

Herbicide performance in soybeans at Waseca, MN in 1999. Hoverstad, Thomas R., Jeffrey L. Gansolus and Jodie K Getting. The objective of this trial was to evaluate several new herbicide options and mechanical weed control methods in soybeans for south central Minnesota. The research site was a Webster clay loam soil containing 6.7% organic matter with a pH of 7.1 and soil test P and K levels of 24 and 171 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 '2101' soybeans were planted on May 24, 1999 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. Cultivation was performed on the appropriate treatments on July 1, 1999. Visual estimates of weed control were taken on September 21, 1999. Application dates, environmental conditions, crop and weed stages are listed below

Date	May 24	May 24	June 16	June 21	June 28	July 13
Treatment	PPI	Pre	Post I	Post II	Post III	Post IV
air temp °F	65	75	66	72	65	74
soil temp (4-inch)	50	57	60	64	67	70
Relative humidity (%)	48	20	38	61	63	67
Wind	N 5	N 10	NW 8	SE 7	N	S
Soil moisture	Mist	Mist	Mist	Mist	5	3
Soybeans						
Stage	-	-	V1	V2	V3	R1
height (inch)	-	-	4	5	7	12-16
Giant foxtail						
leaf no.	-	-	1-3	2-3	4	4
height (inch)	-	-	1-3	2-4	4-6	6-8
Common ragweed						
leaf no.	-	-	4	4-6	6	4
height (inch)	-	-	2-3	3-4	4-6	3-4
Common lambsquarters						
leaf no.	-	-	6	8	8	8
height (inch)	-	-	2	3	4	6
Velvetleaf						
leaf no.	-	-	4	5	6	3
height (inch)	-	-	2	3	4	3
Redroot Pigweed						
leaf no.	-	-	4	6	8	6
height (inch)	-	-	1-2	2	4	4
Rainfall after application (inch)						
Week 1	0.34	0.34	0.61	0.20	2.15	1.62
week 2	0.93	0.93	0.30	2.15	0.53	0.92
week 3	2.08	2.08	1.85	0.53	1.47	0.85

Excellent conditions prevailed for both soil applied and postemergence activity of the herbicides evaluated. The only treatments that resulted in reduced yields due to weed competition were trifluralin either tank mixed with NAF-75 or followed by postemergence NAF-75. This was a response to poor giant foxtail control with either of these treatments. Glyphosate and ICI-0224 provided similar weed control and crop responses. (MN Agric. Exp. Sta. Paper No. 991051002, Msc Journ Series, University of MN, St Paul).

Table. Herbicide performance in soybeans at Waseca, MN in 1999 (Hoverstad, Gunsolus and Getting).

Treatment ^a	Rate	Gift	Corw	Vele	Colq	Rrpw	Yield
Preplant incorporate 2X	(lb/A or %)	-----(% control)-----					Bu/A ^b
[Imep&Pend]	[0.063&0.84]	88	61	99	99	99	53.0
Trif+NAF-75	0.75+0.03	78	77	99	99	99	44.3
Preplant incorporate 2X/POST II (4-inch weeds)							
Trif/Imep+COC+28%N	0.75/0.031+1.25%+1.25%	99	99	99	99	99	49.4
Trif/Imep+COC+28%N	0.75/0.063+1.25%+1.25%	99	96	99	99	99	49.0
Trif/[Bent&Acif]+28%N	0.75/[0.75&0.17]+2.5%	86	96	99	99	99	48.1
Trif/Imep+Lact+COC+28%N	0.75/0.047+0.063+0.625%+2.0%	94	99	99	99	99	48.0
Clom ¹ /Imep+COC+28%N	0.75/0.031+1.25%+1.25%	98	99	99	99	99	50.6
Trif/NAF-75+Thif+NIS+28%N	0.75/0.016+0.002+0.125%+2.5%	62	99	99	99	99	41.8
Trif/AC 299,263+COC+28%N	0.75/0.031+1.25%+1.25%	99	99	99	99	99	49.7
Trif/Imep+NAF-75+COC+28%N	0.75/0.031+0.016+1.25%+2.5%	99	99	99	99	99	50.7
Trif/Imep+Fome+NIS+28%N	0.75/0.031+0.176+0.625%+1.25%	90	99	99	99	99	46.1
Preplant incorporate 2X/POST III (4-inch weeds)							
[Imep&Pend]/Glyt+AMS	[0.063&0.84] / 0.56+2.5	99	99	99	99	99	54.7
Trif/Glyt	0.75/0.56	99	99	99	93	99	51.4
Weedy check	-	0	0	0	0	0	12.7
Preplant incorporate 2X/POST II (4-inch weeds)/cultivate (37 DAP)							
Trif/Imep+COC+28%N/	0.75/0.031+1.25%+1.25%	99	99	99	99	99	55.6
Trif/Imep+COC+28%N/	0.75/0.063+1.25%+1.25%	99	99	99	99	99	51.7
Trif/[Bent&Acif]+28%N/	0.75/[0.75&0.17]+2.5%	93	99	99	99	99	50.9
Hand-weeded	-	100	100	100	100	100	52.8
Preemergence/POST II (4-inch weeds)							
SAN 582H/	0.94/	99	99	99	99	99	51.2
Seth+Bent+Acif+28%N	0.2+1+0.16+2%						
Suen/[Clim&Thif]+Qufp+ NIS+28%	0.21/[0.003&0.001]+0.055+ 0.25%+5%	98	99	99	99	99	51.2
Suen/Clim+NAF-75+Qufp+ NIS+28%	.21/.005+.008+.055+ 1%+5%	99	99	99	99	99	52.7
Preemergence/POST III (4-6 inch weeds)							
[CGA 77102&metr]/ Glyt+AMS	[0.79&.19/0.56+2.5	99	97	96	99	99	53.0
Alac/Glyt+AMS	2/0.56+2.5	98	99	96	99	99	53.7
Clom ² /Glyt+AMS	0.75/0.56+2.5	99	99	99	99	99	51.8
Suen/Glyt+AMS	0.14/0.56+2.5	99	99	99	99	99	53.5
USA 1999/Glyt+AMS	0.5/0.56+2.5	99	99	99	99	99	52.6
SAN 582H/Glyt+AMS	0.94/0.56+2.5	99	99	99	99	99	52.6
POST I (3 to 4-inch weeds)/POST IV (4-inch regrowth)							
Glyt+AMS/Glyt+AMS	0.56+2.5/0.56+2.5	99	99	99	99	99	51.1
Glyt+AMS/Glyt+AMS	0.28+2.5/0.47+2.5	99	99	99	99	99	50.6
POST II (4-inch weeds)							
Imep+Glyt+NIS+AMS	0.063+0.56+0.25%+2.5	99	99	99	99	99	51.2
AC 299,263+COC+28%N	0.39+1.25%+1.25%	98	96	99	99	99	53.0
Clet+Lact+NAF-75+COC+AMS	0.125+0.094+0.016+1.25%+2.5	95	98	82	99	99	48.3
Glyt+Clim	0.56+0.005	99	99	99	99	99	52.2
ICI 0224+AMS	1+2.5	98	99	99	96	99	53.1
Glyt+AMS	0.75+2.5	99	99	99	99	99	52.0
Hand-weeded check	-	100	100	100	100	100	52.6
Seth+Bent+Fome+COC+28%N	0.2+1.0+0.18+0.625%+1.25%	95	99	99	99	99	49.2
Imep+COC+28%N	0.063+1.25%+1.25%	98	99	99	99	99	51.9
POST II (4-inch weeds)/cultivate (37 DAP)							
Seth+Bent+Fome+COC+28%N	0.2+1.0+0.18+0.625%+1.25%	98	99	99	99	99	49.7
Imep+COC+28%N	0.063+1.25%+1.25%	99	97	99	99	99	51.0
	LSD (0.10)	6	7	3	3	1	3.5

^a AC 299,263 = Raptor 1L; Bent = Basagran 4L; [Bent&Acif] = Galaxy 3.67E; [CGA 77102&metr] = Turbo Magnum 7.8E; Clim = Classic 25DF; Clom¹ = Command 4E; Clom² = Command 3ME; Fome = Flexstar

1.88L; Suen = Authority 75DF; Glyt = Roundup Ultra 3L; ICIA 0224=Touchdown 5; Imep = Pursuit 2AS; [Imep&Pend] = Pursuit Plus 2.9E; Lact = Cobra 2E; NAF-75 = FirstRate 84WG; Qufp = Assure II 0.8E; SAN-582H = Frontier 6E; Seth = Poast Plus1E; Thif = Pinnacle 25DF; [Thif&Clim] = Synchrony STS 42DF; Trif = Treflan 4E; COC = crop oil concentrate, Class Additive 17%; 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.