

Herbicide performance in soybeans at Lamberton, MN in 1997. Getting, Jodie K. and Jeffrey L. Gunsolus. The objective of this study was to evaluate herbicide combinations for annual grass and annual broadleaf control in soybeans. This study was conducted on a Normania loam soil containing 4.4 % organic matter, pH 5.8 and soil test P and K levels of 88 and 376 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 not cropped in 1996 and weeds were allowed to go to seed. The site was fall moldboard plowed. On May 9, 1997 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. On May 10, 1997 'Parker' 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. Cultivation treatments were cultivated on June 20, 1997. Application dates, environmental conditions, plant sizes and rainfall data are listed below:

Date	May 9	May 10	June 10
Treatment	PPI	PRE	POST
Temperature (F)			
air	60	62	83
soil (4 inch)	58	52	70
Relative humidity (%)	35	40	27
Wind (mph)	NW 5-8	S 8	calm
Sky	sunny	sunny	clear
Soil moisture	dry	dry	dry
Soybean			
leaf no.	--	--	1st trif.
height (inch)	--	--	4
Yellow foxtail			
leaf no.	--	--	2 to 4
height (inch)	--	--	1 to 3
no./ft ²	--	--	34
Common lambsquarters			
leaf no.	--	--	3 to 5
height (inch)	--	--	1 to 3
no./ft ²	--	--	19
Pennsylvania smartweed			
leaf no.	--	--	2 to 3
height (inch)	--	--	2 to 3
no./ft ²	--	--	2
Rainfall after application (inch)			
1 week	0.02	0.02	0.0
2 week	0.04	0.29	1.34
3 week	0.54	0.29	3.31

None of the treatments caused visible crop injury. Clomazone applied PPI had early season yellow foxtail control of 95 and 97%, however clomazone applied PRE had 60 to 71% control. This was the result of receiving only 0.29 inches of rainfall during the first two weeks following planting. By September, clomazone applied PRE with either F-6285+NAF-75 or V-53482 gave 22 and 30% yellow foxtail control, respectively. Trifluralin applied alone PPI resulted in 91% yellow foxtail and 89% common lambsquarters control. Postemergence treatments without a soil applied treatment had 25 to 86% control of common lambsquarters and 81 to 90% yellow foxtail control. Trifluralin followed by imazethapyr or [bentazon & acifluorfen] followed by cultivation had excellent season-long grass and broadleaf control.

Table. Herbicide performance in soybeans at Lamberton, MN in 1997 (Getting and Gunsolus).

Treatment ^a	Rate	Yeff			Cola			Pesw			Yield (bu/A) ^b
		6/12	6/30	9/4	6/12	6/30	9/4	6/12	6/30	9/4	
Preplant incorporate 2X [Imep&Pend]	(lb/A or %) [0.063&0.84]	96	91	88	95	90	93	96	93	86	35.3
Trif+NAF-75	0.75+0.04	96	94	91	98	93	95	100	95	89	38.9
Trif+F-6285+NAF-75	0.75+0.3+0.04	97	93	90	97	96	93	98	93	92	35.4
Weedy check	-	0	0	0	0	0	0	0	0	0	9.9
Hand-weeded	-	97	100	100	95	100	100	94	100	100	44.1
Clom ¹ +Metr	0.75+0.375	97	95	93	97	92	95	100	95	96	40.1
<u>Preplant incorporate 2X/cultivate (41 DAP)</u>											
Trif/cultivate	0.75	97	95	95	95	94	93	82	84	84	40.5
<u>Preplant incorporate 2X/POST (3 to 4-inch weeds)/cultivate (41 DAP)</u>											
Trif/Imep+COC+28%N/ cultivate	0.75/0.031+1.25%+1.25%	98	98	99	97	98	100	98	100	100	43.5
Trif/Imep+COC+28%N/ cultivate	0.75/0.047+1.25%+1.25%	97	98	100	95	99	100	96	100	100	39.9
Trif/Imep+COC+28%N/ cultivate	0.75/0.063+1.25%+1.25%	97	98	100	96	99	100	86	100	100	43.9
Trif/[Bent&Acif]+28%N/ cultivate	0.75/[0.75&0.17]+2.5%	97	97	97	96	100	100	100	100	100	44.0
Hand-weeded	-	97	99	100	96	100	100	97	100	100	45.6
<u>Preplant incorporate 2X/POST (3 to 4-inch weeds)</u>											
Trif	0.75	97	94	91	96	91	89	97	93	90	36.5
Trif/Imep+COC+28%N	0.75/0.031+1.25%+1.25%	96	97	97	95	92	91	96	97	100	40.5
Trif/Imep+COC+28%N	0.75/0.047+1.25%+1.25%	97	97	98	97	95	97	98	100	98	38.3
Trif/Imep+COC+28%N	0.75/0.063+1.25%+1.25%	97	98	99	96	98	98	98	99	100	39.4
Trif/[Bent&Acif]+28%N	0.75/[0.75&0.17]+2.5%	98	95	92	97	97	93	98	99	99	39.5
Trif/Seth+[Bent&Acif] +COC+28%N	0.75/0.28+[0.75&0.17] +0.625%+1.25%	98	98	97	97	96	89	98	99	99	41.6
Trif/[flumiclorac&Lact] +COC+28%N	0.75/[0.027&0.094] +0.625%+2.0%	98	95	90	98	96	94	93	83	73	36.6
Trif/Imep+Lact +COC+28%N	0.75/0.047+0.063 +0.625%+2.0%	97	97	98	95	93	93	93	97	98	40.6
Trif/Imep+Acif +NIS+28%N	0.75/0.047+0.22 +0.25%+1.25%	98	96	98	97	95	96	96	98	100	41.8
Clom ¹ /Imep+COC+28%N	0.75/0.031+1.25%+1.25%	95	94	96	84	81	78	95	98	99	39.1
Trif/AC 299,263 +COC+28%N	0.75/0.04 +1.25%+1.25%	97	98	99	96	98	100	95	99	100	40.1
Trif/Imep+Fome +NIS+28%N	0.75/0.047+0.176 +0.625%+1.25%	98	97	98	96	95	99	98	100	100	39.8
Trif/NAF-75+Thif +NIS+28%N	0.75/0.016+0.002 +0.125%+2.5%	97	94	93	94	95	95	98	99	98	35.0
Weedy check	-	0	0	0	0	0	0	0	0	0	7.6
<u>Preemergence</u>											
Clom ² +F-6285+NAF-75	0.75+0.3+0.04	60	38	22	68	59	50	81	89	87	15.3
Clom ² +V-53482	0.75+0.094	68	54	30	63	53	45	83	85	87	16.9
<u>Preemergence/POST (3 to 4-inch weeds)</u>											
CGA 77102/CGA 277476 +NIS+28%N	1.91/0.07 +0.25%+1.25%	81	69	40	38	53	55	53	86	93	20.4
CGA 77102/CGA 277476 +CGA 248757+NIS+28%N	1.91/0.07 +0.004+0.25%+1.25%	79	66	30	61	64	68	28	86	94	15.4
F-6285+NAF-75/Seth	0.3+0.04/0.19	40	96	94	35	25	23	10	40	45	29.0
Clom ² /Imep+COC+28%N	0.75/0.031+1.25%+1.25%	71	83	85	71	75	51	83	91	94	34.8
SAN-582H/[Bent&Acif] +28%N	1.5/[0.75&0.17] +2.5%	66	53	33	33	55	65	48	87	96	14.6
SAN-582H/Seth +[Bent&Acif]+COC+28%N	1.5/0.28+[0.75&0.17] +0.625%+1.25%	68	93	81	59	68	40	69	93	95	30.0
<u>POST (3 to 4-inch weeds)</u>											
Seth+[Bent&Acif] +COC+28%N	0.28+[0.75&0.17] +0.625%+2.5%	-	94	86	-	70	40	-	97	95	34.3
Clet+Lact +Bent+COC+28%N	0.094+0.094 +0.5+1.25%+2.5%	-	97	90	-	45	25	-	97	98	28.7
Imep+NIS+28%N	0.063+0.25%+1.25%	-	91	89	-	56	35	-	94	97	30.7
Imep+Thif+NIS+28%N	0.063+0.002+0.25%+1.25%	-	86	81	-	84	68	-	97	99	33.6
AC 299,263+MSO+28%N	0.04+0.94%+1.25%	-	94	90	-	91	86	-	97	93	40.0
Weedy check	-	0	0	0	0	0	0	0	0	0	9.1
	LSD (0.10)	6	5	7	9	12	12	14	9	11	4.2

^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.