

**Hard red spring wheat and barley tolerance to postemergence herbicides at Crookston, MN - 2010.** 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 2009. In the spring of 2010, 110 lbs/A N was applied and the experimental area was tilled with a field cultivator to prepare the seedbed. The HRSW varieties 'Albany', Breaker', 'Brick', 'Faller', 'Jenna', 'Knudson', 'RB-07', 'Sabin', 'Samson', 'Tom', and 'Vantage', and the spring barley varieties "M122' and 'Rasmusson' were seeded on April 19 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 26. 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 26</b>
Air temperature (°F)	68
Soil temperature (°F)	69
Relative humidity (%)	34
Wind	S 7 mph
Sky	partly cloudy
Rainfall before Application	
Week 1 (inch)	3.23
Rainfall after Application	
Week 1 (inch)	0.46
Week 2 (inch)	0.66

Injury symptoms from Everest and Rimfire Max were height reduction, yellowing , and leaf tip burn. Injury from GoldSky and Wolverine was a reduction in height. Injury from Everest 2.0 was stunting in wheat and height reduction, yellowing , and leaf tip burn in barley. Axial TBC injury in barley was height reduction.

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**Table 1.**

Treatment	Rate Product/A	Albany					Breaker				
		Injury			Height (inch)	Yield (Bu/A)	Injury			Height (inch)	Yield (Bu/A)
		6/4 (%)	6/25 (%)	7/2 (%)			6/4 (%)	6/25 (%)	7/2 (%)		
Everest + Preference	0.62 oz + 3.2 oz	13	8	15	35	87	18	7	10	35	76
Everest + Preference	1.23 oz + 3.2 oz	25	18	20	31	84	32	10	8	35	80
GoldSky + Preference	1 pt + 3.2 oz	12	8	8	35	88	13	8	10	34	76
GoldSky + Preference	2 pt + 3.2 oz	13	13	13	34	79	15	8	12	36	74
Everest 2.0 + Newtone	0.69 oz + 0.8 pt	5	5	5	33	92	7	7	8	35	77
Everest 2.0 + Newtone	1.38 oz + 0.8 pt	5	5	5	32	87	5	10	12	33	76
Rimfire Max + Destiny HC	3 oz + 1.5 pt	10	10	10	34	88	12	8	8	36	78
Rimfire Max + Destiny HC	6 oz + 1.5 pt	12	12	15	34	83	13	15	15	36	74
Wolverine	27.4 oz	7	3	3	34	91	7	5	7	38	84
Wolverine	54.8 oz	7	3	3	37	95	7	2	3	37	84
Axial TBC + Adigor Adjuvant	8.85 oz + 9.6 oz	5	3	3	33	91	5	7	5	36	71
Axial TBC + Adigor Adjuvant	17.7 oz + 9.6 oz	5	8	8	36	92	7	10	10	38	78
Untreated Check	--	0	0	0	37	90	0	0	0	37	80
LSD (0.05)		9	7	6	4	ns	11	7	7	ns	ns

**Table 2.**

Treatment	Rate Product/A	Brick					Faller				
		Injury			Height (inch)	Yield (Bu/A)	Injury			Height (inch)	Yield (Bu/A)
		6/4 (%)	6/25 (%)	7/2 (%)			6/4 (%)	6/25 (%)	7/2 (%)		
Everest + Preference	0.62 oz + 3.2 oz	13	8	12	38	66	23	8	10	35	84
Everest + Preference	1.23 oz + 3.2 oz	27	12	13	39	68	42	17	18	35	86
GoldSky + Preference	1 pt + 3.2 oz	8	3	5	38	69	13	3	5	39	87
GoldSky + Preference	2 pt + 3.2 oz	10	8	8	39	65	15	10	12	38	77
Everest 2.0 + Newtone	0.69 oz + 0.8 pt	7	5	7	37	71	7	8	10	37	80
Everest 2.0 + Newtone	1.38 oz + 0.8 pt	5	7	8	37	68	5	12	12	35	79
Rimfire Max + Destiny HC	3 oz + 1.5 pt	17	8	8	39	70	12	12	10	39	82
Rimfire Max + Destiny HC	6 oz + 1.5 pt	15	13	15	39	71	18	10	12	38	82
Wolverine	27.4 oz	7	3	5	39	82	7	2	3	39	79
Wolverine	54.8 oz	7	2	3	37	70	7	2	3	39	89
Axial TBC + Adigor Adjuvant	8.85 oz + 9.6 oz	5	5	5	39	64	5	5	3	39	80
Axial TBC + Adigor Adjuvant	17.7 oz + 9.6 oz	5	5	7	39	66	5	5	7	37	83
Untreated Check	--	0	0	0	37	71	0	0	0	39	88
LSD (0.05)		7	7	6	ns	ns	9	7	7	ns	ns

Everest 70 WG = flucarbazone.

Preference = nonionic surfactant.

GoldSky 1.53L = pyroxulam (0.11 lb ai/gal) & fluroxypyr (0.71 lb ae/gal) & florasulam (0.018 lb ai/gal).

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

Newtone = surfactant blend and ammoniated salts.

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

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

Wolverine 1.38E = fenoxaprop-p-ethyl (0.38 lb ai/gal) & pyrasulfotole (0.17 lb ai/gal) & bromoxynil octanoate (0.41 lb ai/gal) & bromoxynil heptanoate (0.42 lb ai/gal)

Axial TBC 0.838 EC = pinoxaden (0.774 lb ai/gal) & florasulam (0.0645 lb ai/gal) & safener.

Adigor Adjuvant = emulsifiable oil adjuvant.

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**Table 3.**

Treatment	Rate Product/A	Jenna					Knudson				
		Injury			Height (inch)	Yield (Bu/A)	Injury			Height (inch)	Yield (Bu/A)
		6/4 (%)	6/25 (%)	7/2 (%)			6/4 (%)	6/25 (%)	7/2 (%)		
Everest + Preference	0.62 oz + 3.2 oz	23	12	12	32	75	18	17	13	32	77
Everest + Preference	1.23 oz + 3.2 oz	28	12	13	35	78	28	13	18	32	76
GoldSky + Preference	1 pt + 3.2 oz	15	5	5	33	80	13	13	7	35	71
GoldSky + Preference	2 pt + 3.2 oz	18	7	8	34	79	13	8	12	35	77
Everest 2.0 + Newtone	0.69 oz + 0.8 pt	8	3	5	34	81	7	7	8	35	73
Everest 2.0 + Newtone	1.38 oz + 0.8 pt	5	3	5	34	80	5	10	13	34	75
Rimfire Max + Destiny HC	3 oz + 1.5 pt	25	12	12	34	76	22	15	13	34	79
Rimfire Max + Destiny HC	6 oz + 1.5 pt	33	23	20	34	69	32	25	23	36	75
Wolverine	27.4 oz	7	2	3	35	82	7	3	5	35	85
Wolverine	54.8 oz	7	3	5	35	86	7	2	3	38	82
Axial TBC + Adigor Adjuvant	8.85 oz + 9.6 oz	5	3	3	33	71	5	3	5	33	73
Axial TBC + Adigor Adjuvant	17.7 oz + 9.6 oz	5	7	7	35	80	5	7	8	35	74
Untreated Check	--	0	0	0	36	86	0	0	0	36	79
LSD (0.05)		14	7	6	ns	ns	8	11	8	ns	ns

**Table 4.**

Treatment	Rate Product/A	RB07					Sabin				
		Injury			Height (inch)	Yield (Bu/A)	Injury			Height (inch)	Yield (Bu/A)
		6/4 (%)	6/25 (%)	7/2 (%)			6/4 (%)	6/25 (%)	7/2 (%)		
Everest + Preference	0.62 oz + 3.2 oz	30	17	13	33	70	30	15	18	33	65
Everest + Preference	1.23 oz + 3.2 oz	30	27	18	33	62	38	25	20	33	65
GoldSky + Preference	1 pt + 3.2 oz	12	7	8	34	71	13	7	7	32	72
GoldSky + Preference	2 pt + 3.2 oz	13	7	10	34	70	15	8	12	35	66
Everest 2.0 + Newtone	0.69 oz + 0.8 pt	7	5	10	33	63	7	3	5	34	69
Everest 2.0 + Newtone	1.38 oz + 0.8 pt	7	10	12	31	64	5	3	5	35	72
Rimfire Max + Destiny HC	3 oz + 1.5 pt	18	10	10	35	74	15	10	10	34	69
Rimfire Max + Destiny HC	6 oz + 1.5 pt	23	17	17	32	65	20	18	20	33	72
Wolverine	27.4 oz	7	3	5	35	81	7	2	3	37	78
Wolverine	54.8 oz	7	2	5	35	73	7	3	5	37	77
Axial TBC + Adigor Adjuvant	8.85 oz + 9.6 oz	5	7	5	33	66	7	5	3	36	69
Axial TBC + Adigor Adjuvant	17.7 oz + 9.6 oz	5	5	8	35	69	7	5	8	37	74
Untreated Check	--	0	0	0	35	78	0	0	0	37	87
LSD (0.05)		11	8	9	ns	ns	12	8	11	ns	10

Everest 70 WG = flucarbazone.

Preference = nonionic surfactant.

GoldSky 1.53L = pyroxsulam (0.11 lb ai/gal) & fluroxypyr (0.71 lb ae/gal) & florasulam (0.018 lb ai/gal).

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

Newtone = surfactant blend and ammoniated salts.

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

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

Wolverine 1.38E = fenoxaprop-p-ethyl (0.38 lb ai/gal) & pyrasulfotole (0.17 lb ai/gal) & bromoxynil octanoate (0.41 lb ai/gal) & bromoxynil heptanoate (0.42 lb ai/gal)

Axial TBC 0.838 EC = pinoxaden (0.774 lb ai/gal) & florasulam (0.0645 lb ai/gal) & safener.

Adigor Adjuvant = emulsifiable oil adjuvant.

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**Table 5.**

Treatment	Rate Product/A	Samson					Tom				
		Injury			Height (inch)	Yield (Bu/A)	Injury			Height (inch)	Yield (Bu/A)
		6/4 (%)	6/25 (%)	7/2 (%)			6/4 (%)	6/25 (%)	7/2 (%)		
Everest + Preference	0.62 oz + 3.2 oz	22	18	17	33	79	23	13	13	35	69
Everest + Preference	1.23 oz + 3.2 oz	25	15	18	31	80	32	18	20	35	66
GoldSky + Preference	1 pt + 3.2 oz	13	10	8	35	80	13	8	7	37	67
GoldSky + Preference	2 pt + 3.2 oz	13	8	12	35	79	15	8	10	36	66
Everest 2.0 + Newtone	0.69 oz + 0.8 pt	7	7	8	34	75	8	5	7	37	70
Everest 2.0 + Newtone	1.38 oz + 0.8 pt	5	8	10	34	79	5	5	7	38	69
Rimfire Max + Destiny HC	3 oz + 1.5 pt	17	13	12	32	80	23	17	15	37	67
Rimfire Max + Destiny HC	6 oz + 1.5 pt	22	18	15	33	75	35	23	20	34	71
Wolverine	27.4 oz	5	5	7	35	79	7	2	3	37	82
Wolverine	54.8 oz	5	2	3	34	81	7	2	3	36	73
Axial TBC + Adigor Adjuvant	8.85 oz + 9.6 oz	5	7	5	34	67	5	3	3	37	64
Axial TBC + Adigor Adjuvant	17.7 oz + 9.6 oz	5	8	10	33	75	5	5	7	37	68
Untreated Check	--	0	0	0	35	80	0	0	0	35	71
LSD (0.05)		12	10	7	ns	ns	11	9	8	ns	ns

**Table 6.**

Treatment	Rate Product/A	Vantage				
		Injury			Height (inch)	Yield (Bu/A)
		6/4 (%)	6/25 (%)	7/2 (%)		
Everest + Preference	0.62 oz + 3.2 oz	13	8	12	35	67
Everest + Preference	1.23 oz + 3.2 oz	25	8	12	36	75
GoldSky + Preference	1 pt + 3.2 oz	15	3	5	36	76
GoldSky + Preference	2 pt + 3.2 oz	20	13	13	34	68
Everest 2.0 + Newtone	0.69 oz + 0.8 pt	5	3	5	36	76
Everest 2.0 + Newtone	1.38 oz + 0.8 pt	5	15	12	35	70
Rimfire Max + Destiny HC	3 oz + 1.5 pt	12	13	10	34	67
Rimfire Max + Destiny HC	6 oz + 1.5 pt	12	12	10	34	71
Wolverine	27.4 oz	7	2	3	38	76
Wolverine	54.8 oz	7	2	3	37	76
Axial TBC + Adigor Adjuvant	8.85 oz + 9.6 oz	5	8	3	36	69
Axial TBC + Adigor Adjuvant	17.7 oz + 9.6 oz	5	7	7	35	74
Untreated Check	--	0	0	0	37	83
LSD (0.05)		11	10	7	ns	ns

Everest 70 WG = flucarbazone.

Preference = nonionic surfactant.

GoldSky 1.53L = pyroxsulam (0.11 lb ai/gal) & fluroxypyr (0.71 lb ae/gal) & florasulam (0.018 lb ai/gal).

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

Newtone = surfactant blend and ammoniated salts.

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

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

Wolverine 1.38E = fenoxaprop-p-ethyl (0.38 lb ai/gal) & pyrasulfotole (0.17 lb ai/gal) & bromoxynil octanoate (0.41 lb ai/gal) & bromoxynil heptanoate (0.42 lb ai/gal)

Axial TBC 0.838 EC = pinoxaden (0.774 lb ai/gal) & florasulam (0.0645 lb ai/gal) & safener.

Adigor Adjuvant = emulsifiable oil adjuvant.

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**Table 7.**

Treatment	Rate Product/A	M122					Rasmusson				
		Injury			Height (inch)	Yield (Bu/A)	Injury			Height (inch)	Yield (Bu/A)
		6/4 (%)	6/25 (%)	7/2 (%)			6/4 (%)	6/25 (%)	7/2 (%)		
Everest + Preference	0.62 oz + 3.2 oz	33	52	57	34	100	37	63	62	34	116
Everest + Preference	1.23 oz + 3.2 oz	38	62	55	32	71	37	63	55	28	94
GoldSky + Preference	1 pt + 3.2 oz	30	53	48	32	86	30	33	43	32	99
GoldSky + Preference	2 pt + 3.2 oz	27	47	47	32	97	30	43	42	28	102
Everest 2.0 + Newton	0.69 oz + 0.8 pt	8	37	32	33	107	8	27	25	30	115
Everest 2.0 + Newton	1.38 oz + 0.8 pt	15	43	53	27	86	20	40	50	33	100
Rimfire Max + Destiny HC	3 oz + 1.5 pt	33	27	35	34	110	35	25	35	35	116
Rimfire Max + Destiny HC	6 oz + 1.5 pt	42	38	32	33	104	40	32	33	35	111
Wolverine	27.4 oz	10	3	5	38	120	8	3	7	34	130
Wolverine	54.8 oz	13	2	3	38	112	8	3	5	37	123
Axial TBC + Adigor Adjuvant	8.85 oz + 9.6 oz	15	15	7	36	105	15	13	8	36	109
Axial TBC + Adigor Adjuvant	17.7 oz + 9.6 oz	12	5	7	38	114	10	8	7	37	125
Untreated Check	--	0	0	0	37	99	0	0	0	37	126
LSD (0.05)		12	23	21	5	ns	13	23	20	5	ns

Everest 70 WG = flucarbazone.

Preference = nonionic surfactant.

GoldSky 1.53L = pyroxsulam (0.11 lb ai/gal) & fluroxypyr (0.71 lb ae/gal) & florasulam (0.018 lb ai/gal).

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

Newton = surfactant blend and ammoniated salts.

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

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

Wolverine 1.38E = fenoxaprop-p-ethyl (0.38 lb ai/gal) & pyrasulfotole (0.17 lb ai/gal) & bromoxynil octanoate (0.41 lb ai/gal) & bromoxynil heptanoate (0.42 lb ai/gal)

Axial TBC 0.838 EC = pinoxaden (0.774 lb ai/gal) & florasulam (0.0645 lb ai/gal) & safener.

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