

Broadleaf weed control in spring wheat at Rosemount, MN - 2015. Durgan, Beverly R., Douglas W. Miller, and Brad Kinkaid. 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 4.5% organic matter. Soil test for P and K were 20 lbs/A and 180 lbs/A, respectively. Following soybeans, the experimental area was fall chisel plowed. On April 15, the area was fertilized with 70 lbs/A N, 60 lbs/A P, and 60 lbs/A K and field cultivated twice. 'Linkert' hard red spring wheat was seeded with a 12 foot wide drill at 115 lbs/A on April 16. 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 CO₂ 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.

Treatment Date	May 22	June 1
Air Temperature (°F)	74	57
Relative humidity (%)	24	52
Dewpoint (°F)	35	40
Soil Temperature (°F)	78	62
Soil Moisture	moist at 0.5"	moist
Sky	30% clouds	15% clouds
Wind	SE 0-5 mph	SE 2-6 mph
Rainfall before application		
Week 1 (inch)	0.5	1.45
Rainfall after application		
Week 1 (inch)	1.20	1.70
Week 2 (inch)	1.10	0.60
Common lambsquarters (Colq)		
leaf stage	2-4	4-10
height (inch)	1-2"	1-2.5
density (#/ft ²)	1.3	--
Pennsylvania Smartweed (Pesw)		
leaf stage	1-3	1-6
height (inch)	0.5-1.5	1-4
density (#/ft ²)	125	--
Wild Buckwheat (Wibu)		
leaf stage	1-2	--
height (inch)	0.5-2	3-5
density (#/ft ²)	scattered	--
Wild Mustard (Wimu)		
density (#/ft ²)	scattered	--
Wheat		
height (inch)	6-9	10-13
leaf stage	3.5 – 4.1 (Zadoks Z14, Z21-22)	5.6-5.9 (Zadoks Z14-15, Z22-23, Z32)
tiller #	1-2	2-3

Results

There were no significant differences in weed control between herbicide treatments at the early application timing. Huskie treatments and Affinity Tankmix + Starane had slightly lower control of Pennsylvania smartweed and wild buckwheat, mainly at the July 1 rating date, but the differences were generally not significant. With the exception of the two Huskie treatments applied at the later timing, all treatments yielded significantly greater than the weedy check.

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Treatment	Rate (Product/A)	Weed Control								Wheat Injury		Wheat Yield (Bu/A)
		Common Lambsquarters		Pennsylvania Smartweed		Wild Buckwheat		Wild Mustard		6/2	6/23	
		6/23	7/1	6/23	7/1	6/23	7/1	6/23	7/1	(%)	(%)	
Application #1 (May 22)												
Huskie + N-Pak AMS	11 oz + 1.18 pt	99	99	99	93	99	93	99	99	0	0	52
Huskie + N-Pak AMS	13.5 oz + 1.18 pt	99	99	99	95	99	95	99	99	0	0	53
Huskie + N-Pak AMS	15 oz + 1.18 pt	99	99	96	92	97	93	99	99	0	0	50
Huskie + N-Pak AMS + Preference	11 oz + 2.35 pt + 3.2 oz	99	99	99	93	99	96	96	99	0	0	51
Huskie + N-Pak AMS + Preference	13.5 oz + 1.18 pt + 3.2 oz	99	99	99	96	99	99	99	99	0	0	49
Huskie Complete + N-Pak AMS	13.7 oz + 1.18 pt	99	99	99	95	99	95	99	99	0	0	55
Widematch + MCPA Ester	1 pt + 0.5 pt	99	99	99	99	99	99	99	99	0	0	51
Affinity Tankmix + Starane Ultra + Preference	0.6 oz + 4.2 oz + 3.2 oz	99	99	99	98	99	98	99	99	2	0	53
Wolverine Advanced	27.4 oz	99	99	99	98	99	98	99	99	0	0	51
A20916 + A19278 + COC	2.52 oz + 13.7 oz + 12.8 oz	99	99	96	96	99	96	99	99	0	0	51
A20916 + A19278 + COC	2.52 oz + 16 oz + 12.8 oz	99	99	99	96	99	96	99	99	0	0	59
A20916 + A19278 + COC	2.52 oz + 18.2 oz + 12.8 oz	99	99	99	96	99	96	96	99	0	0	54
Application #2 (June 1)												
Huskie + N-Pak AMS	11 oz + 1.18 pt	99	99	91	92	94	93	99	99	0	0	45
Huskie + N-Pak AMS	13.5 oz + 1.18 pt	99	99	96	90	98	90	99	99	0	0	46
Widematch + MCPA Ester	1 pt + 0.5 pt	99	99	96	99	99	99	96	99	0	0	50
Affinity Tankmix + Starane Ultra + Preference	0.6 oz + 4.2 oz + 3.2 oz	99	99	94	93	99	93	96	99	0	0	49
Weedy Check	--	--	--	--	--	--	--	--	--	--	--	42
LSD (0.05)		ns	ns	ns	ns	3	ns	ns	ns	ns	ns	6

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

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

Preference = nonionic surfactant.

Huskie Complete 1.76L = thiencazone-methyl (0.042 lb ai/gal) & pyrasulfotole (0.26 lb ai/gal) & bromoxynil phenol equivalent (1.46 lb ai/gal).

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

MCPA Ester 4E.

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

Starane Ultra 2.8E = fluroxypyr.

Wolverine Advanced = fenoxaprop-p-ethyl & pyrasulfotole & bromoxynil .

A20916 = experimental from Syngenta.

A19278 = experimental from Syngenta.

COC = crop oil concentrate.