

Herbicide performance in soybeans at Waseca, MN common ragweed site in 2002. Hoverstad, Thomas R and Jeffrey L. Gunsolus. The objective of this trial was to evaluate soybean weed management systems available to producers in southern Minnesota on several annual weed species. This site had a particularly high infestation of common ragweed. The research site was a Webster clay loam soil containing 6% organic matter with a pH of 7.0 and soil test P and K levels of 26 and 165 ppm, respectively. The previous crop was oats that had been fall chisel plowed. The entire area was field cultivated once in the spring prior to herbicide application. Following preplant incorporated treatments the entire area was field cultivated twice to a depth of 3 to 4 inches to incorporate herbicides and prepare a seedbed. Asgrow '2103' soybeans were planted on May 15, 2002 in 30-inch rows. All treatments were applied with a tractor-mounted sprayer delivering 20 gpa at 40 psi using 8002 flat-fan nozzle tips. Visual estimates of weed control were taken on September 9, 2002. Application dates, environmental conditions, crop and weed stages are listed below.

Date	May 15	May 16	June 17	June 24	July 12
Treatment			Post I	Post II	Post III
Application Stage	PPI	Pre	4-inch weeds	6-inch weeds	Crop canopy
air temp °F	75	65	76	87	72
soil temp (4-inch)	70	58	63	76	72
Relative humidity (%)	40	30	45	46	45
Wind	W 8	N 6	SW 2	W 8	N 5
Soil moisture	dry	Dry	Moist	Moist	Moist
Soybeans					
Stage	-	-	V2	V4	R1
height (inch)	-	-	6	8	14
Giant foxtail					
leaf no.	-	-	3-4	4-6	3-4
height (inch)	-	-	3-4	5-7	3
Common ragweed					
leaf no.	-	-	2-4	6-10	3-4
height (inch)	-	-	3-4	4-6	4
Common lambsquarters					
leaf no.	-	-	4-8	8-12	6
height (inch)	-	-	3-4	4	4
Rainfall after application (inch)					
week 1	0.00	0.00	2.19	1.15	0.00
week 2	0.71	0.74	1.15	0.00	0.56
week 3	2.52	2.49	0.00	0.89	1.24

The dominant weeds in this trial were common ragweed and giant foxtail. Preemergence [sulfentrazone & cloransulam] either tank mixed with [S-metolachlor and metribuzin] or followed by [Fluazifop-P & fenoxaprop] failed to provide adequate common ragweed control. Either flumetsualm or flumioxazin applied preemergence followed by cloransulam plus lactofen plus clethodim controlled common ragweed but resulted in poor common lambsquarters control. (University of Minnesota, Southern Research and Outreach Center, Waseca, MN and Dept of Agronomy and Plant Genetics, University of Minnesota, St Paul).

Table. Herbicide performance in soybean at a common ragweed site at Waseca, MN in 2002 (Hoverstad and Gunsolus).

Treatment <sup>a</sup>	Rate (lb/A or %)	SETFA	AMBEL	CHEAL	Yield Bu/A <sup>b</sup>
-----(% control)-----					
<u>Preplant incorporate 2X/POST I (4-inch weeds)</u>					
Pend/Immx+Acif+NIS+AMS	1.0/0.031+0.1875+0.25%+3.4	94	99	98	52.5
Pend/Immx+Clsm+NIS+AMS	1.0/0.031+0.01+0.25%+3.4	99	96	98	56.1
Pend/[Glyt&imep]+NIS+AMS	1.0/[0.75&0.063]+0.25%+2.6	99	99	99	55.9
<u>Preemergence</u>					
[Suen&clsm]/[S-meto&metr]	[0.25&0.03]/[0.8&0.2]	85	54	79	47.5
<u>Preemergence/ POST I (4-inch weeds)</u>					
Flms/Clsm+Clet+Lact+	0.05/0.016+0.125+0.125+				
NIS+AMS	0.25%+2.5	98	99	30	46.7
[Suen&clsm]/	[0.25&0.03]/				
[Flfp-P&fenx]+COC+AMS	[0.156&0.04]+1%+2.5	99	55	86	50.3
Flmx/Clsm+Lact+Clet+	0.078/0.016+0.125+0.125+				
NIS+AMS	0.25%+2.5	99	99	43	51.6
[S-meto&metr]/	[0.8&0.2]/				
Fome+[Flfp-P&fenx]+COC+AMS	0.235+[0.156&0.04]+1%+2.5	99	99	83	55.8
Suen/ Fome+Qufp-P+	0.21/0.235+0.06+				
COC+AMS	1%+2.5	99	99	81	53.6
<u>Preemergence/ POST I (6-inch weeds)</u>					
Suen/Glyt+Clm+AMS	0.16/0.76+0.015+2.5	99	99	99	53.9
Flms/Glyt2+AMS	0.05/0.75+2.5	99	99	99	57.2
[Suen&clsm]/Glyt2+AMS	[0.13&0.016]/0.75+2.5	99	99	99	54.6
Flmx/Glyt+AMS	0.06/0.75+2.5	99	99	99	55.5
[S-meto&metr]/Glyt3+AMS	[0.8&0.2]/0.75+2.5	99	99	97	53.3
[Foe-5043&metr]/Glyt+AMS	[0.15&0.225]/0.56+2.5	98	96	99	52.6
Suen/Glyt+AMS	0.19/0.76+2.5	99	97	99	55.8
<u>POST I (4-inch weeds)</u>					
Fome+[Flfp-P&fenx]+Thif+COC+AMS	0.23[0.156&0.044]+0.002+1%+2.5	99	99	88	50.4
<u>POST I (4-inch weeds)/POST III(Canopy)</u>					
Glyt+AMS/Glyt+AMS	0.75+2.5 / 0.75+2.5	99	99	99	55.7
<u>POST II (6-inch weeds)</u>					
Glyt <sup>2</sup> +Carf+AMS	0.75+0.004+2.5	98	97	96	57.5
Glyt <sup>2</sup> +Clms+AMS	0.75+0.016+2.5	99	97	98	54.8
[Imep&Glyt]+NIS+AMS	[0.063&0.75]+0.125%+2.5	99	93	99	52.3
Glyt+AMS	0.76+2.5	98	99	99	55.7
<u>Checks</u>					
Weedy	-	0	0	0	14.4
Hand-Weeded	-	99	99	99	58.1
	LSD (0.10)	2	9	9	7.6

<sup>a</sup> Acif = acifluorfen = Ultra Blazer 2L; Fome= fomesafen = Flexstar 1.88L; Suen = sufentrazone = Authority 75DF; Carf = carfentrazone = Aim EW; Clm = clorimuron = Classic 75DF; Glyt = glyphosate = Roundup Ultra Max 3.75L; Glyt<sup>2</sup> = glyphosate = Glyphomax Plus 3L; Glyt<sup>3</sup> = glyphosate = Touchdown IQ; Pend = pendimethalin = Prowl 3.8 H2O; Clsm = cloransulam = FirstRate 84WG; [Glyt&imep] = [glyphosate & imazethapyr] = Extreme 2.17L; [Flfp-P&fenx] = [fluazifop-P & fenoxaprop = Fusion 2.56L; Flms = flumetsulam = Python 80DF; [S-meto&metr] = [S-metolachlor & metribuzin] = Boundary 6.5L; [FOE-5043&metr] = [FOE-5043&metribuzin] = Domain 60 DF; Flmx = flumioxazin = Valor 50DF; [Suen&clsm] = [sulfentrazone & cloransulam] = Guantlet; Immx = imazomox = Raptor 1L; Clet = clethodim = Select 2EC; Lact = lactofen = Phoenix 2L; Qufp-P = quizalofop-P = Assure II 0.88L; Thif = thifensulfuron = Harmony GT 75DF; = COC = crop oil concentrate, Class Additive 17%; NIS = nonionic surfactant, Class Preference; AMS = spray grade ammonium sulfate.

<sup>b</sup> Yield adjusted to 13% moisture.