

Broadleaf weed control in spring wheat with Pixxaro EC at Crookston, MN - 2019.

Durgan, Beverly R., Jochum Wiersma, Houston Lindell, and Douglas Miller. This experiment was designed to evaluate broadleaf weed control and wheat injury with Pixxaro EC. The experiment was conducted at Crookston, MN on a Donaldson and Wheaton loam soil. Following weedy fallow, 149 lbs/A N and 52 lbs/A P was applied and the area was chisel plowed in the fall of 2018. In the spring of 2019, a seedbed was prepared using a field cultivator with rolling baskets. 'Linkert' hard red spring wheat was seeded on May 13 at 1.75 bu/a. All herbicide treatments were applied with a backpack type sprayer delivering 10 gpa at 30 psi using 80015 flat fan nozzles. The experimental design was a randomized complete block with three replications and plot size was 10 by 24 ft. Application date and environmental conditions are listed below. Crop injury and weed control were visually rated and yields were measured. Data presented in the table below.

Treatment Date **June 13**

Air temperature (°F)	68
Soil temperature (°F)	60
Relative humidity (%)	28
Wind	SSW 8 mph
Sky	clear

Rainfall before Application	
Week 1 (inch)	0.76
Rainfall after Application	
Week 1 (inch)	0.17
Week 2 (inch)	0.38

<u>Weed Densities</u>	<u>(#/ft²)</u>
Common Lambquarters	5
Common Mallow	3
Night-flowering Catchfly	7
Redroot Pigweed	8
Wild Buckwheat	24
Wild Mustard	22

Results

Control of common lambsquarters, redroot pigweed, wild buckwheat, and wild mustard was generally excellent with all herbicide treatments. Common mallow control with Pixxaro EC + 2,4-D ester and OpenSky was excellent and significantly greater than the Pixxaro EC + Activator 90, WideMatch, WideMatch + Quelex, Huskie, and Bison treatments at the late rating date. Bison provided the lowest common mallow control. Night-flowering catchfly ratings showed more variability than with the other weed species and there were no significant herbicide treatment differences.

Opensky was the only treatment that caused visible wheat injury. Early injury symptoms were yellowing and stunting. Injury at the later rating dates was wheat height reduction.

Wheat yields were not significantly different among herbicide treatments but were all significantly greater than the untreated weedy check (21 Bu/A).

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Treatment	Rate (Product/A)	Weed Control																					Wheat Yield (Bu/A)
		Common Lambsquarters			Common Mallow			Night-flowering Catchfly			Redroot Pigweed			Wild Buckwheat			Wild Mustard			Wheat Injury			
		7/1	7/17	7/26	7/1	7/17	7/26	7/1	7/17	7/26	7/1	7/17	7/26	7/1	7/17	7/26	7/1	7/17	7/26	6/21	7/17	7/26	
		(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	
Pixxaro EC + Activator 90	6 oz + 3.2 oz	93	99	99	87	93	93	78	86	86	93	99	99	90	95	95	93	99	99	0	0	0	57
Pixxaro EC + 2,4-D ester	6 oz + 8 oz	98	98	98	90	99	99	90	99	99	99	99	99	92	99	99	99	99	99	0	0	0	54
WideMatch + Activator 90	1 pt + 3.2 oz	92	96	96	83	92	92	72	88	88	93	99	99	85	96	96	96	99	99	0	0	0	49
WideMatch + Quelex + Activator 90	1 pt + 0.75 oz + 3.2 oz	96	96	99	90	95	92	90	92	92	98	99	99	92	99	99	96	99	99	0	0	0	52
OpenSky + Activator 90 + N-Pak AMS	1 pt + 6.4 oz + 20 oz	95	95	95	92	99	99	90	99	99	96	96	99	93	99	99	99	99	99	15	10	10	47
Bison	1 pt	99	98	95	87	83	85	85	83	85	93	99	99	88	92	92	96	98	98	0	0	0	50
Huskie + N-Pak AMS	13.5 oz + 20 oz	99	98	99	90	90	90	88	90	90	99	99	99	92	95	95	99	99	99	0	0	0	49
Weedy check		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0	0	0	**
LSD (0.05)		ns	ns	ns	ns	6.6	5.8	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	1.0	1.0	1.0	ns

Pixxaro 2.43EC = halauxifen-methyl (0.10 lbs ae/gal) plus fluroxypyr (2.33 lbs ae/gal).

Activator 90 = nonionic surfactant.

2,4-D ester LV6.

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

Quelex 20SG = halauxifen-methyl (10%) & flurasulam (10%).

OpenSky 1.057SE = fluroxypyr (0.95 lb/gal) + pyroxulam (0.107 lb/gal).

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

Bison 4E = bromoxynil (2 lb ai/gal) & MCPA (2 lb ae/gal).

Huskie 2.08 EC = pyrasulfotole (0.23 lb ai/gal) & bromoxynil 1.85 lb ai/gal) & safener.

** Weedy check yield = 21 Bu/A not included in Wheat Yield anova.