

**Hard red spring wheat and barley tolerance to postemergence herbicides at Crookston, MN - 2007.** Durgan, Beverly R., Jochum J. Wiersma, James H. Cameron and Douglas W. Miller. This experiment was designed to evaluate the tolerance of selected Hard Red Spring Wheat (HRSW) and barley varieties to several postemergence herbicides. The experiment was conducted at Crookston, MN on a Donaldson/Wheaton loam. Following soybeans, the experimental area was chisel plowed in the fall of 2006. In the spring of 2007, 110 lbs/A N was applied and the experimental area was tilled with a field cultivator to prepare the seedbed. . The HRSW varieties 'Ada', 'Banton', 'Freyr', 'Glenn', 'Howard', 'Kelby', 'Knudson', 'Oklee', 'Steele-ND', 'Traverse', and 'Ulen' and the spring barley varieties 'Lacey' and 'Stellar' were seeded on April 25 at 105 lbs/A and 98 lbs/A for wheat and barley, respectively. All treatments were applied with a CO<sub>2</sub> pressured backpack type sprayer delivering 10 gpa at 30 psi using 80015 flat-fan nozzles. Herbicides were applied on May 29. The experimental design was a strip plot with three replications. Varieties were seeded in strips randomized within each replication. Herbicide treatments were applied across all varieties. Each herbicide x variety plot was 8 by 8 ft. Environmental conditions are listed below. Crop injury was rated visually. Plant heights and grain yield were measured. Data is summarized by variety and presented in the tables 1 through 7.

<b>Treatment Date</b>	<b>May 29</b>
Temperature (°F)	
Air	72
Soil	60
Relative Humidity (%)	75
Wind (mph)	S 5.5
Sky	cloudy
Small Grain Stage	4.5 leaf
Rainfall before Application	
Week 1 (inch)	1.21
Rainfall after Application	
Week 1 (inch)	0.57
Week 2 (inch)	1.28

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**Table 1.**

Treatment	Rate Product/A	Ada					Banton				
		Injury			Height (inch)	Yield (Bu/A)	Injury			Height (inch)	Yield (Bu/A)
		6/15 (%)	6/28 (%)	7/5 (%)			6/15 (%)	6/28 (%)	7/5 (%)		
Puma	0.67 pt	0	0	0	34	68	0	0	0	34	62
Puma	1.34 pt	2	0	2	34	64	0	0	2	35	64
Huskie + N-Pak AMS + Preference	13.5 oz + 1.2 pt + 3.26 oz	0	0	0	34	65	2	0	0	35	65
Huskie + N-Pak AMS + Preference	27 oz + 1.2 pt + 3.26 oz	5	0	0	34	56	5	0	0	32	62
Discover NG	12.8 oz	0	0	0	35	71	0	0	0	35	66
Discover NG	25.6 oz	5	0	0	34	68	5	0	0	34	64
Silverado + Destiny	1.78 oz + 1.5 pt	2	0	0	34	77	2	0	0	34	70
Silverado + Destiny	3.56 oz + 1.5 pt	7	0	0	34	70	10	0	0	33	65
Axial + Adigor Adjuvant	8.2 oz + 9.6 oz	0	0	0	34	69	0	0	0	33	69
Axial + Adigor Adjuvant	16.4 oz + 9.6 oz	2	0	0	34	63	2	0	0	34	66
Rimfire	2.25 oz	2	0	0	35	68	0	0	0	34	64
Rimfire	4.5 oz	3	0	2	34	66	7	0	2	34	62
Untreated Check	--	0	0	0	34	78	0	0	0	35	66
LSD (0.05)		4	ns	ns	ns	ns	5	ns	ns	ns	ns

**Table 2.**

Treatment	Rate Product/A	Freyr					Glenn				
		Injury			Height (inch)	Yield (Bu/A)	Injury			Height (inch)	Yield (Bu/A)
		6/15 (%)	6/28 (%)	7/5 (%)			6/15 (%)	6/28 (%)	7/5 (%)		
Puma	0.67 pt	0	0	0	33	63	0	0	0	36	62
Puma	1.34 pt	3	0	2	33	65	3	0	2	35	65
Huskie + N-Pak AMS + Preference	13.5 oz + 1.2 pt + 3.26 oz	3	0	0	33	64	2	0	0	36	65
Huskie + N-Pak AMS + Preference	27 oz + 1.2 pt + 3.26 oz	7	0	0	32	69	7	0	0	34	61
Discover NG	12.8 oz	2	0	0	33	61	2	0	0	35	62
Discover NG	25.6 oz	5	0	0	32	66	7	0	0	35	65
Silverado + Destiny	1.78 oz + 1.5 pt	2	0	0	32	72	2	0	0	35	68
Silverado + Destiny	3.56 oz + 1.5 pt	10	0	0	32	66	8	0	0	35	68
Axial + Adigor Adjuvant	8.2 oz + 9.6 oz	0	0	0	33	73	2	0	0	34	65
Axial + Adigor Adjuvant	16.4 oz + 9.6 oz	3	0	0	33	63	3	0	0	35	65
Rimfire	2.25 oz	0	0	0	34	65	0	0	0	36	67
Rimfire	4.5 oz	3	0	2	34	64	3	0	2	34	64
Untreated Check	--	0	0	0	34	72	0	0	0	36	67
LSD (0.05)		4	ns	ns	ns	ns	5	ns	ns	ns	ns

Puma 1EC = fenoxaprop and safener

Huskie 2.08 EC = pyrasulfotole & bromoxynil & safener.

N-Pak AMS = ammonium sulfate solution.

Preference = nonionic surfactant.

Discover NG 0.5 EC = clodinafop and cloquintocet (safener).

Silverado 2 WDG = mesosulfuron.

Destiny = methylated soybean oil and nonionic surfactant blend.

Axial 0.83 EC = pinoxaden.

Adigor Adjuvant = emulsifiable oil adjuvant.

Rimfire 10.2 WDG = propoxycarbazone (8.14%) & mesosulfuron (2.03%).

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**Table 3.**

Treatment	Rate Product/A	Howard					Kelby				
		Injury			Height (inch)	Yield (Bu/A)	Injury			Height (inch)	Yield (Bu/A)
		6/15 (%)	6/28 (%)	7/5 (%)			6/15 (%)	6/28 (%)	7/5 (%)		
Puma	0.67 pt	3	0	0	33	64	2	0	0	31	57
Puma	1.34 pt	5	0	2	33	64	0	0	2	31	57
Huskie + N-Pak AMS + Preference	13.5 oz + 1.2 pt + 3.26 oz	3	0	0	32	66	0	0	0	31	56
Huskie + N-Pak AMS + Preference	27 oz + 1.2 pt + 3.26 oz	8	0	0	31	67	3	0	0	31	63
Discover NG	12.8 oz	2	0	0	33	63	0	0	0	32	60
Discover NG	25.6 oz	7	0	0	33	64	3	0	0	32	65
Silverado + Destiny	1.78 oz + 1.5 pt	2	0	0	31	68	2	0	0	30	65
Silverado + Destiny	3.56 oz + 1.5 pt	8	0	0	32	65	10	0	0	30	60
Axial + Adigor Adjuvant	8.2 oz + 9.6 oz	0	0	0	32	67	0	0	0	32	61
Axial + Adigor Adjuvant	16.4 oz + 9.6 oz	3	0	0	32	64	3	0	0	31	55
Rimfire	2.25 oz	3	0	0	30	65	0	0	0	31	60
Rimfire	4.5 oz	5	0	2	31	65	3	0	2	30	57
Untreated Check	--	0	0	0	31	68	0	0	0	30	68
LSD (0.05)		ns	ns	ns	ns	ns	5	ns	ns	ns	ns

**Table 4.**

Treatment	Rate Product/A	Knudson					Oklee				
		Injury			Height (inch)	Yield (Bu/A)	Injury			Height (inch)	Yield (Bu/A)
		6/15 (%)	6/28 (%)	7/5 (%)			6/15 (%)	6/28 (%)	7/5 (%)		
Puma	0.67 pt	0	0	0	34	75	0	0	0	33	66
Puma	1.34 pt	2	0	2	35	75	5	0	2	32	65
Huskie + N-Pak AMS + Preference	13.5 oz + 1.2 pt + 3.26 oz	2	0	0	34	76	2	0	0	33	66
Huskie + N-Pak AMS + Preference	27 oz + 1.2 pt + 3.26 oz	3	0	0	33	75	2	0	0	32	68
Discover NG	12.8 oz	0	0	0	34	76	2	0	0	30	64
Discover NG	25.6 oz	5	0	0	33	80	8	0	0	32	63
Silverado + Destiny	1.78 oz + 1.5 pt	3	0	0	33	80	2	0	0	33	70
Silverado + Destiny	3.56 oz + 1.5 pt	10	0	0	32	76	5	0	0	31	67
Axial + Adigor Adjuvant	8.2 oz + 9.6 oz	0	0	0	33	81	0	0	0	34	67
Axial + Adigor Adjuvant	16.4 oz + 9.6 oz	3	0	0	34	75	3	0	0	33	66
Rimfire	2.25 oz	2	0	0	35	77	2	0	0	33	67
Rimfire	4.5 oz	7	0	2	33	71	3	0	2	30	67
Untreated Check	--	0	0	0	34	79	0	0	0	34	65
LSD (0.05)		4	ns	ns	ns	ns	ns	ns	ns	2	ns

Puma 1EC = fenoxaprop and safener

Huskie 2.08 EC = pyrasulfotole & bromoxynil & safener.

N-Pak AMS = ammonium sulfate solution.

Preference = nonionic surfactant.

Discover NG 0.5 EC = clodinafop and cloquintocet (safener).

Silverado 2 WDG = mesosulfuron.

Destiny = methylated soybean oil and nonionic surfactant blend.

Axial 0.83 EC = pinoxaden.

Adigor Adjuvant = emulsifiable oil adjuvant.

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**Table 5.**

Treatment	Rate Product/A	Steele					Traverse				
		Injury			Height (inch)	Yield (Bu/A)	Injury			Height (inch)	Yield (Bu/A)
		6/15 (%)	6/28 (%)	7/5 (%)			6/15 (%)	6/28 (%)	7/5 (%)		
Puma	0.67 pt	2	0	0	36	68	3	0	0	35	78
Puma	1.34 pt	2	0	2	37	67	5	0	2	38	79
Huskie + N-Pak AMS + Preference	13.5 oz + 1.2 pt + 3.26 oz	2	0	0	36	67	2	0	0	36	77
Huskie + N-Pak AMS + Preference	27 oz + 1.2 pt + 3.26 oz	3	0	0	37	71	8	0	0	35	79
Discover NG	12.8 oz	0	0	0	35	72	2	0	0	35	76
Discover NG	25.6 oz	3	0	0	37	73	7	0	0	33	75
Silverado + Destiny	1.78 oz + 1.5 pt	2	0	0	36	75	2	0	0	36	81
Silverado + Destiny	3.56 oz + 1.5 pt	5	0	0	37	72	8	0	0	36	82
Axial + Adigor Adjuvant	8.2 oz + 9.6 oz	2	0	0	37	72	0	0	0	36	83
Axial + Adigor Adjuvant	16.4 oz + 9.6 oz	5	0	0	36	70	2	0	0	35	76
Rimfire	2.25 oz	2	0	0	35	72	2	0	0	34	79
Rimfire	4.5 oz	3	0	2	34	69	3	0	2	34	74
Untreated Check	--	0	0	0	36	74	0	0	0	36	81
LSD (0.05)		ns	ns	ns	ns	ns	5	ns	ns	ns	ns

**Table 6.**

Treatment	Rate Product/A	Ulen				
		Injury			Height (inch)	Yield (Bu/A)
		6/15 (%)	6/28 (%)	7/5 (%)		
Puma	0.67 pt	2	0	0	35	71
Puma	1.34 pt	3	0	2	34	72
Huskie + N-Pak AMS + Preference	13.5 oz + 1.2 pt + 3.26 oz	0	0	0	35	67
Huskie + N-Pak AMS + Preference	27 oz + 1.2 pt + 3.26 oz	3	0	0	35	74
Discover NG	12.8 oz	2	0	0	34	69
Discover NG	25.6 oz	7	0	0	34	69
Silverado + Destiny	1.78 oz + 1.5 pt	2	0	0	35	70
Silverado + Destiny	3.56 oz + 1.5 pt	5	0	0	34	74
Axial + Adigor Adjuvant	8.2 oz + 9.6 oz	2	0	0	34	71
Axial + Adigor Adjuvant	16.4 oz + 9.6 oz	3	0	0	34	71
Rimfire	2.25 oz	0	0	0	35	74
Rimfire	4.5 oz	3	0	2	34	71
Untreated Check	--	0	0	0	36	71
LSD (0.05)		ns	ns	ns	ns	ns

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**Table 7.**

Treatment	Rate Product/A	Lacey					Stellar				
		Injury			Height (inch)	Yield (Bu/A)	Injury			Height (inch)	Yield (Bu/A)
		6/15 (%)	6/28 (%)	7/5 (%)			6/15 (%)	6/28 (%)	7/5 (%)		
Puma	0.67 pt	5	5	0	33	76	7	3	0	34	74
Puma	1.34 pt	5	3	0	33	83	2	2	0	33	81
Huskie + N-Pak AMS + Preference	13.5 oz + 1.2 pt + 3.26 oz	3	3	0	34	85	3	0	0	35	55
Huskie + N-Pak AMS + Preference	27 oz + 1.2 pt + 3.26 oz	20	17	0	34	75	5	5	0	35	64
Discover NG	12.8 oz	53	48	7	29	46	53	50	7	31	41
Discover NG	25.6 oz	60	55	8	31	54	60	58	12	30	36
Silverado + Destiny	1.78 oz + 1.5 pt	23	20	3	32	73	35	18	13	30	64
Silverado + Destiny	3.56 oz + 1.5 pt	37	40	5	30	66	35	47	12	30	59
Axial + Adigor Adjuvant	8.2 oz + 9.6 oz	3	3	0	33	85	23	23	0	34	82
Axial + Adigor Adjuvant	16.4 oz + 9.6 oz	7	5	0	33	85	5	5	0	35	76
Rimfire	2.25 oz	33	33	17	30	86	50	43	25	31	52
Rimfire	4.5 oz	53	52	33	33	81	70	65	50	25	19
Untreated Check	--	0	0	0	33	83	0	0	0	32	82
LSD (0.05)		16	17	9	ns	22	23	18	13	3	36

Puma 1EC = fenoxaprop and safener

Huskie 2.08 EC = pyrasulfotole & bromoxynil & safener.

N-Pak AMS = ammonium sulfate solution.

Preference = nonionic surfactant.

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