Weed control with clethodim and lactofen 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 clethodim tank-mixed with lactofen and spray additives on crop tolerance and weed control in soybeans. Two formulations of lactofen were used in this trial. The formulations were Phoenix (lactofen[1]) and Cobra (lactofen[2]). 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. 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 14
Treatment	POST
Temperature (F)	
air	55
soil (4 inch)	62
Relative humidity (%)	95
Wind (mph)	N 5-8
Sky	clear
Soil moisture	dry
Soybean	
leaf no.	V3
height (inch)	6
Yellow foxtail	
leaf no.	2 to 5
height (inch)	4 to 6
no./ft^2	39
Common lambsquarters	
leaf no.	2 to 6
height (inch)	2 to 4
no./ft^2	2
Redroot pigweed	
leaf no.	3 to 6
height (inch)	2 to 4
no./ft^2	2
Rainfall after application (inch)	
1 week	0.28
2 week	0.98
3 week	0.18

On June 17, lactofen[2] + clethodim + COC + AMS had 31% visible crop injury. Lactofen[1] + clethodim + NIS had 20 to 23% injury and lactofen[1] + clethodim + NIS + AMS had 19 to 24% injury. Clethodim + COC + AMS had 9 to 11% injury. On June 24, lactofen[2] + clethodim + COC + AMS had 9% visible crop injury. All other herbicide treatments had 6% or less visible crop injury. In September, clethodim + COC + AMS had 96 to 97% yellow foxtail control. All other herbicide treatments had 89 to 93% control. Lactofen[2] + clethodim + COC + AMS had 60% common lambsquarters control. Lactofen[1] + clethodim + NIS had 25 to 50% control and lactofen[1] + clethodim + NIS + AMS had 45 to 55% control. Lactofen[1] + clethodim + cloransulam + NIS + AMS had 59% control. All herbicide treatments had 96% or greater redroot pigweed control. (Southwest Research and Outreach Center, University of Minnesota, Lamberton).

Table. Weed control with clethodim and lactofen in soybeans at Lamberton, MN in 2002 (Getting and Potter).

		Injury		SETLU			CHEAL			AMARE			
Treatment[a]	Rate	6/17	6/24	6/24	7/1	9/11	6/24	7/1	9/11	6/24	7/1	9/11	Yield
	(lb/A or %)	-----(%)-----		----------(% control)----------									(bu/A)[b]
POST (6-inch weeds)													
Lactofen[1]+clethodim+NIS	0.156+0.094+0.125%	20	5	91	90	89	81	55	25	97	99	100	45.3
Lactofen[1]+clethodim+NIS	0.156+0.125+0.125%	23	5	90	90	92	88	71	50	99	98	98	47.4
Lactofen[1]+clethodim+NIS+AMS	0.156+0.094+0.125%+2.0	24	6	93	91	91	88	75	45	99	98	98	46.6
Lactofen[1]+clethodim+NIS+AMS	0.156+0.125+0.125%+2.0	19	5	90	91	93	85	73	55	99	98	96	47.4
Lactofen[1]+clethodim+cloransulam +NIS+AMS	0.156+0.125+0.016 +0.125%+2.0	20	5	90	92	93	83	73	59	100	99	99	49.3
Lactofen[2]+clethodim+COC+AMS	0.125+0.094+0.625%+2.5	31	9	98	95	92	90	78	60	99	99	96	48.9
Clethodim+COC+AMS	0.094+0.625%+2.5	11	2	94	94	97	0	0	0	0	0	0	50.2
Clethodim+COC+AMS	0.125+0.625%+2.5	9	2	95	96	96	0	0	0	0	0	0	47.1
Weedy Check	-	0	0	0	0	0	0	0	0	0	0	0	13.3
Weed-free check		0	0	100	100	100	100	100	100	100	100	100	51.2
	LSD (0.10)	5.1	1.8	2.2	2.4	3.2	5.6	11.4	19.3	1.0	1.1	2.0	3.51

[a] Clethodim= Select 2L; cloransulam = FirstRate 84WG; lactofen[1] = Phoenix 2EC; lactofen[2] = Cobra 2EC; COC = crop oil concentrate; NIS = nonionic surfactant; AMS = spray grade ammonium sulfate.

[b] Yield adjusted to 13% moisture.