

## **Soybean Weed Management at Lamberton, MN in 2014.**

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The objective of this study was to evaluate 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 using 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 30	June 30	July 3	July 10
Treatment	PRE	Post I	Post II	Post III
Temperature (F)				
air	68	77	66	74
soil (4 inch)	68	70	70	70
Relative humidity (%)	66	58	56	62
Wind (mph)	SSE 8	SW 2	NW 3	S 7
Sky	p. cloudy	Cloudy	p. cloudy	Clear
Soil moisture	Dry	Dry	Dry	Dry
Soybeans				
leaf no.	-	V2	V3	V6
height (inch)	-	8"	11"	16"
Yellow foxtail				
leaf no.	-	2 to 4	2 to 6	2 to 6
height (inch)	-	1 to 10	1 to 10	1 to 13
no./ft <sup>2</sup>	-	4	3	2
Common lambsquarters				
leaf no.	-	2 to 4	2 to 4	2 to 6
height (inch)	-	1 to 3	1 to 3	1 to 5
no./ft <sup>2</sup>	-	2	1	< 1
Tall waterhemp				
leaf no.	-	2 to 4	2 to 4	2 to 6
height (inch)	-	1 to 3	1 to 4	1 to 10
no./ft <sup>2</sup>	-	< 1	2	3
Rainfall after application (inch)				
1 week	2.16	0.11	0.74	0.66
2 week	0.87	0.32	0.00	1.88
3 week	3.82	0.00	0.03	1.14

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

Yield, herbicide rates and percent weed control are presented in Table 1.

Warrant, Enlite, Sonic, Gangster V and Authority First pre emergent treatments provide less than 90 % control of yellow foxtail. With the exception of Warrant, pre emerge herbicides provided over 95% early-season control of waterhemp. Warrant @ 3 pts and Dual II Magnum provided less than 98% control of common lambsquarters.

All weed control programs yielded better than the untreated weedy check. Dual II Magnum pre-emergence followed by Flexstar GT post emerge on 4" weeds, Dual II Magnum + Flexstar GT post emerge at 4 inch weeds, and Valor SX pre emerge followed by Warrant + Roundup WeatherMAX on 4" weeds yielded less than the two highest yielding treatments. The Roundup PowerMAX + Cobra early post-emerge treatment followed by Roundup PowerMAX resulted in season-long stunting and appears to be reflected in yield.

Table 1. Soybean Weed Management at Lamberton, MN in 2014 (Vollmer, Hoverstad, Gunsolus and Potter).

Treatment	Rate	Yellow Foxtail				Common Lambsquarters				Tall Waterhemp				Yield	
		30-Jun	17-Jul	28-Jul	17-Oct	30-Jun	17-Jul	28-Jul	17-Oct	30-Jun	17-Jul	28-Jul	17-Oct		
<b>Preemergence / Post I (2" weeds)</b>		(% control)												bu/ac	
Valor SX/ Warrant + Roundup Weathermax + AMS	(oz/A, pt/A, qt/A, or % v/v) 2 oz / 3 pt + 32 oz + 3 qt	68 de	99 a	99 a	99 a	99 a	99 a	99 a	99 a	99 a	99 a	99 a	99 a	99 a	60 bcd
<b>Preemergence / Post II (4" weeds)</b>															
Authority First / Roundup PowerMAX+ AMS	6.4 oz / 32 oz + 3 qt	86 abc	99 a	98 a	99 a	99 a	99 a	99 a	99 a	99 a	99 a	99 a	99 a	99 a	61 abc
Authority First / Anthem + Roundup PowerMAX+ AMS	6.4 oz / 8 oz + 32 oz + 3 qt	89 abc	99 a	99 a	99 a	99 a	99 a	99 a	99 a	99 a	99 a	99 a	99 a	99 a	61 abc
Boundary / Flexstar GT + MSO + AMS	1.5 pt / 3.5 pt + 0.5% + 3 qt	97 ab	98 b	98 a	98 b	99 a	99 a	77 b	99 a	98 a	99 a	99 a	99 a	99 a	61 a-d
Dual II Magnum / Flexstar GT + MSO + AMS	2 pt / 3.5 pt + 0.5% + 3 qt	99 a	99 a	99 a	99 a	97 b	99 a	99 a	99 a	99 a	99 a	99 a	99 a	99 a	60 bcd
Gangster V + Gangster FR / Roundup PowerMAX+ AMS	2 oz + 0.4 oz / 32 oz + 3 qt	89 abc	99 a	99 a	99 a	99 a	99 a	99 a	99 a	99 a	99 a	99 a	99 a	99 a	63 ab
Fierce / Roundup PowerMAX+ AMS	3 oz / 32 oz + 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	99 a	63 abc
Valor SX/ Roundup PowerMAX+ AMS	3 oz / 32 oz + 3 qt	90 abc	99 a	74 b	99 a	99 a	99 a	99 a	99 a	99 a	99 a	99 a	99 a	99 a	61 a-d
Fierce + Classic / Roundup PowerMAX+ AMS	3 oz + 0.33 oz / 32 oz + 3 qt	96 ab	99 a	99 a	99 a	99 a	99 a	99 a	99 a	98 a	99 a	99 a	99 a	99 a	64 a
Optill Pro (Optill + Outlook) / Roundup PowerMAX+ NIS + AMS		98 ab	98 b	98 a	99 a	99 a	99 a	99 a	99 a	99 a	99 a	99 a	99 a	99 a	61 a-d
Verdict + Outlook / Roundup PowerMAX+ NIS + AMS		96 ab	99 a	99 a	99 a	99 a	99 a	99 a	99 a	99 a	99 a	99 a	99 a	99 a	61 abc
Zidua + Verdict / Roundup PowerMAX+ NIS + AMS		98 ab	99 a	99 a	99 a	99 a	98 a	99 a	99 a	99 a	99 a	99 a	99 a	99 a	62 abc
Sonic / Durango DMA + AMS	3 oz / 32 oz + 3 qt	69 de	99 a	99 a	99 a	99 a	99 a	99 a	99 a	99 a	99 a	99 a	99 a	99 a	62 abc
Sonic / Durango DMA + AMS	4.5 oz / 32 oz + 3 qt	76 cde	99 a	98 a	99 a	99 a	99 a	99 a	99 a	99 a	99 a	99 a	99 a	99 a	63 ab
Sonic / Durango DMA + FirstRate + AMS	3 oz / 32 oz + 0.3 oz + 3 qt	88 abc	99 a	99 a	99 a	99 a	99 a	99 a	99 a	99 a	99 a	99 a	99 a	99 a	63 ab
Enlite / Abundit Extra + AMS	2.8 oz / 32 oz + 3 qt	81 bcd	99 a	99 a	99 a	99 a	99 a	99 a	99 a	99 a	99 a	98 a	99 a	99 a	62 abc
Enlite / Abundit Extra + Harmony SG + AMS		87 abc	99 a	99 a	99 a	99 a	99 a	99 a	99 a	99 a	99 a	99 a	99 a	99 a	62 abc
Warrant / Roundup PowerMAX+ AMS	3 pt / 32 oz + 3 qt	68 de	99 a	99 a	99 a	95 c	99 a	99 a	99 a	95 b	99 a	99 a	99 a	99 a	61 a-d
<b>Post II (4" weeds)</b>															
Dual II Magnum + Flexstar GT + NIS +AMS	10 oz + 3.5 pt + 0.25% + 3 qt	0 f	99 a	99 a	99 a	0 d	99 a	99 a	99 a	0 c	99 a	86 c	98 b	99 a	60 cd
<b>Post I (2" weeds) / Post III (6 trifoliolate)</b>															
Roundup Weathermax + AMS / Roundup WeatherMAX+ AMS	32 oz + 3 qt / 32 oz + 3 qt	0 f	99 a	74 b	99 a	0 d	99 a	99 a	99 a	0 c	98 a	95 ab	99 a	99 a	64 a
Synchrony + Abundit Extra + AMS / Abundit Extra + AMS	0.375 oz + 32 oz + 3 qt / 32 oz + 3 qt	0 f	99 a	99 a	99 a	0 d	99 a	99 a	98 b	0 c	97 b	90 bc	99 a	99 a	63 abc
Roundup PowerMAX+ Cobra + COC + AMS / Roundup PowerMAX+ AMS	32 oz + 12.5 oz + 1 pt + 3 qt. / 32 oz _ 3 qt	0 f	99 a	99 a	99 a	0 d	99 a	99 a	99 a	0 c	99 a	99 a	99 a	99 a	58 d
<b>Checks</b>															
Weedy check		0 f	0 c	0 c	0 c	0 d	0 b	0 c	0 c	0 c	0 c	0 d	0 c	99 a	48 e
Weed-free		99 a	99 a	99 a	99 a	99 a	99 a	99 a	99 a	99 a	99 a	99 a	99 a	99 a	61 abc
	LSD (0.10)	15.6	0.7	16.5	0.5	1.5	NS	10.9	0.5	1.1	1.2	6.6	0.5	99 a	3.4

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

Yield Adjusted to 13% moisture.