

Broadleaf weed control in spring wheat at Crookston, MN - 2020. Durgan, Beverly R., Jochum Wiersma, Jim Cameron, Houston Lindell, and Douglas Miller. This experiment was designed to evaluate broadleaf weed control and wheat injury with broadleaf. The experiment was conducted at Crookston, MN on a Donaldson and Wheaton loam soil. Following weedy fallow, the area was chisel plowed in the fall of 2019. In the spring of 2020, 149 lbs/A N and 52 lbs/A P was applied and a seedbed was prepared using a field cultivator with rolling baskets. 'Linkert' hard red spring wheat was seeded on May 18 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 11
Broadleaf weeds	3-6"
Air temperature (°F)	68
Relative humidity (%)	55
Wind	E 5 mph
Sky	0% clouds
Rainfall before Application	
Week 1 (inch)	2.13
Rainfall after Application	
Week 1 (inch)	0.40
Week 2 (inch)	1.79
<u>Weed Densities</u>	(#/ft²)
Common Lambquarters	14
Common Mallow	12
Redroot Pigweed	9
Wild Buckwheat	28
Wild Mustard	29

Results

Weed control was excellent for all herbicide treatments with little or no wheat injury observed. Wheat yields did not differ significantly between herbicide treatments but all herbicide treatments yielded significantly higher than the untreated check.

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Treatment	Rate (Product/A)	Weed Control																				Wheat Injury		Wheat Yield (Bu/A)
		Common Lambsquarters				Common Mallow				Redroot Pigweed				Wild Buckwheat				Wild Mustard				6/19	6/26	
		6/26	7/10	7/17	8/7	6/26	7/10	7/17	8/7	6/26	7/10	7/17	8/7	6/26	7/10	7/17	8/7	6/26	7/10	7/17	8/7			
Postemergence June 11 (3-6 inch weeds)																								
Talinor + CoAct+ + COC	16 oz + 3.2 oz + 12.8 oz	96	99	99	99	95	96	95	96	99	98	96	99	93	96	98	95	99	99	99	99	5	0	53
Huskie + Preference	11 oz + 3.2 oz	99	99	99	99	93	99	99	99	99	99	99	99	95	99	99	98	99	99	99	99	0	0	56
Widematch	1 pt	98	99	99	99	92	99	99	99	90	98	98	99	93	99	99	99	99	99	99	99	0	0	56
Affinity Tankmix + WideMatch + Preference	0.6 oz + 1 pt + 3.2 oz	99	99	99	99	95	99	99	99	99	99	99	99	95	99	99	99	99	99	99	99	0	0	50
Affinity Tankmix + MCPA ester	0.6 oz + 0.75 pt	96	99	99	99	85	96	99	96	90	96	96	96	85	96	96	95	96	99	99	99	0	0	51
WideMatch + Quelex + Activator 90 + AMS	1 pt + 0.75 oz + 3.2 oz + 3.5 pt	99	99	99	99	98	99	99	99	99	99	99	99	98	98	96	99	99	99	99	99	0	0	54
Affinity Tankmix + WideMatch + Activator 90 + AMS	0.2 oz + 1 pt + 3.2 oz + 3.5 pt	99	99	99	99	96	99	99	99	96	99	99	99	98	99	99	99	99	99	99	99	0	0	54
Affinity BroadSpec + WideMatch + Activator 90 + AMS	0.2 oz + 1 pt + 3.2 oz + 3.5 pt	99	99	99	99	95	98	98	99	98	99	99	98	95	98	98	99	99	99	99	99	0	0	55
Starane Flex	13.5 oz	99	99	99	99	92	99	99	99	99	99	99	99	93	99	99	99	99	99	99	99	0	0	52
Huskie + N-Pak AMS	13.5 oz + 3.5 pt	99	99	99	99	96	99	99	96	99	99	99	99	96	99	99	96	99	99	99	99	2	0	53
Hat Trick	1.5 pt	99	99	99	99	93	99	99	99	95	99	99	99	95	99	99	99	99	99	99	99	0	0	54
Weedy Check		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	43
LSD (0.05)		ns	ns	ns	ns	ns	ns	ns	ns	6.1	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	1.4	ns	6.1

Talinor = bicyclopyrone & bromoxynil.

CoAct+ = adjuvant.

COC = crop oil concentrate.

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

Preference = nonionic surfactant.

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

Affinity Tankmix 50SG = thifensulfuron (40%) & tribenuron (10%).

MCPA Ester 4E.

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

Activator 90 = nonionic surfactant.

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

Affinity BroadSpec 50SG = thifensulfuron (25%) & tribenuron (25%).

Starane Flex 0.875EC = florasulam (0.042 lb ai/gal) & fluroxypyr (0.833 lb ae/gal).

Hat Trick 2.82SE= clopyralid (0.51 lb ae/gal) & fluroxypyr (0.51 lb ae/gal) & MCPA ester (1.8 lb ae/gal).