

## Preemergence Corn Herbicide Performance on Annual Weeds at Waseca, MN in 2014

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The objective of this study was to evaluate soil applied corn herbicides at reduced and maximum label rates for control of annual weeds in corn. This study was conducted on a Nicollet Clay Loam soil containing 6.3% organic matter, pH 6.9 and soil test P and K levels of 20 and 130 lb/A, respectively. A randomized complete block design with four replications and a plot size of 10 by 30 ft was used. The site was planted to corn in 2013 and fall tillage was done using a moldboard plow. The area was fertilized with 180 lbs of nitrogen as urea in the spring of 2014. On May 23, 2014, Dekalb 'DKC 53-56' glufosinate resistant/glyphosate resistant field corn was planted in 30-inch rows at a seeding rate of 36,500 seeds/A. All treatments were applied with a tractor-mounted compressed air sprayer delivering 15 gpa at a pressure of 35 psi. The sprayer was equipped with 80015 flat-fan nozzles spaced 15 inches apart on the boom. Application dates, environmental conditions, plant sizes and rainfall data are listed below:

Date	May 23	June 26	June 30
Treatment	Pre	Post 1	Post 2
Temperature (F)			
Air	76	82	67
Soil (4-inch)	65	78	70
Relative humidity	40	60	80
Wind (mph)	N 8	S 12	N 3
Sky	clear	P cloudy	cloudy
Soil moisture	medium	moist	medium
Corn			
Leaf no.	-	4	5
Height (inch)	-	5	6
Giant foxtail			
Leaf no.	-	3	3
Height (inch)	-	4	4
Common ragweed			
Leaf no.	-	4	5
Height (inch)	-	4	6
Common lambsquarters			
Leaf no.	-	6	6
Height (inch)	-	4	5
Velvetleaf			
Leaf no.	-	3	3
Height (inch)	-	3	3
Redroot pigweed			
Leaf no.	-	6	6
Height (inch)	-	4	4
Common Cocklebur			
Leaf no.	-	3	3
Height (inch)	-	6	7
Rainfall after application (inch)			
1 week	0.33	0.89	0.31
2 week	4.28	0.28	0.36
3 week	2.04	0.26	0.02

(Southern Research and Outreach Center, University of Minnesota, Waseca).

Yield, herbicide rates and weed control are shown in Table 1. Instigate resulted in the poorest control of giant ragweed of all the preemergence herbicides evaluated. Broadleaf weed control was poorest with Harness and best with Lumax of all the preemergence herbicides evaluated.

Table 1. Preemergence Corn Herbicide Performance on Annual Weeds at Waseca, MN in 2014

Herbicide	Rate	Giant	Common	Common	Common		Redroot	Giant	Common	Common	Common		Redroot	Yield
		foxtail	cocklebur	lambsquarters	ragweed	Velvetleaf	pigweed	foxtail	cocklebur	lambsquarters	ragweed	Velvetleaf	pigweed	
		27-Jun					% Control		13-Sep					
<u>Preemergence/POST III (V4 corn)</u>		(product/A)												
		Bu/A												
Harness / Roundup WeatherMax + AMS	1.5 pt / 32 oz + 3 qt	95	61	95	59	95	95	95	95	95	95	93	95	160
SureStart / Roundup WeatherMax + AMS	1.5 pt / 32 oz + 3 qt	95	75	95	75	86	95	95	95	94	91	94	95	138
Verdict / Roundup WeatherMax + AMS	18 oz / 32 oz + 3 qt	94	79	95	84	95	95	95	95	95	95	95	95	139
Lumax / Roundup WeatherMax + AMS	2 qt / 32 oz + 3 qt	95	95	95	95	95	95	95	95	95	95	95	95	147
Instigate / Roundup WeatherMax + AMS	5.25 oz / 32 oz + 3 qt	79	89	96	86	96	91	95	95	95	95	95	95	138
<u>Preemergence</u>														
Harness	3 pt	95	73	95	64	79	95	95	78	53	25	45	78	119
SureStart	3 pt	95	80	95	80	89	95	95	81	86	48	95	95	130
Outlook + Sharpen	21 oz + 3.5 oz	95	74	88	66	85	95	95	90	86	60	95	95	120
Lumax	3.25 qt	95	95	95	95	95	95	93	95	95	95	95	95	157
Instigate	7 oz	74	90	95	78	88	95	86	84	95	76	95	95	146
<u>Preemergence/POST III (V6 corn)</u>														
Harness / Ignite + AMS	3 pt / 32 oz + 3 qt	95	81	95	76	83	95	95	95	95	95	95	95	145
SureStart / Ignite + AMS	3 pt / 32 oz + 3 qt	96	68	93	69	78	95	95	95	95	93	95	95	147
Outlook + Sharpen / Ignite + AMS	21 oz + 3.5 oz / 32 oz + 3 qt	95	83	95	74	91	95	95	95	95	93	95	95	142
Lumax / Ignite + AMS	3.25 qt / 32 oz + 3 qt	95	95	95	95	95	95	95	95	95	95	95	95	161
Instigate / Ignite + AMS	7 oz / 32 oz + 3 qt	88	95	94	89	95	94	95	95	95	95	95	95	135
Weedy Check	-	0	0	0	0	0	0	0	0	0	0	0	0	96
	LSD (0.10)	8	13	5	17	15	2	5	15	12	12	12	10	17