

Hard red spring wheat tolerance to postemergence herbicides at Rosemount, MN - 2014.

Durgan, Beverly R., Douglas W. Miller, and Bradley Kinkaid. 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 6.4 and 4.1% organic matter. Soil test for P and K were 24 lbs/A and 204 lbs/A, respectively. Following soybeans, the experimental area was fall chisel plowed. On May 5, the area was fertilized with 70 lbs/A N, 25 lbs/A P, and 50 lbs/A K and field cultivated twice. The HRSW varieties 'Forefront', 'LCS Iguacu', 'Linkert', 'RB-07', 'Rollag' and 'SY-Soren' were seeded with a 12 foot wide drill at 115 lbs/A on May 6. 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 12 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 4. Environmental conditions at application are listed below. Crop injury was visually rated. Crop height was measured at maturity. Yields were determined by harvesting a 5 X 12 foot strip in the treated area with a small plot combine. Data is summarized by variety and is presented in Tables 1 to 3.

Treatment Date	June 4
Air Temperature (°F)	77
Relative humidity (%)	40
Dewpoint (°F)	51
Soil Temperature (°F)	75
Soil Moisture	moist at 0.25"
Sky	25% clouds
Wind	E 2-7 mph
Rainfall before application	
Week 1 (inch)	2.44
Rainfall after application	
Week 1 (inch)	1.22
Week 2 (inch)	3.10

<u>Wheat Variety</u>	<u>Height (inch)</u>	<u>Leaf Stage</u>	<u>Tillers</u>	<u>Zadoks Code</u>
Forefront	6-9	4.8-5.0	2	Z15 , Z22
LCS Iguaca	5-7	4.5-4.8	1-2	Z15 , Z21-22
Linkert	5-7	4.6-4.9	1-2	Z15 , Z21-22
RB-07	5-7	4.5-4.7	2-3	Z15 , Z22-23
Rollag	5-7	4.7-4.9	1-2	Z15 , Z21-22
SYSoren	6-8	4.8-5.0	1-2	Z15 , Z21-22

While overall injury was generally low, most treatments resulted in some degree of injury with the higher rates causing the greatest degree. Rimfire Max at the 4.5 and 6 oz/A rates caused the greatest injury symptoms (9% to 11%) at the July 3 rating date followed by the high rate of GoldSky (8%) and the high rate of Huskie Complete (6%). All were significantly greater than the untreated check. On August 3, the highest rates of Rimfire Max (5%) and GoldSky (4%) show injury significantly greater than the untreated check. With the exception of Forefront, there were no significant height or yield differences noted in the wheat varieties. Forefront showed some height reduction with the high rates of GoldSky, Rimfire Max, and Huskie Complete. Analysis of variance of Forefront yields showed statistically significant yield differences present. However, based on the high variability of individual plot yields between reps, it seemed questionable that treatments had a real affect on yields.

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Table 1.

Treatment	Rate (Product/A)	Forefront				LCS Iguacu			
		Injury		Height (inch)	Yield (Bu/A)	Injury		Height (inch)	Yield (Bu/A)
		7/3 (%)	8/3 (%)			7/3 (%)	8/3 (%)		
Everest 2.0 + Newtone	1.0 oz + 12.8 oz	0	0	35	61	0	0	30	67
Everest 2.0 + Newtone	1.5 oz + 12.8 oz	4	1	33	57	4	1	29	64
Everest 2.0 + Newtone	2.0 oz + 12.8 oz	5	0	33	68	5	0	29	74
GoldSky + Preference	1 pt + 3.2 oz	1	0	34	64	1	0	29	63
GoldSky + Preference	1.5 pt + 3.2 oz	4	0	33	59	4	0	29	61
GoldSky + Preference	2 pt + 3.2 oz	8	4	32	38	8	4	30	61
Rimfire Max + Destiny HC	3 oz + 0.75 pt	4	1	34	58	4	1	30	61
Rimfire Max + Destiny HC	4.5 oz + 0.75 pt	11	3	33	47	11	3	30	62
Rimfire Max + Destiny HC	6 oz + 0.75 pt	11	5	32	56	11	5	30	67
Huskie Complete	13.7 oz	3	1	34	67	3	1	31	75
Huskie Complete	20.5 oz	5	3	33	61	5	3	30	68
Huskie Complete	27.4 oz	6	1	32	63	6	1	30	63
Axial XL	16.4 oz	0	0	33	56	0	0	30	63
Untreated Check	--	0	0	35	42	0	0	30	58
LSD (0.05)		5	3	2	15	5	3	ns	ns

Table 2.

Treatment	Rate (Product/A)	Linkert				RB07			
		Injury		Height (inch)	Yield (Bu/A)	Injury		Height (inch)	Yield (Bu/A)
		7/3 (%)	8/3 (%)			7/3 (%)	8/3 (%)		
Everest 2.0 + Newtone	1.0 oz + 12.8 oz	0	0	27	51	1	0	30	47
Everest 2.0 + Newtone	1.5 oz + 12.8 oz	4	1	28	48	4	1	30	43
Everest 2.0 + Newtone	2.0 oz + 12.8 oz	5	0	27	51	5	0	30	54
GoldSky + Preference	1 pt + 3.2 oz	1	0	27	58	1	0	29	49
GoldSky + Preference	1.5 pt + 3.2 oz	4	0	27	50	4	0	30	46
GoldSky + Preference	2 pt + 3.2 oz	8	4	27	42	8	4	30	38
Rimfire Max + Destiny HC	3 oz + 0.75 pt	4	1	27	44	4	1	30	41
Rimfire Max + Destiny HC	4.5 oz + 0.75 pt	9	3	29	41	11	3	28	32
Rimfire Max + Destiny HC	6 oz + 0.75 pt	11	5	27	46	11	5	29	41
Huskie Complete	13.7 oz	3	1	28	51	3	1	31	43
Huskie Complete	20.5 oz	5	3	27	49	5	3	30	42
Huskie Complete	27.4 oz	6	1	27	49	6	1	30	41
Axial XL	16.4 oz	0	0	28	49	0	0	30	46
Untreated Check	--	0	0	29	41	0	0	32	46
LSD (0.05)		5	3	ns	ns	5	3	ns	ns

Everest 2.0 3.27SC = flucarbazone-sodium & cloquintacet (safener).

Newtone = surfactant blend and ammoniated salts.

GoldSky 0.84L = pyroxulam (0.11 lb ai/gal) & fluroxypyr (0.71 lb ae/gal) & florasulam (0.018 lb ai/gal).

Preference = nonionic surfactant.

Rimfire Max 6.67WDG = propoxycarbazine-sodium (4.76%) & mesosulfuron-methyl (1.91%).

Destiny HC = methylated soybean oil, high fructose corn syrup, sorbitan fatty acid esters.

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).

Axial XL 0.42 EC = pinoxaden and adigor adjuvant.

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Table 3.

Treatment	Rate (Product/A)	Rollag				SY-Soren			
		Injury		Height (inch)	Yield (Bu/A)	Injury		Height (inch)	Yield (Bu/A)
		7/3 (%)	8/3 (%)			7/3 (%)	8/3 (%)		
Everest 2.0 + Newtone	1.0 oz + 12.8 oz	0	0	29	58	0	0	28	57
Everest 2.0 + Newtone	1.5 oz + 12.8 oz	4	1	29	51	4	1	27	53
Everest 2.0 + Newtone	2.0 oz + 12.8 oz	5	0	28	57	5	0	27	57
GoldSky + Preference	1 pt + 3.2 oz	1	0	29	54	1	0	27	53
GoldSky + Preference	1.5 pt + 3.2 oz	4	0	28	55	4	0	27	52
GoldSky + Preference	2 pt + 3.2 oz	8	4	28	43	8	4	27	43
Rimfire Max + Destiny HC	3 oz + 0.75 pt	4	1	28	53	4	1	27	48
Rimfire Max + Destiny HC	4.5 oz + 0.75 pt	9	3	29	49	9	3	27	50
Rimfire Max + Destiny HC	6 oz + 0.75 pt	11	5	27	50	11	5	28	47
Huskie Complete	13.7 oz	3	1	29	51	3	1	28	57
Huskie Complete	20.5 oz	5	3	28	45	5	3	28	57
Huskie Complete	27.4 oz	6	1	28	51	6	1	27	50
Axial XL	16.4 oz	0	0	29	53	0	0	27	52
Untreated Check	--	0	0	30	47	0	0	28	48
LSD (0.05)		5	3	ns	ns	5	3	ns	ns

Everest 2.0 3.27SC = flucarbazone-sodium & cloquintacet (safener).

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