

Herbicide performance in soybeans at Waseca, MN in 1997. Hoverstad, Thomas R., and Jeffrey L. Gunsolus. 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 6.9 and soil test P and K levels of 20 and 150 ppm, respectively. The previous crop was oats that had been fall moldboard 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 '2247' soybeans were planted on May 15, 1997 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. Application dates, environmental conditions, crop and weed stages are listed below.

Date	May 15	May 15	June 16
Treatment	PPI	Pre	Post (3 to 4-inch weeds)
air temp °F	51	54	71
soil temp (4-inch)	56	50	68
Relative humidity (%)	39	30	40
Wind	NW 7	NW 10	NW 9
Soil moisture	dry	dry	dry
Soybeans			
stage	--	--	V3
height (inch)	--	--	6
Giant foxtail			
leaf no.	--	--	2-4
height (inch)	--	--	2-5
Common ragweed			
leaf no.	--	--	2-6
height (inch)	--	--	3
Common lambsquarters			
leaf no.	--	--	6-10
height (inch)	--	--	2-4
Velvetleaf			
leaf no.	--	--	2-4
height (inch)	--	--	2-3
Rainfall after application (inch)			
week 1	0.11	0.11	1.30
week 2	2.19	2.19	1.55
week 3	0.14	0.14	0.25

The dominant weed species in this trial were giant foxtail and common ragweed. The only preplant treatment that provided acceptable control of common ragweed was trifluralin + F-6285 + NAF75. Postemergence treatments that provide grass weed control following preplant trifluralin resulted in significantly better grass control and overall performance than those postemergence treatments that have no grass activity following trifluralin.

Table. Herbicide performance in soybean at Waseca, MN in 1997 (Hoverstad and Gunsolus).

Treatment ^a	Rate (lb/A or %)	Gift	Corw	VeLe	Colq	Rrpw	Yield ^b (bu/A)
<u>(Preplant incorporate 2X)</u>							
[Imep&Pend]	[0.063&0.84]	64	25	74	74	74	37.8
Trif+NAF-75	0.75+0.04	60	71	99	99	99	35.3
Trif+F-6285+NAF-75	0.75+0.3+0.04	70	90	99	99	99	40.0
Weedy check	.	0	0	0	0	0	11.5
Hand-weeded	.	100	100	100	100	100	52.3
Clom1+Metr	0.75+0.375	38	25	71	74	74	30.9
<u>Preplant incorporate 2X/cultivate (41 DAP)</u>							
Trif/cultivate	0.75	85	0	26	99	99	22.8
<u>Preplant incorporate 2X/POST (3 to 4-inch weeds)/cultivate (41 DAP)90</u>							
Trif/Imep+COC+28%N/cultivate	0.75/0.031+1.25%+1.25%	99	90	97	99	99	56.2
Trif/Imep+COC+28%N/cultivate	0.75/0.047+1.25%+1.25%	98	91	96	99	99	55.5
Trif/Imep+COC+28%N/cultivate	0.75/0.063+1.25%+1.25%	99	97	99	99	99	55.6
Trif/[Bent&Acif]+28%N/cultivate	0.75/[0.75&0.17]+2.5%	81	82	99	96	99	48.9
Hand-weeded	.	100	100	100	100	100	54.8
<u>Preplant incorporate 2X/POST (3 to 4-inch weeds)</u>							
Trif	0.75	65	0	31	74	74	16.3
Trif/Imep+COC+28%N	0.75/0.031+1.25%+1.25%	96	78	80	99	99	52.4
Trif/Imep+COC+28%N	0.75/0.047+1.25%+1.25%	94	71	86	99	99	51.2
Trif/Imep+COC+28%N	0.75/0.063+1.25%+1.25%	99	96	94	92	99	53.7
Trif/[Bent&Acif]+28%N	0.75/[0.75&0.17]+2.5%	70	86	99	99	99	40.9
Trif/Seth+[Bent&Acif] +COC+28%N	0.75/0.28+[0.75&0.17] +0.625%+1.25%	96	92	96	99	99	53.3
Trif/[flumiclorac&Lact] +COC+28%N	0.75/[0.027&0.094] +0.625%+2.0%	54	93	81	99	99	25.0
Trif/Imep+Lact +COC+28%N	0.75/0.047+0.063 +0.625%+2.0%	97	92	94	94	99	53.4
Trif/Imep+Acif +NIS+28%N	0.75/0.047+0.22 +0.25%+1.25%	93	96	83	99	99	54.2
Clom1/Imep+COC+28%N	0.75/0.031+1.25%+1.25%	95	83	93	90	99	54.5
Trif/AC 299,263 +COC+28%N	0.75/0.04 +1.25%+1.25%	98	88	99	99	99	54.3
Trif/Imep+Fome +NIS+28%N	0.75/0.047+0.176 +0.625%+1.25%	97	99	99	99	99	55.3
Trif/NAF-75+Thif +NIS+28%N	0.75/0.016+0.002 +0.125%+2.5%	60	99	93	99	99	41.3
Weedy check	.	0	0	0	0	0	7.7
<u>Preemergence</u>							
Clom2+F-6285+NAF-75	0.75+0.3+0.04	80	99	99	99	99	49.5
Clom2+V-53482	0.75+0.094	5	18	20	50	50	19.2
<u>Preemergence/POST (3 to 4-inch weeds)</u>							
CGA 77102/CGA 277476 +NIS+28%N	1.91/0.07 +0.25%+1.25%	66	99	99	99	99	43.7
CGA 77102/CGA 277476 +CGA 248757+NIS+28%N	1.91/0.07 +0.004+0.25%+1.25%	66	87	99	99	99	43.6
F-6285+NAF-75/Seth	0.3+0.04/0.19	99	88	89	99	99	55.3
Clom2/Imep+COC+28%N	0.75/0.031+1.25%+1.25%	97	89	96	92	99	50.0
SAN-582H/[Bent&Acif]+28%N	1.5/[0.75&0.17]+2.5%	55	88	99	89	99	34.4
SAN-582H/Seth+[Bent&Acif]+COC+28%N	1.5/0.28+[0.75&0.17] +0.625%+1.25%	95	94	99	96	99	54.6
<u>POST (3 to 4-inch weeds)</u>							
Seth+[Bent&Acif] +COC+28%N	0.28+[0.75&0.17] +0.625%+2.5%	91	87	98	87	99	52.0
Clet+Lact +Bent+COC+28%N	0.094+0.094 +0.5+1.25%+2.5%	93	94	96	38	99	53.2
Imep+NIS+28%N	0.063+0.25%+1.25%	92	82	80	91	99	49.4
Imep+Thif+NIS+28%N	0.063+0.002+0.25%+1.25%	92	91	99	99	99	49.2
AC 299,263+MSO+28%N	0.04+0.94%+1.25%	97	85	99	99	99	53.2
Weedy check	.	0	0	0	0	0	10.1
	LSD (0.10)	16	17	21	21	19	6.2

^a AC 299,263 = Raptor 1L; Acif = Status 2S; Bent = Basagran 4L; [Bent&Acif] = Galaxy 3.67E; CGA 248757 = Action 4.75WP; CGA 277476 = Expert 75WG; CGA 77102 = Dual II Magnum 7.64E; Clet = Select 2E; Clom1 = Command 4E; Clom2 = Command 3ME; [flumiclorac&Lact] = Stellar 3.1L; Fome = Flexstar 1.88L; F-6285 = Authority 75DF; Imep = Pursuit 70WDG; [Imep&Pend] = Pursuit Plus 2.9E; Lact = Cobra 2E; Metr = Sencor 75DF; NAF-75 = FirstRate 84WG; SAN-582H = Frontier 6E; Seth = Poast 1.5E; Thif = Pinnacle 25DF; Trif = Treflan 4E; MSO = methylated seed oil, Class Destiny MSO; COC = crop oil concentrate, Class Additive 17%; NIS = nonionic surfactant, Class Preference; 28%N = an aqueous solution of urea and ammonium nitrate.

^b Yield adjusted to 13% moisture.