

Annual weed control in glyphosate tolerant soybeans at Lamberton, MN in 1999. Getting, Jodie K. and Bruce D. Potter. The objective of this study was to evaluate herbicide combinations for annual grass and annual broadleaf control in glyphosate tolerant soybeans. This study was conducted on a Normania loam soil containing 4.4 % organic matter, pH 6.2 and soil test P and K levels of 60 and 424 lb/A, respectively. A randomized complete block design with four replications and a plot size of 10 by 30 ft was used. The test site was planted to oats in 1998 and was fall moldboard plowed. On May 18, 1999 preplant incorporated treatments were applied and tilled twice with a field cultivator set to till 3 to 4 inches deep and operated at 5 to 6 mph. The same day Asgrow 'AG 2101' glyphosate tolerant soybeans were planted in 30-inch rows at a seeding rate of 160,000 seeds/A. 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	May 18	May 18	June 15	June 17	July 7
Treatment	PPI	PRE	POST I	POST II	POST III
Temperature (F)					
air	70	60	67	70	84
soil (4 inch)	70	64	72	72	86
Relative humidity (%)	33	78	46	30	43
Wind (mph)	W 6	SSE 12	S 5	E 5	calm
Sky	clear	p. cloudy	cloudy	p. cloudy	clear
Soil moisture	moist	moist	dry	dry	dry
Soybean					
leaf no.	-	-	V2	V2	R1
height (inch)	-	-	4	5	15
Yellow foxtail					
leaf no.	-	-	2 to 4	3 to 4	2 to 4
height (inch)	-	-	3 to 5	4 to 6	2 to 4
no./ft ²	-	-	69	85	9
Common lambsquarters					
leaf no.	-	-	4 to 6	6 to 8	2 to 4
height (inch)	-	-	2 to 5	4 to 6	2 to 4
no./ft ²	-	-	3	2	< 1
Rainfall after application (inch)					
1 week	1.00	1.00	0.66	0.64	0.08
2 week	0.06	0.48	1.11	1.18	2.67
3 week	0.50	0.08	1.56	1.47	0.19

None of the treatments had visible crop injury. In early June, preemergence [Flms & Meto] provided 70% yellow foxtail control. All other soil applied treatments had greater than 93% control. In September, postemergence clethodim + AC 299,263 + lactofen + COC gave 85 and 86% yellow foxtail control. All other treatments gave greater than 95% control. All treatments provided excellent control of common lambsquarters. (Southwest Research and Outreach Center, University of Minnesota, Lamberton).

Table. Annual weed control in glyphosate tolerant soybeans at Lamberton, MN in 1999 (Getting, Potter).

Treatment ^a	Rate (lb/A or %)	Yeft			Colq			Yield (bu/A) ^b
		6/10	6/29	9/9	6/10	6/29	9/9	
<u>Preplant incorporate 2X/POST I (2 to 5-inch weeds)</u>								
Pend/Imep+NAF-75+MSO+28%N	1.24/0.063+0.008+1.0%+2.5%	97	98	98	99	98	98	47.5
Pend/Imep+NAF-75+MSO+28%N	1.24/0.063+0.016+1.0%+2.5%	95	97	98	97	98	98	46.4
Pend/AC 299,263 +NAF-75+MSO+28%N	1.24/0.03 +0.008+1.0%+2.5%	97	97	98	98	98	98	46.2
Pend/AC 299,263 +NAF-75+MSO+28%N	1.24/0.03 +0.016+1.0%+2.5%	95	95	96	97	98	98	46.7
Pend/AC 299,263 +NAF-75+NIS+28%N	1.24/0.03 +0.008+0.25%+2.5%	95	97	98	99	97	98	46.0
Pend/AC 299,263 +NAF-75+NIS+28%N	1.24/0.03 +0.016+0.25%+2.5%	97	97	98	98	98	98	46.9
Pend/Imep+Fome+MSO+28%N	1.24/0.063+0.18+1.0%+2.5%	97	97	96	97	98	98	46.8
Pend/NAF-75+COC+28%N	1.24/0.016+1.2%+2.5%	97	94	95	97	95	97	46.9
Pend/AC 299,263+MSO+28%N	1.24/0.03+1.0%+2.5%	95	97	98	98	98	98	48.0
<u>Preemergence/POST I (2 to 5-inch weeds)</u>								
[Flms&Meto]/Glyt+AMS	[0.025&0.925]/0.56+2.5	70	98	98	94	97	98	47.4
<u>Preplant incorporate 2X/POST II (4 to 6-inch weeds)</u>								
Trif/Glyt+AMS	0.75/0.75+2.5	94	98	98	98	98	98	48.3
Trif/ICIA 0224	0.75/0.75	93	98	98	97	98	98	49.1
<u>POST I (2 to 5-inch weeds)/POST III (2 to 4-inch weeds)</u>								
Glyt+AMS/Glyt+AMS	0.375+2.5/0.375+2.5	-	97	98	-	97	98	46.2
<u>POST I (2 to 5-inch weeds)</u>								
AC 299,263+MSO+28%N	0.03+1.0%+2.5%	-	93	97	-	97	98	48.3
AC 299,263+MSO+28%N	0.04+1.0%+2.5%	-	93	96	-	97	98	45.9
Clet+AC 299,263+COC	0.094+0.03+0.625%	-	86	93	-	95	96	47.6
Clet+AC 299,263+COC	0.094+0.04+0.625%	-	88	95	-	97	98	47.6
Clet+AC 299,263+Lact+COC	0.094+0.04+0.1+0.625%	-	93	86	-	97	98	39.8
Clet+AC 299,263+Lact+COC	0.125+0.04+0.1+0.625%	-	89	85	-	98	97	44.7
Seth+AC 299,263+COC	0.19+0.04+0.625%	-	93	97	-	97	98	44.1
<u>POST II (4 to 6-inch weeds)</u>								
Glyt+AMS	0.75+2.5	-	98	98	-	98	98	47.2
ICIA 0224	1.0	-	98	97	-	98	98	46.7
ICIA 0224+bentazon	1.0+0.02	-	98	97	-	98	97	45.7
ICIA 0224+fomesafen	1.0+0.18	-	98	96	-	98	98	46.5
ICIA 0224+fomesafen	0.75+0.18	-	98	96	-	98	98	47.5
ICIA 0224+fomesafen	1.0+0.12	-	98	97	-	98	98	46.6
ICIA 0224+fomesafen	0.75+0.12	-	97	95	-	97	98	45.7
ICIA 0224+Imep	0.75+0.063	-	97	98	-	97	98	49.4
<u>Checks</u>								
Weedy check	-	0	0	0	0	0	0	10.8
Hand-weeded check (Glyt POST)	-	95	99	99	98	99	99	47.7
	LSD (0.10)	4	3	3	2	2	1	3.2

^a AC 299,263 = Raptor 1L; bentazon = Basagran 4L; Clet = Select 2L; [Flms&meto] = Broadstrike & Dual Magnum 7.6EC; Fome or fomesafen = Flexstar 1.88L; Glyt = Roundup Ultra 3L; ICIA 0224 = Touchdown 5SL; Imep = Pursuit 70DF; Lact = Cobra 2E; NAF-75 = FirstRate 84WG; Pend = Prowl 3.3EC; Seth =

Prestige 1EC; Trif = Treflan 4E; COC = crop oil concentrate, Class Additive 17%; MSO = Sun IT, methylated seed oil; NIS = nonionic surfactant, Class Preference; 28%N = an aqueous solution of urea and ammonium nitrate; AMS = spray grade ammonium sulfate.

^b Yield adjusted to 13% moisture.