

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

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The objective of this study was to evaluate corn herbicide systems marketed to corn growers on several annual weed species at Waseca, MN. This study was conducted on a Webster Clay Loam soil containing 6.4% organic matter, pH 6.9 and soil test P and K levels of 15 and 139 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 anhydrous ammonia 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 9	June 13	June 24	July 7
Treatment	Pre	Post I	Post II	Post III	Post IV
Temperature (F)					
Air	76	63	71	79	83
Soil (4-inch)	65	63	68	76	75
Relative humidity	40	76	45	35	30
Wind (mph)	N 8	N 10	E 5	W6	W 2
Sky	clear	Cloudy	P cloudy	Clear	clear
Soil moisture	medium	moist	moist	moist	medium
Corn					
Leaf no.	-	1	2	3	5
Height (inch)	-	1"	3	5	10
Giant foxtail					
Leaf no.	-	1	2	3	2
Height (inch)	-	0.5	3	4	2
Common ragweed					
Leaf no.	-	2	3	4	2
Height (inch)	-	1	2	4	1
Common lambsquarters					
Leaf no.	-	2	4	6	3
Height (inch)	-	1	2	4	2
Velvetleaf					
Leaf no.	-	1	2	3	2
Height (inch)	-	0.5	1	3	1
Ammarath spp.					
Leaf no.	-	2	3	4	3
Height (inch)	-	1	3	4	2
Rainfall after application (inch)					
1 week	0.33	2.02	7.41	0.74	0.42
2 week	4.28	5.92	0.53	0.43	0.00
3 week	2.04	0.70	0.89	0.26	0.46

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

Yield, herbicide rates and weed control are shown in Table1. One pass Keystone LA NXT + Hornet resulted in poor control of common ragweed and velvetleaf. Harness at 1.25 pt/A pre followed by Roundup postemergence resulted in poor control of common ragweed.

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

Herbicide	Rate (product/A)	PRE					FINAL				
		Gift	Corw	Colq	Vele	Amaranth	Gift	Corw	Colq	Vele	Amaranth
<u>Preemergence</u>		% Control									
Keystone LA NXT + Hornet	2 qt / 3 oz	99	86	98	99	99	95	74	88	81	95
<u>Preemergence/POST III (V4 corn)</u>											
Harness / Laudis + Clarity + Destiny HC + AMS	1.7 pt / 3 oz + 8 oz + 0.5% + 2 qt	99	85	99	99	99	95	95	95	95	95
Zemax / Halex GT + atarazine + NIS + AMS	1.5 qt / 3.6 pt + 1 pt + 0.25% + 3 qt	99	91	99	99	99	95	95	95	95	95
Corvus / Laudis + + Clarity + Roundup PowerMax + Destiny HC + AMS	5.6 oz / 3 oz + 32 oz + 0.5% + 2 qt	99	97	99	99	99	95	95	95	95	95
Breakfree / Realm Q + Abundit Extra+ NIS + AMS	1.5 pt / 4 oz + 32 oz + 0.25%+ 3qt	99	93	99	99	99	95	95	93	95	95
Breakfree / Realm Q + Abundit Extra+ NIS + AMS	2.5 pt / 4 oz + 32 oz + 0.25%+ 3qt	99	80	99	99	99	95	95	95	95	95
Breakfree ATZ Lite + Instigate / Abundit Extra + AMS	2 qt + 6 oz / 32 oz + 3qt	99	98	99	99	99	95	95	95	95	95
Harness / Roundup WeatherMax + AMS	1.25 pt / 32 oz + 3 qt	99	94	99	99	99	95	78	95	95	95
Zemax / Callisto GT + atrazine + NIS + AMS	1.5 qt / 2 pt + 1 pt + 0.25% + 3 qt	99	86	99	99	99	95	95	95	95	95
Dual II Magnum / Halex GT + Northstar + NIS + AMS	2 pt / 3.6 pt + 2.5 oz + 0.25% + 3 qt	99	45	99	99	99	95	95	95	95	95
SureStart / Durango + AMS	2 pt / 32 oz + 3 qt	99	84	99	94	99	95	95	95	95	95
SureStart / Durango + AMS	2.5 pt / 32 oz + 3 qt	99	89	99	99	99	95	95	95	95	95
Verdict / Armezon + Outlook +Roundup PowerMax + NIS + AMS	18 oz / 0.5 oz + 12 oz + 22 oz + 0.25% + 3 qt	99	96	99	99	99	95	95	95	95	95
Verdict / Roundup PowerMax + Status + NIS + AMS	16 oz / 32 oz + 2.5 oz + 0.25% + 3 qt	99	95	99	99	99	95	95	95	95	95
Anthem + Stanza / Roundup PowerMax + AMS	10 oz + 5 oz / 32 oz + 3 qt	91	81	93	93	93	95	95	95	95	95
Harness / Impact + Roundup PowerMax + Destiny HC + AMS	1.75 pt / 0.75 oz + 32 oz + 0.5% + 3 qt	99	84	93	99	99	95	95	95	95	95
<u>POST I (V1 corn) / POST IV (V6 corn)</u>											
Roundup WeatherMax + AMS / Roundup WeatherMax + AMS	22 oz + 3 qt / 22 oz + 3 qt	94	91	96	96	97	95	95	88	95	95
<u>POST II (V3 corn) / Post III (V6 corn)</u>											
Capreno + RoundupPowerMax + AMS / Laudis + Destiny HC + AMS	3 oz + 18 oz + 2 qt / 3 oz + 0.5% + 3 qt	0	0	0	0	0	95	95	95	95	95
<u>POST II (2" - 4" weeds)</u>											
Harness Extra + Impact + Roundup PowerMax + Destiny HC + AMS	2.4 pt + 0.75 oz + 32 oz + 0.5% + 3 qt	0	0	0	0	0	95	95	95	95	95
Solstice + Roundup PowerMax + NIS + AMS	3 oz + 32 oz + 0.25% + 3 qt	0	0	0	0	0	93	95	95	95	95
SureStart + Durango + AMS	2 pt + 32 oz + 3 qt	0	0	0	0	0	95	91	95	95	95
Realm Q + Abundit Extra + NIS + AMS	4 oz + 32 oz + 0.25% + 3 qt	0	0	0	0	0	85	95	95	95	95
<u>Checks</u>											
Weedy Check	-	0	0	0	0	0	0	0	0	0	0
Weed-Free Check	-	100	100	100	100	100	100	100	100	100	100
	LSD (0.10)	3	15	4	4	2	3	9	5	7	1