

Weed control and crop tolerance to lactofen and thifensulfuron in soybeans at Lamberton, MN in 2002. Getting, Jodie K. and Bruce D. Potter. The objective of this study was to evaluate the effect of two rates of thifensulfuron tank-mixed with lactofen and spray additives on crop tolerance and weed control in soybeans. This study was conducted on a Normania loam soil containing 4.2% organic matter, pH 6.5 and soil test P and K levels of 60 and 316 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 2001 and was fall chiseled. On May 17, 2002, Pioneer '92BO5' glyphosate-resistant soybeans were planted in 30-inch rows at a seeding rate of 160,000 seeds/A. The entire area was treated with clethodim at 0.125 lb/A for annual grass control. 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 17
Treatment	POST
Temperature (F)	
air	65
soil (4 inch)	68
Relative humidity (%)	65
Wind (mph)	calm
Sky	cloudy
Soil moisture	dry
Soybean	
leaf no.	V3
height (inch)	6
Common lambsquarters	
leaf no.	4 to 6
height (inch)	2 to 4
no./ft <sup>2</sup>	2
Redroot pigweed	
leaf no.	3 to 5
height (inch)	2 to 4
no./ft <sup>2</sup>	2
Rainfall after application (inch)	
1 week	1.18
2 week	0.03
3 week	0.18

At 7 DAT, lactofen + NIS either lone or tank-mixed with thifensulfuron resulted in 8 to 11% visible crop injury. Lactofen + thifensulfuron + NIS + AMS had 13% crop injury compared to 8% for the same treatment without AMS. Fomesafen + thifensulfuron + NIS + AMS, acifluorfen + NIS + AMS, and thifensulfuron + NIS resulted in 4, 6, and 1% visible crop injury, respectively. Fomesafen + NIS + AMS applied either alone or with thifensulfuron resulted in 97% common lambsquarters control. Lactofen + NIS gave 88% control and lactofen + thifensulfuron + NIS gave 91 to 95% control. All treatments provided excellent redroot pigweed control. In September, lactofen + NIS and acifluorfen + NIS + AMS gave 56 and 61% common lambsquarters control, respectively. All other treatments gave 88% or greater control. All treatments had excellent redroot pigweed control. (Southwest Research and Outreach Center, University of Minnesota, Lamberton).

Table. Weed control and crop tolerance to lactofen and thifensulfuron in soybeans at Lamberton, MN in 2002 (Getting and Potter).

Treatment <sup>a</sup>	Rate	Injury 6/24	CHEAL			AMARE			Yield (bu/A) <sup>b</sup>
			6/24	7/1	9/11	6/24	7/1	9/11	
POST (2 to 4-inch weeds)	(lb/A or %)	(%)	-----(% control)-----						
Lactofen+Thif+NIS	0.125+0.004+0.125%	9	91	90	91	100	100	100	47.5
Lactofen+Thif+NIS	0.125+0.004+0.25%	11	94	94	92	100	100	100	47.0
Lactofen+Thif+NIS+AMS	0.125+0.004+0.125%+2.0	11	89	93	94	100	100	100	46.4
Lactofen+Thif+NIS	0.125+0.002+0.125%	8	93	93	93	100	100	100	47.6
Lactofen+Thif+NIS	0.125+0.002+0.25%	10	95	95	93	100	100	100	48.0
Lactofen+Thif+NIS+AMS	0.125+0.002+0.125%+2.0	13	91	94	93	100	100	100	46.4
Lactofen+Thif+Clms+NIS	0.125+0.002+0.016+0.25%	10	91	88	88	100	100	100	47.9
Thif+NIS	0.004+0.25%	1	88	91	89	98	96	98	46.9
Fomesafen+Thif+NIS+AMS	0.18+0.004+0.125%+2.0	4	97	97	97	100	100	100	46.9
Fomesafen+NIS+AMS	0.18+0.125%+2.0	4	97	93	89	100	100	100	48.5
Lactofen+NIS	0.125+0.125%	10	88	81	56	100	100	100	45.4
Acifluorfen+NIS+AMS	0.19+0.125%+2.0	6	90	81	61	100	99	100	47.7
Weedy Check	-	0	0	0	0	0	0	0	43.0
Weed-free check		0	100	100	100	100	100	100	49.0
	LSD (0.10)	2.5	6.1	6.4	11.7	0.8	2.5	1.0	ns

<sup>a</sup> Acifluorfen = Ultra Blazer 2L; Clsm or cloransulam = FirstRate 84WG; Fome or fomesafen = Flexstar 1.88L; Lact or lactofen = Phoenix 2EC; Thif or thifensulfuron = Harmony GT 75DF; COC = crop oil concentrate; NIS = nonionic surfactant; AMS = spray grade ammonium sulfate.

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