A)	Wild Oat Control						Wheat Injury			Wheat Yield (Bu/A)
		5/13	5/27	6/9	6/16	7/1	7/20	5/13	5/20	5/27	
		(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	
Application #1 (May 2)											
Everest 2.0 + Widematch + MCPA ester + Preference + AMS	1 oz + 1 pt + 0.5 pt + 3.2 oz + 2.35 pt	65	70	70	37	47	47	0	0	0	54
GoldSky + Widematch + MCPA ester + Preference + AMS	1 pt + 1 pt + 0.5 pt + 3.2 oz + 2.35 pt	73	70	82	60	60	55	0	3	0	63
Varro + Widematch + MCPA ester + Preference + AMS	6.85 oz + 1 pt + 0.5 pt + 3.2 oz + 2.35 pt	73	50	17	0	30	23	5	2	0	38
Rimfire Max + Widematch + MCPA ester+ Destiny HC	3 oz + 1 pt + 0.5 pt + 0.75 pt	70	70	37	10	33	27	2	0	0	48
Axial XL+ Widematch + MCPA ester	16.4 oz+ 1 pt + 0.5 pt	63	60	37	38	47	47	0	0	0	48
Wolverive Advanced	27.4 oz	57	38	20	20	32	28	0	0	3	40
Huskie Complete	13.7 oz	53	37	30	10	30	30	13	2	2	47
PerfectMatch + Activator 90 + AMS	1 pt + 6.4 oz + 3.5 pt	68	70	83	37	47	43	3	5	0	59
Application #2 May 16)											
Everest 2.0 + Widematch + MCPA ester + Preference + AMS	1 oz + 1 pt + 0.5 pt + 3.2 oz + 2.35 pt	--	62	88	92	90	91	--	2	0	61
GoldSky + Widematch + MCPA ester + Preference + AMS	1 pt + 1 pt + 0.5 pt + 3.2 oz + 2.35 pt	--	53	90	93	91	90	--	2	2	73
Varro + Widematch + MCPA ester + Preference + AMS	6.85 oz + 1 pt + 0.5 pt + 3.2 oz + 2.35 pt	--	60	90	93	90	88	--	0	5	70
Rimfire Max + Widematch + MCPA ester+ Destiny HC	3 oz + 1 pt + 0.5 pt + 0.75 pt	--	50	88	95	91	90	--	0	7	72
Axial XL+ Widematch + MCPA ester	16.4 oz+ 1 pt + 0.5 pt	--	75	90	96	87	86	--	2	2	74
Wolverive Advanced	27.4 oz	--	67	90	77	82	80	--	0	0	69
Huskie Complete	13.7 oz	--	60	85	83	80	78	--	2	5	69
PerfectMatch + Activator 90 + AMS	1 pt + 6.4 oz + 3.5 pt	--	60	88	93	90	90	--	3	7	69
Application #3 (May 29)											
Everest 2.0 + Widematch + MCPA ester + Preference + AMS	1 oz + 1 pt + 0.5 pt + 3.2 oz + 2.35 pt	--	--	70	80	77	75	--	--	3	59
GoldSky + Widematch + MCPA ester + Preference + AMS	1 pt + 1 pt + 0.5 pt + 3.2 oz + 2.35 pt	--	--	75	82	80	80	--	--	2	61
Varro + Widematch + MCPA ester + Preference + AMS	6.85 oz + 1 pt + 0.5 pt + 3.2 oz + 2.35 pt	--	--	78	82	68	70	--	--	5	57
Rimfire Max + Widematch + MCPA ester+ Destiny HC	3 oz + 1 pt + 0.5 pt + 0.75 pt	--	--	75	82	87	86	--	--	7	60
Axial XL+ Widematch + MCPA ester	16.4 oz+ 1 pt + 0.5 pt	--	--	83	93	90	87	--	--	5	65
Wolverive Advanced	27.4 oz	--	--	90	93	88	87	--	--	7	62
Huskie Complete	13.7 oz	--	--	73	72	50	42	--	--	10	49
PerfectMatch + Activator 90 + AMS	1 pt + 6.4 oz + 3.5 pt	--	--	70	83	70	68	--	--	7	53
Weedy Check	--	--	--	--	--	--	--	0	0	0	33
LSD (0.05)		ns	ns	24	25	18	19	ns	ns	4	12

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 carbazole-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 carbazole-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.