Hard red spring wheat and barley tolerance to postemergence herbicides at Crookston, MN - 2006. 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 and a plant growth regulator. The experiment was conducted at Crookston, MN on a Donaldson/Wheaton loam. Following soybeans, the experimental area was chisel plowed in the fall of 2005. In the spring of 2006, 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', 'Granger', 'HJ98', 'Knudson', 'Oklee', 'Steele-ND', 'Traverse', and 'Ulen' and the spring barley varieties 'Lacey' and 'Robust' were seeded on May 9 at 105 lbs/A and 98 lbs/A for wheat and barley, respectively. All treatments were applied with a CO_2 pressured backpack type sprayer delivering 10 gpa at 30 psi using 80015 flat-fan nozzles. Herbicides were applied on June 1 and the plant growth regulator was applied on June 7. 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 is presented in the tables 1 through 7.

Treatment Date	June 1	June 7
Target stage	3-4 leaf	4-5 leaf
Temperature (°F)		
Air	80	67
Soil	72	64
Relative Humidity (%)	32	61
Rainfall before Application		
Week 1 (inch)	0.11	0.68
Rainfall after Application		
Week 1 (inch)	0.64	0.10
Week 2 (inch)	0.13	0.07

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Table 1.

		Ada						Banton					
		Injury						Injury					
Treatment	Rate	6/8	6/16	6/23	7/3	Height	Yield	6/8	6/16	6/23	7/3	Height	Yield
	Product/A	(%)	(%)	(%)	(%)	(inch)	(Bu/A)	(%)	(%)	(%)	(%)	(inch)	(Bu/A)
Puma	0.67 pt	2	0	0	0	31	75	2	0	0	0	32	78
Puma	1.34 pt	0	0	0	0	30	73	0	0	0	0	31	77
Palisade	6.85 oz	0	0	10	7	29	59	0	12	7	7	29	73
Palisade	13.7 oz	0	2	33	28	27	62	2	32	42	32	23	71
Discover NG	12.8 oz	0	0	0	0	31	75	0	0	0	0	31	82
Discover NG	25.6 oz	0	0	5	5	28	68	3	0	8	8	32	75
Silverado + Destiny	1.78 oz + 1.5 pt	10	0	7	5	30	65	18	3	7	5	31	74
Silverado + Destiny	3.56 oz + 1.5 pt	10	0	5	5	29	67	22	0	5	5	31	77
Axial + Adigor Adjuvant	8.2 oz + 9.6 oz	0	0	0	0	29	68	0	0	0	0	30	77
Axial + Adigor Adjuvant	16.4 oz + 9.6 oz	0	0	0	0	30	68	3	0	0	0	31	76
Rimfire	2.25 oz	0	0	7	5	33	59	2	2	10	8	33	75
Rimfire	4.5 oz	0	0	8	7	29	58	8	1	8	7	32	71
Weedy Check	--	0	0	0	0	29	65	0	0	0	0	30	72
LSD (0.05)		6	ns	10	7	2	ns	9	5	8	5	3	ns

Table 2.

		Freyr						Glenn					
		Injury						Injury					
Treatment	Rate	6/8	6/16	6/23	7/3	Height	Yield	6/8	6/16	6/23	7/3	Height	Yield
	Product/A	(%)	(%)	(%)	(%)	(inch)	(Bu/A)	(%)	(%)	(%)	(%)	(inch)	(Bu/A)
Puma	0.67 pt	0	0	0	0	35	79	0	0	0	0	36	73
Puma	1.34 pt	0	0	0	0	31	78	2	0	0	0	35	72
Palisade	6.85 oz	0	0	10	7	32	75	0	5	10	7	31	73
Palisade	13.7 oz	0	2	33	28	27	71	0	13	38	32	26	72
Discover NG	12.8 oz	0	0	0	0	34	79	0	0	0	0	35	74
Discover NG	25.6 oz	0	0	5	5	33	75	2	0	5	5	36	77
Silverado + Destiny	1.78 oz + 1.5 pt	13	0	7	5	32	77	17	0	5	5	33	72
Silverado + Destiny	3.56 oz + 1.5 pt	13	0	5	5	32	75	15	0	7	5	33	76
Axial + Adigor Adjuvant	8.2 oz + 9.6 oz	0	0	0	0	33	76	2	0	0	0	35	70
Axial + Adigor Adjuvant	16.4 oz + 9.6 oz	3	0	0	0	33	77	2	0	0	0	35	71
Rimfire	2.25 oz	0	0	7	5	33	72	2	0	7	5	37	73
Rimfire	4.5 oz	5	0	8	7	32	74	3	0	8	7	36	71
Weedy Check	--	0	0	0	0	33	72	1.7	0	0	0	36	73
LSD (0.05)		8	ns	10	7	2	ns	7	3	8	6	3	ns

Puma 1EC = fenoxaprop and safener

Palisade EC = trinexapac-ethyl (growth regulator).

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 = emulsifable oil adjuvant.

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

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Table 3.

		Granger						HJ98					
		Injury						Injury					
Treatment	Rate	6/8	6/16	6/23	7/3	Height	Yield	6/8	6/16	6/23	7/3	Height	Yield
	Product/A	(%)	(%)	(%)	(%)	(inch)	(Bu/A)	(%)	(%)	(%)	(%)	(inch)	(Bu/A)
Puma	0.67 pt	2	0	0	0	37	75	3	0	0	0	30	74
Puma	1.34 pt	0	0	0	0	36	78	2	0	0	0	32	75
Palisade	6.85 oz	0	5	10	7	32	75	0	3	10	7	29	72
Palisade	13.7 oz	0	15	32	23	32	72	0	12	37	32	27	68
Discover NG	12.8 oz	0	0	0	0	36	76	0	0	0	0	32	70
Discover NG	25.6 oz	0	0	5	5	37	74	2	0	5	5	32	68
Silverado + Destiny	1.78 oz + 1.5 pt	8	0	7	5	37	75	27	2	7	5	29	64
Silverado + Destiny	3.56 oz + 1.5 pt	8	0	7	5	36	71	25	1	7	5	31	66
Axial + Adigor Adjuvant	8.2 oz + 9.6 oz	2	0	0	0	37	72	0	0	0	0	31	68
Axial + Adigor Adjuvant	16.4 oz + 9.6 oz	3	0	0	0	36	72	5	0	0	0	29	70
Rimfire	2.25 oz	0	1	7	5	35	74	2	2	7	5	33	71
Rimfire	4.5 oz	10	1	8	7	37	71	17	2	8	7	31	68
Weedy Check	--	0	0	0	0	38	72	0	0	0	0	31	66
LSD (0.05)		5	1	7	6	ns	ns	8	3	9	6	2	ns

Table 4.

		Knudson						Oklee					
		Injury						Injury					
Treatment	Rate	6/8	6/16	6/23	7/3	Height	Yield	6/8	6/16	6/23	7/3	Height	Yield
	Product/A	(%)	(%)	(%)	(%)	(inch)	(Bu/A)	(%)	(%)	(%)	(%)	(inch)	(Bu/A)
Puma	0.67 pt	2	0	0	0	32	76	0	0	0	0	34	74
Puma	1.34 pt	5	0	0	0	31	73	0	0	0	0	33	66
Palisade	6.85 oz	0	6	10	7	29	70	0	7	10	7	29	61
Palisade	13.7 oz	0	9	38	33	29	67	0	15	37	30	21	50
Discover NG	12.8 oz	0	1	0	0	30	74	0	0	0	0	34	67
Discover NG	25.6 oz	2	0	7	5	30	71	3	0	5	5	34	66
Silverado + Destiny	1.78 oz + 1.5 pt	28	3	5	5	28	65	8	2	5	5	33	65
Silverado + Destiny	3.56 oz + 1.5 pt	28	5	5	5	28	69	10	0	7	5	32	70
Axial + Adigor Adjuvant	8.2 oz + 9.6 oz	0	0	0	0	28	67	0	0	0	0	33	67
Axial + Adigor Adjuvant	16.4 oz + 9.6 oz	0	0	0	0	29	65	2	0	0	0	34	65
Rimfire	2.25 oz	0	0	7	5	29	72	0	0	7	5	33	60
Rimfire	4.5 oz	18	2	8	7	30	67	3	0	8	7	33	69
Weedy Check	--	0	1.7	0	0	30	72	0	0	0	0	33	60
LSD (0.05)		9	4	8	6	ns	7	5	2	8	6	4	10

Puma 1EC = fenoxaprop and safener

Palisade EC = trinexapac-ethyl (growth regulator).

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 = emulsifable oil adjuvant.

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

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		Steele						Traverse					
		Injury						Injury					
Treatment	Rate	6/8	6/16	6/23	7/3	Height	Yield	6/8	6/16	6/23	7/3	Height	Yield
	Product/A	(%)	(%)	(%)	(%)	(inch)	(Bu/A)	(%)	(%)	(%)	(%)	(inch)	(Bu/A)
Puma	0.67 pt	0	0	0	0	36	78	0	0	0	0	36	70
Puma	1.34 pt	0	0	0	0	35	79	0	0	0	0	32	69
Palisade	6.85 oz	0	0	10	7	33	87	0	5	10	7	31	80
Palisade	13.7 oz	0	9	27	25	28	81	2	22	35	28	25	69
Discover NG	12.8 oz	0	0	0	0	34	83	0	0	0	0	32	73
Discover NG	25.6 oz	0	0	5	5	34	84	3	0	5	5	33	74
Silverado + Destiny	1.78 oz + 1.5 pt	7	0	5	5	32	78	12	0	5	5	34	73
Silverado + Destiny	3.56 oz + 1.5 pt	10	0	7	5	33	75	13	0	7	5	34	69
Axial + Adigor Adjuvant	8.2 oz + 9.6 oz	0	0	0	0	34	78	0	0	0	0	33	64
Axial + Adigor Adjuvant	16.4 oz + 9.6 oz	2	0	0	0	33	73	3	0	0	0	34	67
Rimfire	2.25 oz	0	0	7	5	35	83	0	0	7	5	34	70
Rimfire	4.5 oz	3	1	8	7	34	78	7	0	8	7	33	71
Weedy Check	--	0	0	0	0	34	75	0	0	0	0	33	72
LSD (0.05)		4	3	7	6	2	ns	5	6	9	7	5	ns

Table 6.

		Ulen					
		Injury					
Treatment	Rate	6/8	6/16	6/23	7/3	Height	Yield
	Product/A	(%)	(%)	(%)	(%)	(inch)	(Bu/A)
Puma	0.67 pt	2	0	0	0	35	76
Puma	1.34 pt	5	0	0	0	33	75
Palisade	6.85 oz	0	5	10	7	31	74
Palisade	13.7 oz	0	15	35	30	27	75
Discover NG	12.8 oz	0	0	0	0	33	77
Discover NG	25.6 oz	3	0	7	5	32	74
Silverado + Destiny	1.78 oz + 1.5 pt	5	0	7	5	32	71
Silverado + Destiny	3.56 oz + 1.5 pt	7	0	5	5	33	76
Axial + Adigor Adjuvant	8.2 oz + 9.6 oz	0	0	0	0	33	74
Axial + Adigor Adjuvant	16.4 oz + 9.6 oz	0	0	0	0	33	70
Rimfire	2.25 oz	0	0	7	5	32	72
Rimfire	4.5 oz	2	0	8	7	29	75
Weedy Check	--	0	0	0	0	33	74
LSD (0.05)		ns	7	9	7	4	ns

Puma 1EC = fenoxaprop and safener

Palisade EC = trinexapac-ethyl (growth regulator).

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 = emulsifable oil adjuvant.

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

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		Lacey						Robust					
		Injury						Injury					
Treatment	Rate	6/8	6/16	6/23	7/3	Height	Yield	6/8	6/16	6/23	7/3	Height	Yield
	Product/A	(%)	(%)	(%)	(%)	(inch)	(Bu/A)	(%)	(%)	(%)	(%)	(inch)	(Bu/A)
Puma	0.67 pt	5	0	3	3	31	121	3	0	3	3	31	116
Puma	1.34 pt	2	0	0	0	31	120	0	0	0	0	33	113
Palisade	6.85 oz	0	4	28	23	29	115	2	5	28	23	28	110
Palisade	13.7 oz	2	17	40	30	21	102	2	17	52	43	21	95
Discover NG	12.8 oz	28	7	15	12	31	105	28	5	13	10	32	104
Discover NG	25.6 oz	37	12	23	22	29	110	33	12	22	20	32	110
Silverado + Destiny	1.78 oz + 1.5 pt	12	3	13	13	31	118	18	5	10	10	31	110
Silverado + Destiny	3.56 oz + 1.5 pt	23	3	15	10	30	117	27	5	15	10	32	110
Axial + Adigor Adjuvant	8.2 oz + 9.6 oz	0	0	5	5	30	115	3	2	5	5	32	106
Axial + Adigor Adjuvant	16.4 oz + 9.6 oz	0	0	10	10	29	104	0	0	10	10	31	100
Rimfire	2.25 oz	28	27	38	32	27	107	33	28	33	25	29	101
Rimfire	4.5 oz	43	37	43	35	26	96	43	43	40	28	26	85
Weedy Check	--	0	0	0	0	31	125	0	0	0	0	34	118
LSD (0.05)		9	6	14	11	3	ns	11	8	12	10	3	14

Puma 1EC = fenoxaprop and safener

Palisade EC = trinexapac-ethyl (growth regulator).

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.

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