

**Broadleaf weed control in spring wheat at Rosemount, MN - 2017.** Durgan, Beverly R., Douglas W. Miller, Bradley Kinkaid, Hugo Oliveira, and Ryan Mentz. This experiment was designed to evaluate broadleaf weed control and wheat injury with broadleaf herbicides applied at two application times. The experiment was conducted at Rosemount, MN on a Waukegon silt loam soil with pH 6.1 and 3.9% organic matter. Soil test for P and K were 16 lbs/A and 140 lbs/A, respectively. Following soybeans, the experimental area was fall chisel plowed. On April 21, the area was field cultivated and fertilized with 70 lbs/A N, 60 lbs/A P, and 60 lbs/A K and field cultivated a second time. The area was field cultivated again on May 4 and 'Linkert' hard red spring wheat was seeded with a 12 foot wide drill at 115 lbs/A on May 5. The experimental design was a randomized complete block with three replications. Plot size was 10 by 24 ft. All herbicide treatments were applied to a 6 foot strip with a backpack type CO<sub>2</sub> powered sprayer delivering 10 gpa at 35 psi using 11001 flat fan nozzles with 18 inch spacing. Application data and environmental conditions are listed below. Weed control and wheat injury were visually rated. Yields were determined by harvesting a 4 X 24 foot strip in the treated area with a small plot combine. Data is summarized in the Table below.

<b>Treatment Date</b>	<b>June 1</b>
Air Temperature (°F)	67
Relative humidity (%)	30
Dewpoint (°F)	35
Soil Temperature (°F)	65
Soil Moisture	moist at 0.75"
Sky	5% clouds
Wind	E 2-5 mph
Rainfall before application	
Week 1 (inch)	0.17
Rainfall after application	
Week 1 (inch)	0.12
Week 2 (inch)	1.70
<b>Common lambsquarters (Colq)</b>	
leaf stage	cot-4
height (inch)	0.25-0.75
density (#/ft <sup>2</sup> )	1.7
<b>Pennsylvania Smartweed (Pesw)</b>	
leaf stage	cot-4
height (inch)	0.25-1.25
density (#/ft <sup>2</sup> )	17
<b>Wild Buckwheat (Wibu)</b>	
leaf stage	2-3
height (inch)	0.5-1.75
density (#/ft <sup>2</sup> )	1.7
<b>Wild Mustard (Wimu)</b>	
leaf stage	cot-4
diameter (inch)	1-4
density (#/ft <sup>2</sup> )	2.3
<b>Wheat</b>	
leaf stage (Haun)	4.0 – 4.3 (Zadoks Z14, Z21-22)
height (inch)	5-7
tiller #	0-2

## **Results**

With the exception of Starane Flex, all herbicide treatments provided excellent control of the broadleaf weed species present. Starane Flex controlled wild mustard and provided good control of pigweed species and wild buckwheat but provided poor control of common lambsquarters and Pennsylvania smartweed. Wheat yields did not differ significantly.

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Treatment	Rate (Product/A)	Weed Control															Wheat Injury 6/27 (%)	Wheat Yield (Bu/A)
		Common Lambsquarters			Pennsylvania Smartweed			Pigweed species			Wild Buckwheat			Wild Mustard				
		6/27	7/5	7/30	6/27	7/5	7/30	6/27	7/5	7/30	6/27	7/5	7/30	6/27	7/5	7/30		
Talinor + CoAct+ + COC	13.7 oz + 2.74 oz + 12.8 oz	99	99	99	99	99	96	99	99	99	99	99	98	99	99	99	0	39
Talinor + CoAct+ + COC	16 oz + 3.2 oz + 12.8 oz	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99	0	43
Talinor + CoAct+ + COC	18.2 oz + 3.6 oz + 12.8 oz	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99	0	41
Huskie + Preference	11 oz + 3.2 oz	99	99	99	99	99	99	96	99	99	99	96	99	99	99	99	0	42
Widematch	1 pt	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99	0	39
Affinity Tankmix + WideMatch + Preference	0.6 oz + 1 pt + 3.2 oz	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99	0	38
Affinity Tankmix + MCPA ester	0.6 oz + 0.75 pt	99	99	99	96	99	99	99	99	99	99	96	99	94	99	99	0	38
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	40
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	45
Affinity BroadSpecx + 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	2	41
Starane Flex	13.5 oz	99	63	63	60	63	40	93	93	93	85	86	88	99	93	96	0	41
Huskie + N-Pak AMS	13.5 oz + 3.5 pt	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99	0	45
Hat Trick	1.5 pt	99	93	99	94	73	99	99	93	99	96	93	99	99	99	99	0	44
Weedy Check	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0	41
LSD (0.05)		ns	20	18	5	ns	16	3	ns	2	5	ns	4	ns	ns	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%) & 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).