

### **Broadleaf weed control in spring wheat with Quelex and PerfectMatch with various adjuvants 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 Quelex and PerfectMatch with various adjuvants. 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 6</b>
Air Temperature (°F)	73
Relative humidity (%)	33
Dewpoint (°F)	42
Soil Temperature (°F)	76
Soil Moisture	moist at 2.5"
Sky	0% clouds
Wind	SE 0-4 mph
Rainfall before application	
Week 1 (inch)	0.07
Rainfall after application	
Week 1 (inch)	1.55
Week 2 (inch)	0.66
<b>Common lambsquarters (Colq)</b>	
leaf stage	cot-8
height (inch)	0.25-1.5
density (#/ft <sup>2</sup> )	3.7
<b>Pennsylvania Smartweed (Pesw)</b>	
leaf stage	cot-6
height (inch)	0.25-3
density (#/ft <sup>2</sup> )	37
<b>Wild Buckwheat (Wibu)</b>	
leaf stage	--
height (inch)	3-4
density (#/ft <sup>2</sup> )	scattered
<b>Wild Mustard (Wimu)</b>	
leaf stage	--
diameter (inch)	1-6
density (#/ft <sup>2</sup> )	2.7
<b>Wheat</b>	
leaf stage (Haun)	5.3-5.7 (Zadoks Z15-16, Z22-23)
height (inch)	9-12
tiller #	2-3

### **Results**

Treatments were analyzed separately for each of the two herbicides. No significant treatment differences were noted for weed control, wheat injury or wheat yield.

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Treatment	Rate (Product/A)	Weed Control																		Wheat Yield (Bu/A)
		Common Lambsquarters			Pennsylvania Smartweed			pigweed species			Wild Buckwheat			Wild Mustard			Wheat Injury			
		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	6/27	7/5	7/30	
Quelex	0.75 oz	73	47	52	75	20	20	99	96	96	87	87	88	99	98	98	0	0	0	46
Quelex	0.56 oz	67	33	36	72	20	20	99	96	96	83	83	83	99	98	98	0	0	0	44
Quelex + Preference	0.56 oz + 3.2 oz	73	20	20	65	20	20	99	96	96	87	80	83	99	98	98	2	0	0	33
Quelex + Preference + AG02013	0.56 oz + 3.2 oz + 4 oz	80	53	53	75	27	43	99	96	96	87	80	82	96	98	98	0	0	0	46
Quelex + AG13064	0.56 oz + 3 oz	87	60	62	77	33	33	99	96	96	90	77	80	99	98	98	2	0	0	45
Quelex + AG8050	0.56 oz + 6.4 oz	86	53	57	78	27	27	99	96	96	87	77	80	99	98	98	2	0	0	44
Quelex + AG14039	0.56 oz + 8 oz	83	53	60	80	33	33	99	96	96	87	77	80	99	99	98	2	0	0	42
Quelex + AG14039	0.56 oz + 12 oz	86	73	78	80	47	47	99	96	96	88	87	87	99	98	98	0	0	0	44
LSD (0.05)		ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns
PerfectMatch	16 oz	93	87	88	87	83	88	99	96	98	90	90	90	99	99	98	0	0	0	46
PerfectMatch	12 oz	96	77	82	87	80	82	99	95	95	90	90	90	99	98	98	2	0	0	45
PerfectMatch + Preference	12 oz + 3.2 oz	83	88	90	87	89	88	99	98	98	90	92	92	99	98	98	2	0	0	41
PerfectMatch+ Preference + AG02013	12 oz + 3.2 oz + 4 oz	93	88	92	85	87	88	99	96	98	90	90	92	99	98	98	2	0	0	43
PerfectMatch + AG13064	12 oz + 3 oz	93	90	88	82	85	88	99	96	99	90	90	92	99	99	99	2	0	0	42
PerfectMatch + AG8050	12 oz + 6.4 oz	96	78	85	83	83	85	99	98	96	90	90	92	99	99	99	0	0	0	46
PerfectMatch+ AG14039	12 oz + 8 oz	80	63	58	72	73	57	99	99	99	87	93	92	99	99	99	2	0	0	43
PerfectMatch+ AG14039	12 oz + 12 oz	93	85	88	87	85	88	99	99	99	93	93	93	99	98	99	0	0	0	45
LSD (0.05)		ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns

Quelex 20SG = halauxifen-methyl (10%) & florasulam (10%).

Preference = nonionic surfactant.

AG02013 = experimental from Winfield Solutions.

AG13064 = experimental from Winfield Solutions.

AG8050 = experimental from Winfield Solutions.

AG14039 = experimental from Winfield Solutions.

PerfectMatch 1.61SE = clopyralid (0.75 lb ae/gal) & fluroxypyr (0.75 lb ae/gal) & pyroxosulam (0.11 lb ai/gal).