

Soybean Pre Herbicide Performance at Lamberton, MN in 2014.

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The objective of this study was to evaluate pre-emerge soybean herbicide combinations for annual grass and annual broadleaf weed control in soybeans. This study was conducted on a Ves Loam soil containing 4.3% organic matter, pH 5.4 and soil test P and K levels of 20 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 with a mulch ripper. On May 28, 2014, Asgrow 'AG 2232' glyphosate-resistant soybeans were planted in 30-inch rows at a seeding rate of 160,000 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 8002 flat-fan nozzles spaced 15 inches apart on the boom. Application dates, environmental conditions, plant sizes and rainfall data are listed below:

Date	May 29	July 10
Treatment	PRE	Post I
Temperature (F)		
air	72	80
soil (4 inch)	68	72
Relative humidity (%)	49	54
Wind (mph)	ESE 7	S 14
Sky	Clear	Clear
Soil moisture	Dry	Dry
Soybeans		
leaf no.	-	V6
height (inch)	-	16"
Yellow foxtail		
leaf no.	-	2 to 6
height (inch)	-	1 to 11
no./ft ²	-	2
Common lambsquarters		
leaf no.	-	2 to 6
height (inch)	-	1 to 4
no./ft ²	-	< 1
Tall waterhemp		
leaf no.	-	2 to 6
height (inch)	-	1 to 8
no./ft ²	-	4
Rainfall after application (inch)		
1 week	2.16	0.32
2 week	0.87	0.01
3 week	3.82	0.73

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

Weed density varied from light to moderate in this trial. Pre-emerge herbicide performance benefited from the delayed planting date and early season environmental conditions. All herbicides provided excellent broadleaf weed control. Authority First PRE and Gangster PRE had lower yellow foxtail control.

Before harvest, several plots in replication 3 were accidentally destroyed during a nearby drainage tile installation. This replication was excluded from the analyses.

The weedy check was the numerically lowest yielding treatment but significant differences among treatments were not observed.

Table. Soybean Pre Herbicide at Lamberton, MN in 2014 (Vollmer, Hoverstad, Gunsolus and Potter).

Treatment ^a	Rate (oz/A, pt/A, qt/A, lb/A or %)	Yellow Foxtail				Common Lambsquarters				Tall Waterhemp				Yield ^b (bu/A)
		Jul 10	Jul 17	Jul 25	Oct 17	Jul 10	Jul 17	Jul 25	Oct 17	Jul 10	Jul 17	Jul 25	Oct 17	
Preemergence		-----(% control)-----												
Authority First	8 oz	95 ab	96 b	99 a	99 a	99 a	99 a	99 a	99 a	99 a	99 a	99 a	99 a	59 a
Boundary	3 pt	98 a	99 a	99 a	99 a	99 a	99 a	99 a	99 a	99 a	99 a	99 a	99 a	63 a
Gangster V + Gangster FR	3 oz + 0.6 oz	87 bc	89 c	84 c	98 b	99 a	99 a	99 a	99 a	99 a	99 a	99 a	99 a	63 a
Pursuit + Sharpen + Outlook	4 oz + 1 oz + 21 oz	98 a	97 ab	97 ab	99 a	98 a	98 b	99 a	99 a	97 ab	91 b	95 b	99 a	61 a
Zidua + Valor	3.5 oz + 3 oz	98 a	99 a	95 b	99 a	99 a	99 a	99 a	99 a	99 a	99 a	99 a	99 a	60 a
Preemergence/Post I (6" Weeds)														
Authority First / Roundup Power Max + AMS	4 oz / 32 oz + 3 qt	53 d	99 a	99 a	99 a	99 a	99 a	99 a	99 a	99 a	99 a	99 a	99 a	63 a
Boundary / Roundup Power Max + AMS	1.8 pt / 32 oz + 3 qt	97 ab	99 a	99 a	99 a	98 a	99 a	99 a	99 a	96 b	99 a	99 a	99 a	62 a
Gangster V + Gangster FR / Roundup Power Max + AMS	1.5 oz + 0.3 oz / 32 oz + 3 qt	91 abc	98 ab	97 ab	98 b	99 a	99 a	99 a	99 a	99 a	99 a	99 a	99 a	62 a
OpTill + Outlook / Roundup Power Max + AMS	2 oz + 10 oz / 32 oz + 3 qt	98 a	99 a	99 a	99 a	99 a	99 a	99 a	99 a	98 a	99 a	99 a	99 a	60 a
Fierce / Roundup Power Max + AMS	3 oz / 32 oz + 3 qt	91 abc	99 a	99 a	99 a	99 a	99 a	99 a	99 a	99 a	99 a	99 a	99 a	63 a
Authority First / Flexstar + Fusion + COC + AMS	8 oz / 1 pt + 12 oz + 1 qt + 3 qt	82 c	98 ab	99 a	99 a	99 a	99 a	99 a	99 a	99 a	99 a	99 a	99 a	61 a
Boundary / Flexstar + Fusion + COC + AMS	3 pt / 1 pt + 12 oz + 1 qt + 3 qt	98 a	99 a	99 a	99 a	98 a	99 a	99 a	99 a	99 a	99 a	99 a	99 a	62 a
Gangster V + Gangster FR / Flexstar + Fusion + COC + AMS	3 oz + 1 oz / 1 pt + 12 oz + 1 qt + 3 qt	94 ab	99 a	99 a	99 a	99 a	99 a	99 a	99 a	99 a	99 a	99 a	99 a	59 a
Pursuit + Sharpen + Outlook / Flexstar + Fusion + COC + AMS	4 oz + 1 oz + 21 oz / 1 pt + 12 oz + 1 qt + 3 qt	99 a	99 a	99 a	99 a	99 a	99 a	99 a	99 a	99 a	99 a	99 a	99 a	59 a
Zidua + Valor / Flexstar + Fusion + COC + AMS	3.5 oz + 3 oz / 1 pt + 12 oz + 1 qt + 3 qt	98 a	99 a	99 a	99 a	99 a	99 a	99 a	99 a	99 a	99 a	99 a	99 a	62 a
Checks														
Weedy check		0 e	0 d	0 d	0 c	0 b	0 c	0 b	0 b	0 c	0 c	0 c	0 b	56 a
	LSD (0.10)	10.6	3.1	3.8	0.9	1.0	0.6	NS	NS	2.5	4.2	2.0	NS	3.6

^a COC = crop oil concentrate; NIS = nonionic surfactant; AMS = liquid spray grade ammonium sulfate.

^b Yield adjusted to 13% moisture.