

Hard red spring wheat tolerance to postemergence herbicides at Rosemount, MN - 2017.

Durgan, Beverly R., Douglas W. Miller, Bradley Kinkaid, Hugo Oliveira, and Ryan Mentz. This experiment was designed to evaluate the tolerance of selected Hard Red Spring Wheat (HRSW) varieties to various postemergence herbicides. The experiment was conducted at Rosemount, MN on a Waukegon silt loam soil with pH 5.8 and 4.5% organic matter. Soil test for P and K were 110 lbs/A and 454 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 HRSW varieties 'Bolles', 'Linkert', 'Shelly' and 'Valda' were seeded with a 12 foot wide drill at 115 lbs/A on May 5. The experimental design was a strip plot with four replications. Varieties were seeded in strips randomized within each replication. Herbicide treatments were applied across all varieties. Each herbicide x variety plot was 12 feet wide by 24 feet long. Herbicide treatments were applied to a 7.5 foot strip with a tractor mounted, air powered sprayer delivering 10 gpa at 35 psi using XR11001 flat-fan nozzles with 15 inch spacing. Herbicide treatments were applied June 6. A broadcast application of bromoxynil (0.31 lbs ai/A) + MCPA ester (0.31 lbs ae/A) was applied on May 31 to control broadleaf weeds. Environmental conditions at application are listed below. Crop injury was visually rated. Crop height was measured at maturity. Yields were determined by harvesting a 4 X 24 foot strip in the treated area with a small plot combine. Data is summarized by variety and is presented in Tables 1 and 2.

Treatment Date	June 6
Air Temperature (°F)	75
Relative humidity (%)	34
Dewpoint (°F)	45
Soil Temperature (°F)	84
Soil Moisture	moist at 1.0"
Sky	0% clouds
Wind	SE 2-4 mph
Rainfall before application	
Week 1 (inch)	0.07
Rainfall after application	
Week 1 (inch)	1.55
Week 2 (inch)	0.66

<u>Wheat Variety</u>	<u>Height (inch)</u>	<u>Leaf Stage (Haun)</u>	<u>Tillers</u>	<u>Zadoks Code</u>
Bolles	10-14	5.0-5.4	0-3	Z14 , Z21-23
Linkert	9-12	5.4-5.8	2	Z14-15 , Z22
Shelly	9-12	5.3-5.6	1-2	Z14-15 , Z21-22
Valda	9-12	5.1-5.6	1-2	Z14-15 , Z21-22

Results

Injury symptoms (stunting) on June 27 were generally slight with PerfectMatch treatments showing the greatest degree followed by the Everest 2.0 and Arysta experimental treatments. Wheat yields did not differ significantly between treatments within each variety.

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Table 1.

Treatment	Rate (Product/A)	Bolles			Linkert		
		Injury			Injury		
		6/27 (%)	Height (inch)	Yield (Bu/A)	6/27 (%)	Height (inch)	Yield (Bu/A)
Everest 2.0 + Preference + AMS	0.75 oz + 3.2 oz + 2.35 pt	6	28	37	6	26	29
Everest 2.0 + Preference + AMS	1 oz + 3.2 oz + 2.35 pt	5	28	35	5	25	26
AL-X1581ac + Preference + AMS	2 oz + 3.2 oz + 2.35 pt	6	28	40	5	25	34
AL-X1581af + Preference + AMS	2 oz + 3.2 oz + 2.35 pt	5	29	38	4	26	34
AL-X1581ag + Preference + AMS	2 oz + 3.2 oz + 2.35 pt	4	29	38	4	25	34
Varro + Preference + AMS	6.85 oz + 3.2 oz + 2.35 pt	0	30	41	0	26	30
Varro + Preference + AMS	10.27 oz + 3.2 oz + 2.35 pt	0	29	38	0	26	32
PerfectMatch + Preference + AMS	1 pt + 3.2 oz + 2.35 pt	9	29	40	8	26	37
PerfectMatch + Preference + AMS	1.5 pt + 3.2 oz + 2.35 pt	11	28	33	11	24	33
TeamMate + Preference + AMS	1 oz + 3.2 oz + 2.35 pt	0	29	40	0	26	39
TeamMate + Preference + AMS	1.5 oz + 3.2 oz + 2.35 pt	1	28	31	1	26	37
Huskie Complete	13.7 oz	1	30	42	1	27	32
Untreated Check	--	--	30	44	--	26	34
LSD (0.05)		5	1	ns	4	1	ns

Table 2.

Treatment	Rate (Product/A)	Shelly			Valda		
		Injury			Injury		
		6/27 (%)	Height (inch)	Yield (Bu/A)	6/27 (%)	Height (inch)	Yield (Bu/A)
Everest 2.0 + Preference + AMS	0.75 oz + 3.2 oz + 2.35 pt	6	27	33	6	28	37
Everest 2.0 + Preference + AMS	1 oz + 3.2 oz + 2.35 pt	5	27	30	5	28	33
AL-X1581ac + Preference + AMS	2 oz + 3.2 oz + 2.35 pt	6	27	45	5	28	44
AL-X1581af + Preference + AMS	2 oz + 3.2 oz + 2.35 pt	5	28	36	4	29	43
AL-X1581ag + Preference + AMS	2 oz + 3.2 oz + 2.35 pt	4	26	35	4	27	40
Varro + Preference + AMS	6.85 oz + 3.2 oz + 2.35 pt	0	27	44	0	28	31
Varro + Preference + AMS	10.27 oz + 3.2 oz + 2.35 pt	0	27	43	0	29	42
PerfectMatch + Preference + AMS	1 pt + 3.2 oz + 2.35 pt	8	26	47	8	28	47
PerfectMatch + Preference + AMS	1.5 pt + 3.2 oz + 2.35 pt	11	26	37	10	28	40
TeamMate + Preference + AMS	1 oz + 3.2 oz + 2.35 pt	0	28	42	0	29	46
TeamMate + Preference + AMS	1.5 oz + 3.2 oz + 2.35 pt	1	28	47	1	28	44
Huskie Complete	13.7 oz	1	27	49	1	30	54
Untreated Check	--	--	28	44	--	30	48
LSD (0.05)		5	ns	ns	4	ns	ns

Everest 2.0 3.5SC = flucarbazone-sodium & cloquintacet (safener).

Preference = nonionic surfactant.

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

AL-X1581ac 1.75SC = experimental from Arysta.

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AL-X1581ag 1.75SC = experimental from Arysta.

Varro 0.083L = thiencazabone-methyl.

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

TeamMate 21.5WG = pyroxsulam.

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