

**Broadleaf weed control in spring wheat at Rosemount, MN - 2016.** Durgan, Beverly R., Douglas W. Miller, Bradley Kinkaid, Rafael Pedroso da Silva, and Maria Karis. 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 6.2 and 3.7% organic matter. Soil test for P and K were 12 lbs/A and 140 lbs/A, respectively. Following soybeans, the experimental area was fall chisel plowed. On April 11, the area was field cultivated. On April 13, the area was fertilized with 70 lbs/A N, 60 lbs/A P, and 60 lbs/A K and field cultivated a second time. 'Linkert' hard red spring wheat was seeded with a 12 foot wide drill at 115 lbs/A on April 14. 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 5 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>May 16</b>	<b>May 24</b>
Air Temperature (°F)	58	80
Relative humidity (%)	53	48
Dewpoint (°F)	41	59
Soil Temperature (°F)	54	69
Soil Moisture	moist at 0.5"	moist at 2"
Sky	clear	40% clouds
Wind	NE 0-7 mph	WNW 2-8 mph
Rainfall before application		
Week 1 (inch)	1.33	0.01
Rainfall after application		
Week 1 (inch)	0.00	1.38
Week 2 (inch)	0.46	0.35
<b>Common lambsquarters (Colq)</b>		
leaf stage	cot-2	cot-4
height (inch)	0.5	0.5-1
density (#/ft <sup>2</sup> )	32	35
<b>Pennsylvania Smartweed (Pesw)</b>		
leaf stage	cot-1	3-4
height (inch)	0.5-1	1-2.5
density (#/ft <sup>2</sup> )	13	13
<b>Wild Buckwheat (Wibu)</b>		
leaf stage	cot-2	1-3
height (inch)	0.5-2	1-3
density (#/ft <sup>2</sup> )	6	6
<b>Wild Mustard (Wimu)</b>		
leaf stage	cot-4	2-6
height (inch)	0.5-4	4-8 (diameter)
density (#/ft <sup>2</sup> )	7	7
<b>Wheat</b>		
leaf stage (Haun)	3.9 – 4.1 (Zadoks Z14, Z21-22)	5.5-5.8 (Zadoks Z16, Z22-23)
height (inch)	6-8	7-10
tiller #	0-2	2-3

## **Results**

With the exception of the AGH 15004 treatments, weed control of all weed species was excellent. For the AGH 15004 treatments, control of Pennsylvania smartweed and wild buckwheat were generally lower compared to the other treatments. PerfectMatch caused the greatest injury (stunting at the earlier application timing). Yields did not differ significantly.

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**Durgan, Miller, Kinkaid, da Silva, and Karis.**

Treatment	Rate (Product/A)	Weed Control												Wheat Injury			Wheat Yield (Bu/A)
		Common Lambsquarters			Pennsylvania Smartweed			Wild Buckwheat			Wild Mustard			5/20	5/24	6/9	
		6/9	6/22	7/25	6/9	6/22	7/25	6/9	6/22	7/25	6/9	6/22	7/25	(%)	(%)	(%)	
<b>Application #1 (May 16)</b>																	
Talinor + CoAct+ + COC	13.7 oz + 2.74 oz + 12.8 oz	90	99	99	93	98	99	89	98	98	89	99	99	5	0	0	46
Talinor + CoAct+ + COC	16 oz + 3.2 oz + 12.8 oz	99	99	99	96	99	99	96	89	88	99	99	99	7	0	2	51
Talinor + CoAct+ + COC	18.2 oz + 3.6 oz + 12.8 oz	96	99	99	96	99	99	94	99	99	94	99	99	3	0	2	49
Huskie + Preference	11 oz + 3.2 oz	99	99	99	99	89	99	99	89	88	99	99	88	2	0	7	52
Widematch	1 pt	99	99	99	99	99	99	95	96	99	95	96	96	0	0	3	49
Affinity Tankmix + MCPA ester	0.6 oz + 0.75 pt	95	99	99	95	99	99	96	99	99	93	99	99	5	2	2	49
Huskie + N-Pak AMS	11 oz + 1.18 pt	99	99	99	96	99	99	99	99	99	99	99	99	5	0	3	50
PerfectMatch + Activator 90 + AMS	1 pt + 6.4 oz + 3.5 pt	99	99	99	99	99	99	99	99	99	99	99	99	10	25	5	43
Hat Trick	1.5 pt	99	99	99	96	99	99	99	99	99	99	99	99	0	0	3	49
<b>Application #2 (May 24)</b>																	
AGH 15004	1 pt	93	95	99	94	90	86	93	88	83	94	93	93	0	0	5	49
AGH 15004 + Preference + Interlock	1 pt + 3.2 oz + 4 oz	98	99	99	96	80	75	99	80	78	96	99	99	0	0	5	47
AGH 15004 + AG 8050	1 pt + 6.4 oz	96	96	94	93	85	83	93	85	80	93	96	93	0	0	5	48
AGH 15004 + AG 14039	1 pt + 6.4 oz	96	98	99	94	85	82	96	85	82	96	98	96	0	0	3	47
AGH 15004	1.5 pt	99	98	99	99	83	77	99	87	81	99	96	96	0	0	3	48
AGH 15004 + Preference + Interlock	1.5 pt + 3.2 oz + 4 oz	99	99	99	99	90	83	99	90	83	99	99	99	0	0	3	49
AGH 15004 + AG 8050	1.5 pt + 6.4 oz	99	99	99	99	88	83	96	91	85	96	99	99	0	0	2	44
AGH 15004 + AG 14039	1.5 pt + 6.4 oz	99	99	99	99	85	80	99	85	75	99	99	99	0	0	2	47
Huskie + N-Pak AMS	13.5 oz + 1.18 pt	99	99	99	99	99	99	99	99	99	99	99	99	0	0	2	47
Widematch + MCPA Ester	1 pt + 0.5 pt	99	99	99	96	98	96	99	98	96	99	99	99	0	0	3	45
Affinity Tankmix + Preference	0.6 oz + 3.2 oz	91	99	99	90	99	99	88	99	99	90	99	99	0	0	8	46
PerfectMatch + Activator 90 + AMS	1 pt + 6.4 oz + 3.5 pt	96	99	99	96	96	93	94	96	93	96	99	99	0	0	5	48
Hat Trick	1.5 pt	98	99	99	93	96	96	96	96	96	92	99	99	0	0	2	48
Weedy Check	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	44
LSD (0.05)		ns	ns	ns	ns	9	8	ns	11	15	ns	ns	ns	3	1	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.

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

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

AGH 15004 = experimental from Winfield Solutions.

Interlock = drift control agent.

AGH 8050 = experimental from Winfield Solutions.

AGH 14039 = experimental from Winfield Solutions.