

**Foxtail control in spring wheat with three application times at Rosemount, MN - 2015.** Durgan, Beverly R., Douglas W. Miller, and Bradley Kinkaid. This experiment was designed to evaluate foxtail control with several herbicides applied at three different foxtail stages. The experiment was conducted at Rosemount, MN on a Waukegon silt loam soil with pH 6.2 and 4.6% organic matter. Soil test for P and K were 22 lbs/A and 288 lbs/A, respectively. Following soybeans, the experimental area was fall chisel plowed. On April 15, the area was fertilized with 70 lbs/A N, 60 lbs/A P, and 60 lbs/A K and field cultivated twice. 'Linkert' hard red spring wheat was seeded with a 12 foot wide drill at 115 lbs/A on April 16. The experimental design was a randomized complete block with three replications. Plot size was 10 by 24 ft. All herbicide treatments were applied to a 6 foot strip with a backpack type CO<sub>2</sub> powered sprayer delivering 10 gpa at 35 psi using 11001 flat fan nozzles with 18 inch spacing. Target application stages were 1 leaf, 3-4 leaf, and 5-6 leaf foxtail. Application data and environmental conditions are listed below. Weed control and wheat injury were visually rated. Yields were determined by harvesting a 5 X 24 foot strip in the treated area with a small plot combine. Foxtail emergence was monitored in an area adjacent to the experimental area. Emergence results are presented in the chart below. Data is summarized in the Table below.

Treatment Date	May 4	May 27	June 9
Foxtail (giant and yellow) leaf stage	96%-1 lf, 4%-2 lf	4%-1 lf, 15%-2 lf, 39%-3 lf, 34%-4 lf, 8%-5 lf	3%-2 lf, 6%-3 lf, 18%-4 lf, 30%-5 lf, 36%-6 lf, 7%-7 lf (tillering)
height	0.12-0.75	0.25"-1 lf, 0.5"-2 lf, 1.0-1.25"-3 lf, 1.5-2.0"-4 lf, 2.0-2.5"-5 lf	0.5-0.75"-2 lf, 1.0-1.5"-3 lf, 1.5-2.5"-4 lf, 2.5-4.0"-5 lf, 4-6"-6 lf, 6-8"-7 lf
density (#/ft <sup>2</sup> )	51	178	238
Wheat stage	1.0-1.5 leaf (Zadoks Z11-12)	4.9-5.1 leaf (Zadoks Z15, Z22-23)	7.0 leaf (Zadoks Z17, Z23-24, Z40) flag leaf emerged
tillers	0	2-3	3-4
height (inch)	3-4	8-11	15-19
Air temperature (°F)	71	76	77
Relative humidity (%)	20	53	50
Dewpoint (°F)	28	58	57
Sky	80% clouds	clear – light haze	10% clouds
Wind	NE 3-7 mph	W 2-7 mph	SW 0-2 mph
Soil conditions	moist at 0.5"	moist	moist
Soil temperature (°F)	62	78	68
Rainfall before Application			
Week 1 (inch)	0.52	1.20	1.70
Rainfall after Application			
Week 1 (inch)	1.51	0.35	0.70
Week 2 (inch)	1.20	1.60	1.80

## Results

Approximately 8% of foxtail had emerged by the first application date (May 4), 64% had emerged by the second application date (May 27), and 100% by the third application date (June 9). Overall foxtail control was poor for the early application treatments. The best foxtail control was observed with the treatments applied at the second application date. Most treatments in this second application group resulted in good to excellent foxtail control with the exception of the Rimfire Max treatment, which resulted in only fair control. Treatments applied at the late application timing resulted in foxtail control that ranged from fair to excellent. The Rimfire Max treatment provided the lowest control at the late timing and Axial XL provided the best control.

The only significant injury observed was in the second application group of treatments where Rimfire Max, GoldSky and Huskie Complete caused some chlorosis visible at the early rating date.

Wheat yields were greatest for treatments applied at the second application date with an average of 48 bu/A. With the exception of Rimfire Max, treatments within this group had significantly greater yields than the weedy check. Treatments applied at the early date had an average wheat yield of 45 bu/A with no significant differences between treatments within that group or the weedy check. Treatments applied at the late date had an average wheat yield of 44 bu/A. GoldSky, Axial, and Wolverine Advanced treatments had significantly greater yields than the weedy check.

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Treatment	Rate (Product/A)	Grass Control		Wheat Injury			Wheat Yield (Bu/A)
		6/23 (%)	7/1 (%)	6/2 (%)	6/23 (%)	7/1 (%)	
<b>Application #1 (May 4)</b>							
Everest 2.0 + Widematch + MCPA ester + Preference + AMS	1 oz + 1 pt + 0.5 pt + 3.2 oz + 2.35 pt	77	53	3	2	0	44
Everest 2.0 + Widematch + Audit 1:1 + Preference + AMS	1 oz + 1 pt + 0.4 oz + 3.2 oz + 2.35 pt	70	57	0	0	0	46
GoldSky + Preference + AMS	1 pt + 3.2 oz + 2.35 pt	63	53	2	0	0	47
Varro + Widematch + MCPA ester + Preference + AMS	6.85 oz + 1 pt + 0.5 pt + 3.2 oz + 2.35 pt	70	53	3	0	0	44
Rimfire Max + Destiny HC	3 oz + 0.75 pt	40	47	0	0	0	43
Axial XL	16.4 oz	53	47	0	2	0	43
Wolverine Advanced	27.4 oz	40	53	0	0	0	46
Huskie Complete	13.7 oz	60	53	0	0	0	45
<b>Application #2 May 27)</b>							
Everest 2.0 + Widematch + MCPA ester + Preference + AMS	1 oz + 1 pt + 0.5 pt + 3.2 oz + 2.35 pt	87	88	3	2	0	49
Everest 2.0 + Widematch + Audit 1:1 + Preference + AMS	1 oz + 1 pt + 0.4 oz + 3.2 oz + 2.35 pt	90	90	3	0	0	51
GoldSky + Preference + AMS	1 pt + 3.2 oz + 2.35 pt	90	90	10	2	0	48
Varro + Widematch + MCPA ester + Preference + AMS	6.85 oz + 1 pt + 0.5 pt + 3.2 oz + 2.35 pt	90	93	5	0	0	49
Rimfire Max + Destiny HC	3 oz + 0.75 pt	80	83	12	3	0	44
Axial XL	16.4 oz	95	95	3	0	0	47
Wolverine Advanced	27.4 oz	95	96	3	0	0	48
Huskie Complete	13.7 oz	92	92	8	0	0	47
<b>Application #3 (June 9)</b>							
Everest 2.0 + Widematch + MCPA ester + Preference + AMS	1 oz + 1 pt + 0.5 pt + 3.2 oz + 2.35 pt	78	82	0	0	0	40
Everest 2.0 + Widematch + Audit 1:1 + Preference + AMS	1 oz + 1 pt + 0.4 oz + 3.2 oz + 2.35 pt	77	87	0	0	0	41
GoldSky + Preference + AMS	1 pt + 3.2 oz + 2.35 pt	75	87	0	0	0	53
Varro + Widematch + MCPA ester + Preference + AMS	6.85 oz + 1 pt + 0.5 pt + 3.2 oz + 2.35 pt	68	87	0	0	0	34
Rimfire Max + Destiny HC	3 oz + 0.75 pt	47	77	0	2	0	44
Axial XL	16.4 oz	83	95	0	0	0	50
Wolverine Advanced	27.4 oz	87	93	0	0	0	47
Huskie Complete	13.7 oz	78	87	0	2	0	40
Weedy Check	--	--	--	0	0	0	41
LSD (0.05)		18	10	5	ns	ns	5

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

Widematch 1.5E = clopyralid (0.75 lb ae/gal) & fluroxypyr (0.75 lb ae/gal).

MCPA Ester 4E.

Preference = nonionic surfactant.

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

Audit 1:1 50WDG = thifensulfuron (25%) & tribenuron (25%).

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

Varro = thiencazobone-methyl & safener.

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

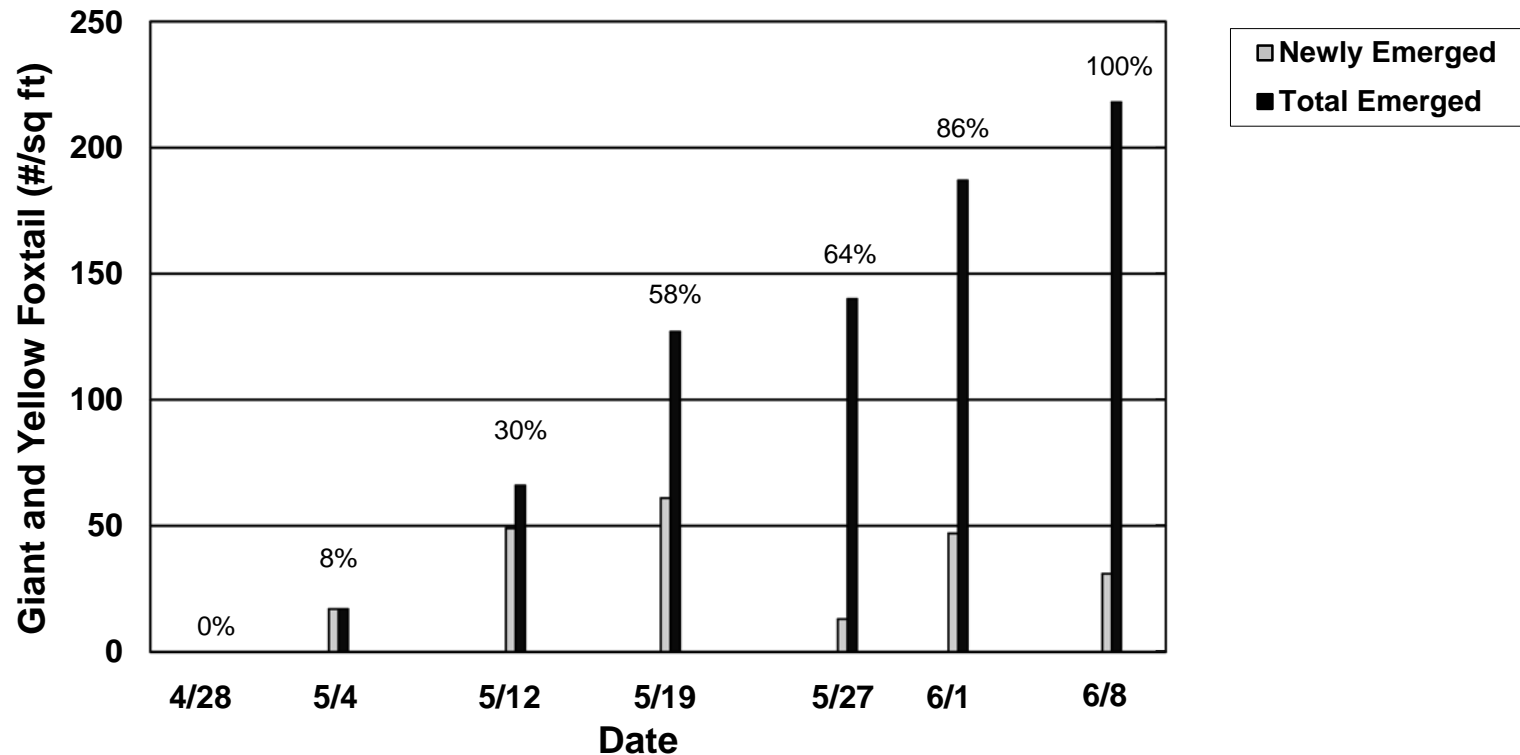
Destiny HC = methylated soybean oil, high fructose corn syrup, sorbitan fatty acid esters.

Axial XL 0.42EC = pinoxaden and adigor adjuvant.

Wolverine Advanced 1.58E = fenoxaprop-p-ethyl (0.40 lb ai/gal) & pyrasulfotole (0.13 lb ai/gal) & bromoxynil (1.05 lb ai/gal).

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

# 2015 Foxtail Emergence at Rosemount, MN



Average Total Population = 218/sq ft