

Annual weed control with Anthem applied PRE or POST in soybeans at Lamberton, MN in 2011.

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The objective of this study was to evaluate Anthem applied preemergence or applied postemergence tank mixed with glyphosate for annual grass and annual broadleaf weed control in glyphosate-resistant soybeans. This study was conducted on a Normania loam soil containing 4.2% organic matter, pH 6.1 and soil test P and K levels of 68 and 376 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 2010 and was moldboard plowed. On June 7, 2011, Asgrow 'AG1931' glyphosate-resistant soybeans were planted in 30-inch rows at a seeding rate of 160,000 seeds/A. On August 2, all plots were treated with bifenthrin for soybean aphid and spider mite control. All treatments were applied with a tractor-mounted sprayer delivering 20 gpa at a pressure of 40 psi. The sprayer was equipped with 8002 flat-fan nozzles spaced 15 inches apart on the boom. Application dates, environmental conditions, plant sizes and rainfall data are listed below:

Date	June 8	July 3	July 8	July 25
Treatment	PRE	POST I	POST II	POST III
Temperature (F)				
air	66	72	79	81
soil (4 inch)	72	76	82	80
Relative humidity (%)	64	69	65	62
Wind (mph)	NW 10	calm	calm	W 6
Sky	clear	p. cloudy	clear	clear
Soil moisture	dry	moist	dry	dry
Soybean				
leaf no.	-	V2	V4	R2
height (inch)	-	6	11	22
Yellow foxtail				
leaf no.	-	2 to 4	2 to 4	4 to 6
height (inch)	-	3 to 4	4 to 6	6 to 9
no./ft ²	-	20	< 1	4
Common lambsquarters				
leaf no.	-	4 to 6	-	-
height (inch)	-	1 to 3	-	-
no./ft ²	-	1	-	-
Tall waterhemp				
leaf no.	-	2 to 4	3 to 5	4 to 6
height (inch)	-	1 to 3	2 to 4	3 to 5
no./ft ²	-	8	< 1	< 1
Rainfall after application (inch)				
1 week	4.71	0.23	1.91	0.87
2 week	2.94	2.02	0.33	0.00
3 week	0.79	0.00	0.87	0.31

(Southwest Research and Outreach Center, University of Minnesota, Lamberton).

Table. Annual weed control with Anthem applied PRE or POST in soybeans at Lamberton, MN in 2011 (Getting).

Treatment ^a	Rate (oz/A, pt/A, or %)	Injury			Yellow foxtail				Common lambsquarters				Tall waterhemp				Yield (bu/A) ^c
		Jun 27	Jul 7	Jul 14	Jul 7	Jul 14	Jul 25	Aug 18	Jul 7	Jul 14	Jul 25	Aug 18	Jul 7	Jul 14	Jul 25	Aug 18	
		-----(%)-			-----(% control)-----												
Preemergence/POST II (6-inch weeds)																	
Anthem /	8 oz /	1 b	0 e	0 d	96 a-c	97 a	98 a	98 a	98 a	98 a	98 a	98 a	98 a	98 a	98 a	98 a	51.1 a-c
Roundup PowerMax + AMS	22 oz + 2 qt																
Authority First /	6.4 oz /	0 b	0 e	0 d	94 b-d	97 a	96 a	97 ab	98 a	98 a	98 a	98 a	98 a	98 a	98 a	98 ab	53.5 ab
Roundup PowerMax + AMS	22 oz + 2 qt																
Authority Assist /	9 oz /	0 b	0 e	0 d	93 de	96 ab	97 a	97 ab	98 a	98 a	98 a	98 a	98 a	98 a	98 a	98 a	51.2 a-c
Roundup PowerMax + AMS	22 oz + 2 qt																
Anthem + Authority First /	7 oz + 3.2 oz /	0 b	0 e	0 d	93 c-e	97 a	98 a	98 a	98 a	98 a	98 a	98 a	98 a	98 a	98 a	98 a	51.6 a-c
Roundup PowerMax + AMS	22 oz + 2 qt																
Authority MTZ /	16 oz /	1 b	0 e	0 d	88 f	97 ab	96 a	96 b	98 a	98 a	98 a	98 a	97 b	98 a	98 a	98 a	52.1 a-c
Roundup PowerMax + AMS	22 oz + 2 qt																
Fierce /	3 oz /	6 a	1 e	0 d	91 e	97 ab	98 a	98 a	98 a	98 a	98 a	98 a	98 a	98 a	98 ab	98 a	50.6 a-c
Roundup PowerMax + AMS	22 oz + 2 qt																
Prefix /	2 pt /	1 b	0 e	0 d	94 b-d	97 a	97 a	98 a	98 a	98 a	98 a	98 a	98 a	98 a	98 a	98 a	52.6 a-c
Roundup PowerMax + AMS	22 oz + 2 qt																
POST I (1 to 4-inch weeds)																	
Anthem	8 oz	0 b	20 b	10 b	98 a	95 b	97 a	97 ab	98 a	98 a	98 a	98 a	98 a	98 a	98 a	98 a	49.6 bc
+ Roundup PowerMax + AMS	+ 22 oz + 0.25% + 3qt																
Prefix	2 pt	0 b	25 a	15 a	96 a-c	97 a	97 a	97 ab	98 a	98 a	98 a	98 a	98 a	98 a	98 a	98 a	49.2 c
+ Roundup PowerMax + AMS	+ 22 oz + 2 qt																
Flexstar GT + AMS	3.5 pt + 2 qt	0 b	15 c	6 c	97 ab	96 ab	90 b	88 d	98 a	98 a	98 a	98 a	98 a	98 a	98 a	98 a	54.0 a
Extreme + AMS	3 pt + 2 qt	0 b	5 d	0 d	97 a	97 ab	91 b	91 c	98 a	98 a	98 a	98 a	98 a	98 a	96 b	97 b	51.8 a-c
POST I (1 to 4-inch weeds)/POST III (re-growth)																	
Roundup PowerMax + AMS /	22 oz + 3 qt /	0 b	2 e	0 d	97 a	96 ab	85 c	98 a	98 a	98 a	98 a	98 a	98 a	98 a	96 b	98 a	52.1 a-c
Roundup PowerMax + AMS	22 oz + 3 qt																
Check																	
Weedy Check	-	0 b	0 e	0 d	0 g	0 c	0 d	0 e	0 b	0 b	0 b	0 b	0 c	0 b	0 c	0 c	13.2 d
	LSD (0.10)	2.0	2.8	0.8	2.7	1.0	2.4	1.7	ns	ns	ns	ns	0.6	ns	1.8	0.5	3.94

^a AMS = liquid spray grade ammonium sulfate.

^b Yield adjusted to 13% moisture.