

Broadleaf weed control in tillering 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 several 2,4-D formulations applied to tillering wheat. 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 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 24
Air Temperature (°F)	76
Relative humidity (%)	62
Dewpoint (°F)	62
Soil Temperature (°F)	69
Soil Moisture	moist at 2"
Sky	50% clouds
Wind	NW 3-8 mph
Rainfall before application	
Week 1 (inch)	0.01
Rainfall after application	
Week 1 (inch)	1.38
Week 2 (inch)	0.35
Common lambsquarters (Colq)	
leaf stage	cot-4
height (inch)	0.5-1.5
density (#/ft ²)	24
Pennsylvania Smartweed (Pesw)	
leaf stage	2-4
height (inch)	1-2
density (#/ft ²)	9
pigweed	
leaf stage	4
height (inch)	1
density (#/ft ²)	scattered
Wild Buckwheat (Wibu)	
leaf stage	1-3
height (inch)	1-3
density (#/ft ²)	scattered
Wild Mustard (Wimu)	
leaf stage	4-8
diameter (inch)	4-9
density (#/ft ²)	8
Wheat	
leaf stage (Haun)	5.5-5.8 (Zadoks Z16, Z21-23)
height (inch)	7-10
tiller #	1-3

Results

Initial weed control at the June 9 rating date was low for all treatments except the Huskie treatment. Control of all weed species with the AGH 09008 and 2,4-D amine treatments was generally less than the other treatments at the June 22 and July 25 rating date. This difference was greatest with Pennsylvania smartweed and wild buckwheat, followed by pigweed species, common lambsquarters, and to a much lesser extent, wild mustard. No injury was observed and yields did not differ significantly among treatments.

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Treatment	Rate (Product/A)	Weed Control															Wheat Injury 5/20 (%)	Wheat Yield (Bu/A)
		Common Lambsquarters			Pennsylvania Smartweed			pigweed species			Wild Buckwheat			Wild Mustard				
		6/9	6/22	7/25	6/9	6/22	7/25	6/9	6/22	7/25	6/9	6/22	7/25	6/9	6/22	7/25		
AGH 09008	1 pt	62	84	81	60	40	39	61	86	84	61	38	33	61	92	87	0	46
AGH 09008 + Preference + Interlock	1 pt + 3.2 oz + 4 oz	60	87	90	60	60	70	60	88	88	60	57	57	60	90	90	0	42
2,4-D amine 4	1 pt	53	83	83	53	63	62	53	85	82	53	55	47	53	90	90	0	47
2,4-D amine 4 + Preference + Interlock	1 pt + 3.2 oz + 4 oz	67	83	80	67	50	43	67	85	82	67	50	50	67	93	88	0	44
Huskie + N-Pak AMS	13.5 oz + 1.18 pt	96	96	90	96	92	87	96	96	92	96	90	88	96	96	95	0	47
Widematch + MCPA Ester	1 pt + 0.5 pt	80	95	92	77	95	90	80	95	92	77	95	75	80	95	92	0	47
Affinity Tankmix + Preference	0.6 oz + 3.2 oz	73	99	95	78	99	95	78	99	95	70	99	95	78	99	95	0	48
Hat Trick	1.5 pt	68	99	97	63	95	95	67	99	97	62	96	92	67	99	96	0	45
Weedy Check	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	44
LSD (0.05)		ns	9	9	24	14	19	22	6	7	ns	15	37	22	5	4	ns	ns

AGH 09008 = experimental from Winfield Solutions.

Preference = nonionic surfactant.

Interlock = drift control agent.

2,4-D amine 3.8L

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).

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%).

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