

Effect of adjuvants tank-mixed with imazamox and acifluorfen on weed control in soybeans at Lamberton, MN in 2001. Getting, Jodie K., and Bruce D. Potter. The objective of this study was to evaluate adjuvants tank-mixed with imazamox and acifluorfen for annual grass and annual broadleaf weed control in glyphosate-resistant 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 422 lb/A, respectively. A randomized complete block design with four replications and a plot size of 10 by 30 ft was used. The site was planted to oats in 2000 and was fall chiseled. On May 29, 2001 Pioneer '92BO5' glyphosate-resistant 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	June 21
Treatment	POST I
Temperature (F)	
air	55
soil (4 inch)	66
Relative humidity (%)	88
Wind (mph)	W 0-5
Sky	clear
Soil moisture	dry
Soybean	
leaf no.	unifoliate
height (inch)	4
Yellow foxtail	
leaf no.	2 to 4
height (inch)	2 to 4
no./ft <sup>2</sup>	31
Common lambsquarters	
leaf no.	2 to 4
height (inch)	2 to 4
no./ft <sup>2</sup>	4
Redroot pigweed	
leaf no.	2 to 4
height (inch)	1 to 3
no./ft <sup>2</sup>	5
Rainfall after application (inch)	
1 week	0.00
2 week	0.50
3 week	0.00

Imazamox treatments without acifluorfen controlled 88 to 94% of yellow foxtail on September 11. The addition of acifluorfen to imazamox treatments reduced yellow foxtail control, regardless of adjuvant. Control of yellow foxtail was 80 % or less with Hi-Per Oil and Impressive DB providing only 70% control. All imazamox + acifluorfen treatments controlled 88 to 93% of common lambsquarters and redroot pigweed. Imazamox with Impressive DB controlled only 74% of common lambsquarters. Imazamox + AMS+ MSO provided 80% control. All other adjuvants with imazamox provided 85 to 86% common lambsquarters control. Imazamox with AMS + NIS or AMS + COC provided 79 and 80 % redroot pigweed control respectively. All other adjuvants provided significantly less control and AMS + MSO and Basic Blend reducing redroot pigweed control below 50%. All treatments containing imazamox + acifluorfen had greater crop injury than those without acifluorfen. The AMS + NIS and Impressive DB adjuvants with imazamox + acifluorfen caused less injury than other adjuvants. (Southwest Research and Outreach Center, University of Minnesota, Lamberton).

Table. Effect of adjuvants tank-mixed with imazamox and acifluorfen on weed control in soybeans at Lamberton, MN in 2001 (Getting and Potter).

Treatment <sup>a</sup>	Rate (lb/A or %)	Injury		SETLU			CHEAL			AMARE			Yield (bu/A) <sup>b</sup>
		6/25	7/2	7/2	7/11	9/11	7/2	7/11	9/11	7/2	7/11	9/11	
		(%)		-----(% control)-----									
<u>POST (2 to 4-inch weeds)</u>													
Immx+AMS+NIS	0.023+2.5+0.25%	1	1	83	83	88	75	88	86	84	84	79	41.6
Immx+Basic Blend	0.023+1.0%	1	0	89	93	94	88	90	84	68	65	48	38.8
Immx+AMS+COC	0.023+2.5+1.0%	5	2	88	85	90	85	88	86	90	89	80	41.6
Immx+AMS+Hi-Per Oil	0.023+2.5+0.5%	3	1	89	90	90	84	90	85	81	74	61	41.2
Immx+AMS+MSO	0.023+2.5+1.0%	1	0	89	90	93	81	85	80	79	73	49	40.4
Immx+Impressive DB	0.023+2.25	0	0	75	78	88	74	81	74	78	71	56	34.2
Immx+Acif+AMS+NIS	0.023+0.19+2.5+0.25%	13	3	70	59	73	84	84	89	93	93	91	33.3
Immx+Acif+Basic Blend	0.023+0.19+1.0%	18	6	80	70	76	90	93	93	91	95	93	36.7
Immx+Acif+AMS+COC	0.023+0.19+2.5+1.0%	20	9	84	74	80	88	88	89	95	91	88	37.5
Immx+Acif+AMS+Hi-Per Oil	0.023+0.19+2.5+0.5%	20	7	77	65	70	90	92	90	95	92	88	25.1
Immx+Acif+AMS+MSO	0.023+0.19+2.5+1.0%	19	9	85	76	80	93	90	93	95	94	92	37.9
Immx+Acif+Impressive DB	0.023+0.19+2.25	10	4	66	61	70	80	86	88	91	93	90	33.4
Weedy Check	-	0	0	0	0	0	0	0	0	0	0	0	14.7
Weed-free check	-	1	0	100	100	100	100	100	100	100	100	100	52.4
	LSD (0.10)	3.7	2.3	5.0	6.4	7.1	7.0	5.0	5.4	8.7	8.8	14.4	5.69

<sup>a</sup> Acif = Ultra Blazer 2L; Immx = Raptor 1L.; COC = 83% paraffinic oil + 17% emulsifier; Basic Blend = surfactant blend + ammoniated salts; Hi-Per Oil = 60% paraffinic oil + 40% emulsifier; Impressive DB = dry blended ammonium sulfate + NIS; NIS = 90% non-ionic surfactant; AMS = ammonium sulfate; MSO = methylated seed oil.

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