

**Broadleaf weed control in spring wheat at Crookston, MN - 2021.** Durgan, Beverly R., Jochum Wiersma, Jim Cameron, and Houston Lindell. This experiment was designed to evaluate broadleaf weed control and wheat injury with herbicides applied at two application times. 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 2020. In the spring of 2021, 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 April 19 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 dates and environmental conditions are listed below. Crop injury and weed control were visually rated and yields were measured. Data presented in the table below.

<b><u>Treatment Date</u></b>	<b><u>June 1</u></b>	<b><u>June 7</u></b>
Air temperature (°F)	74	81
Soil temperature (under sod) (°F)	56	63
Relative humidity (%)	43	44
Wind	SW 7	NE 6.5 mph
Rainfall before Application		
Week 1 (inch)	0.24	0.08
Rainfall after Application		
Week 1 (inch)	0.08	0.41
Week 2 (inch)	0.41	0.58
Broadleaf weed height (inches)	2-3	3-5
<b><u>Weed Densities</u></b>	<b><u>(#/ft<sup>2</sup>)</u></b>	
Common Lambquarters	15	
Common Mallow	17	
Redroot Pigweed	10	
Wild Buckwheat	29	
Wild Mustard	21	

### **Results**

Control of common lambsquarters, common mallow, and redroot pigweed was generally excellent for all herbicide treatments except for Starane Flex. Season long lambsquarters control was fair to poor with Starane Flex at both application timings. Common mallow control with Starane Flex was good when applied at the earlier application time but mallow control at the earlier rating dates following the later application timing were only fair. Initial pigweed control with Starane Flex was slightly less than the other treatments at both application timings but improved by the last rating date. Wild buckwheat control was good to excellent with all treatments except for Starane Flex applied at the later timing, having only fair wild buckwheat control at all rating dates. Wild Mustard control was excellent with all treatments, but Starane Flex applied at the later timing showed slightly lower control at the initial rating date.

Minimal injury symptoms were noted for several treatments within the early application timing. Yields were variable due in part to extremely dry conditions later in the season and no significant yield differences between treatments were detected.

**Broadleaf weed control in spring wheat at Crookston, MN - 2021.**

**Durgan, Wiersma, Cameron, and Lindell.**

Treatment	Rate (Product/A)	Weed Control															Wheat			Wheat Yield (Bu/A)
		Common Lambquarters			Common Mallow			Redroot Pigweed			Wild Buckwheat			Wild Mustard			Wheat Injury			
		6/18	6/24	7/2	6/18	6/24	7/2	6/18	6/24	7/2	6/18	6/24	7/2	6/18	6/24	7/2	6/4	6/12	6/18	
<b>Postemergence June 1 (2-3 inch broadleaf weeds)</b>																				
Talinor + CoAct+ + COC	16 oz + 3.2 oz + 12.8 oz	99	99	99	99	99	99	99	99	96	90	87	91	99	99	99	2	0	0	34
Huskie + Preference	11 oz + 3.2 oz	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99	2	0	0	38
Widematch	1 pt	99	99	97	99	99	96	99	99	98	98	98	98	99	98	99	0	0	0	32
Affinity Tankmix + WideMatch + Preference	0.6 oz + 1 pt + 3.2 oz	99	98	99	99	99	99	99	99	99	95	91	99	99	99	99	3	0	0	38
Affinity Tankmix + MCPA ester	0.6 oz + 0.75 pt	99	99	99	99	99	99	99	99	99	90	88	93	99	99	99	3	0	0	34
WideMatch + Quelex + Activator 90 + AMS	1 pt + 0.75 oz + 3.2 oz + 3.5 pt	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99	0	0	0	44
Affinity Tankmix + WideMatch + Activator 90 + AMS	0.2 oz + 1 pt + 3.2 oz + 3.5 pt	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99	0	0	0	42
Affinity BroadSpec + WideMatch + Activator 90 + AMS	0.2 oz + 1 pt + 3.2 oz + 3.5 pt	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99	3	0	0	38
Starane Flex	13.5 oz	66	66	89	90	80	96	93	93	99	91	90	96	99	96	99	0	0	0	44
Huskie + N-Pak AMS	13.5 oz + 3.5 pt	99	99	99	99	99	99	99	99	99	99	99	98	99	99	99	2	0	0	43
Hat Trick	1.5 pt	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99	0	0	0	36
Untreated Check		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0	0	0	34
<b>Postemergence June 7 (3-5 inch broadleaf weeds)</b>																				
Talinor + CoAct+ + COC	16 oz + 3.2 oz + 12.8 oz	99	99	96	99	99	99	99	99	99	92	90	90	99	99	99	0	0	0	41
Huskie + Preference	11 oz + 3.2 oz	99	99	99	99	99	99	99	99	99	96	96	99	99	99	99	0	0	0	35
Widematch	1 pt	99	99	99	99	99	99	99	99	99	96	96	99	99	99	99	0	0	0	32
Affinity Tankmix + WideMatch + Preference	0.6 oz + 1 pt + 3.2 oz	99	99	99	99	99	99	99	99	99	90	88	99	99	99	99	0	0	0	27
Affinity Tankmix + MCPA ester	0.6 oz + 0.75 pt	96	96	96	96	96	96	96	96	99	87	88	90	96	96	99	0	0	0	26
WideMatch + Quelex + Activator 90 + AMS	1 pt + 0.75 oz + 3.2 oz + 3.5 pt	99	99	99	99	99	99	99	99	98	96	96	96	99	99	99	0	0	0	36
Affinity Tankmix + WideMatch + Activator 90 + AMS	0.2 oz + 1 pt + 3.2 oz + 3.5 pt	96	96	99	96	94	99	96	96	99	93	94	99	99	99	99	0	0	0	35
Affinity BroadSpec + WideMatch + Activator 90 + AMS	0.2 oz + 1 pt + 3.2 oz + 3.5 pt	96	96	99	99	94	99	99	96	99	93	95	99	99	96	99	0	0	0	26
Starane Flex	13.5 oz	50	66	80	70	83	99	90	93	99	77	83	83	93	96	99	0	0	0	36
Huskie + N-Pak AMS	13.5 oz + 3.5 pt	99	99	99	99	99	99	99	99	99	96	96	99	99	99	99	0	0	0	29
Hat Trick	1.5 pt	96	96	99	96	94	99	99	96	99	93	91	96	99	99	99	0	0	0	31
Untreated Check		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0	0	0	38
LSD (0.05)		10.4	14.7	ns	7.8	ns	ns	3.1	ns	ns	8.1	ns	ns	2.6	ns	ns	2.4	ns	ns	ns

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%) & florasulam (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).