Spray nozzle and adjuvant effects on lactofen efficacy. Ramsdale, Brad K., Sam J. Lockhart, and Calvin G. Messersmith. The experiment was conducted to examine the influence of drift-reducing nozzles and adjuvants on lactofen efficacy. Bioassay species were planted as 6-ft-wide strips side-by-side. Plots 12 ft wide were laid out perpendicular to the strips so that each plot contained all three assay species. Treatments were applied at 10 gpa with an all-terrain vehicle equipped with a four-nozzle boom (20-inch spacing) offset to one side. Experimental design was a randomized complete block with four replicates. Weed control was evaluated visually where 0 equaled no visible injury and 100 equaled complete death of assay species.

Experiment location	Fargo	Casselton
Planting date	May 22	May 24
Treatment date	June 18	June 20
Air temperature (F)	75	72
Relative humidity (%)	65	40
Wind (mph)	12-15	5
Sky (% clouds)	80	40
Flax		
variety	'Neche'	'Neche'
height (inch)	5-7	6-8
Sunflower		
variety	F_2 oilseed	F_2 oilseed
height (inch)	5-7	6-8
Tame buckwheat		
variety	'Mancan'	'Mancan'
height (inch)	5-7	8-10

The Extended Range nozzle at 40 psi represented a standard flat-fan nozzle application. Overall, efficacy of lactofen at 0.13 lb/A was generally similar regardless of nozzle type or adjuvant. Lactofen applied with drift-reducing nozzles was occasionally less, but also occasionally was more effective, than with the standard flat-fan nozzle. Lactofen efficacy was generally greater with petroleum oil at 1.5 pt/A than the nonionic surfactant at 0.25% v/v. (This material is based upon work supported by the Cooperative State Research, Education, and Extension Service, U.S. Department of Agriculture, under Agreement No. 00-34361-9038. Dept. of Plant Sciences, North Dakota State University, Fargo)

Table 1. Spray nozzle and adjuvant effects on lactofen efficacy, Fargo, ND. (Ramsdale, Lockhart, and Messersmith)

					June 27			July 8
Treatment[ab]	Rate	Nozzle[c]	Pressure	Speed	Sunflower	Tame buckwheat	Flax	Sunflower
	(lb/A)		(psi)	(mph)	(%)	(%)	(%)	(%)
Lactofen + PO	0.13 + 1.5 pt	XR 11002	40	6	87	99	99	71
Lactofen + PO	0.13 + 1.5 pt	TT 11002	20	4.2	83	99	99	61
Lactofen + PO	0.13 + 1.5 pt	AI 11002	60	7.1	78	99	99	59
Lactofen + PO	0.13 + 1%	XR 11002	40	6	90	99	99	69
Lactofen + PO	0.13 + 1%	TT 11002	20	4.2	75	99	99	58
Lactofen + PO	0.13 + 1%	AI 11002	60	7.1	86	99	99	65
Lactofen + NIS	0.13 + 0.25%	XR 11002	40	6	76	99	99	54
Lactofen + NIS	0.13 + 0.25%	TT 11002	20	4.2	80	99	99	55
Lactofen + NIS	0.13 + 0.25%	AI 11002	60	7.1	74	99	99	54
LSD (5%)					7	NS	NS	8

[a] PO = Herbimax petroleum oil concentrate; NIS = Activator 90 nonionic surfactant.
[b] All treatments were applied at 10 gpa.
[c] XR = Extended Range; TT = Turbo TeeJet; AI = AI TeeJet.

Table 2. Spray nozzle and adjuvant effects on lactofen efficacy, Casselton, ND. (Ramsdale, Lockhart, and Messersmith)

					July 1			July 9
Treatment[ab]	Rate	Nozzle[c]	Pressure	Speed	Sunflower	Tame buckwheat	Flax	Sunflower
	(lb/A)		(psi)	(mph)	(%)	(%)	(%)	(%)
Lactofen + PO	0.13 + 1.5 pt	XR 11002	40	6	65	98	99	36
Lactofen + PO	0.13 + 1.5 pt	TT 11002	20	4.2	64	98	99	38
Lactofen + PO	0.13 + 1.5 pt	AI 11002	60	7.1	68	94	98	46
Lactofen + PO	0.13 + 1.5 pt	TDXL-110-02	60	7.1	81	99	99	59
Lactofen + PO	0.13 + 1%	XR 11002	40	6	65	98	99	38
Lactofen + PO	0.13 + 1%	TT 11002	20	4.2	61	96	99	38
Lactofen + PO	0.13 + 1%	AI 11002	60	7.1	64	92	99	40
Lactofen + PO	0.13 + 1%	TDXL-110-02	60	7.1	72	99	99	49
Lactofen + NIS	0.13 + 0.25%	XR 11002	40	6	58	93	99	30
Lactofen + NIS	0.13 + 0.25%	TT 11002	20	4.2	49	84	99	26
Lactofen + NIS	0.13 + 0.25%	AI 11002	60	7.1	59	90	99	33
Lactofen + NIS	0.13 + 0.25%	TDXL-110-02	60	7.1	65	94	99	41
LSD (5%)					11	6	NS	10

[a] PO = Herbimax petroleum oil concentrate; NIS = Activator 90 nonionic surfactant.
[b] All treatments were applied at 10 gpa.
[c] XR = Extended Range; TT = Turbo TeeJet; AI = AI TeeJet; TDXL = TurboDrop XL.