

Fomesafen: spray volume and adjuvants. Ramsdale, Brad K. and Calvin G. Messersmith. The experiment was conducted to examine the influence of spray volume and adjuvants on fomesafen (Reflex®) efficacy. Oilseed sunflower, 'Neche' flax, and 'Mancan' tame buckwheat were planted as 6-ft-wide strips side-by-side on May 25, 2003, near Fargo, ND. Plots 12 ft wide were laid out perpendicular to the strips so that each plot contained all three assay species. Treatments were applied on July 2 with an all-terrain vehicle equipped with a four-nozzle boom (20-inch spacing) offset to one side. All treatments were applied at 20 psi. Spray volumes at 2.5 and 5 gpa were applied with Turbo TeeJet 11001 nozzles and at 10 and 20 gpa were applied with Turbo TeeJet 11004 nozzles, and speed was adjusted to apply the correct volume with each nozzle. Conditions at treatment were 78 F, 70% RH, wind 8-10 mph, and sky 80% clouds. Sunflower was 8- to 12-inch, flax 8- to 12-inch, and buckwheat 8- to 15-inch. 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 control of assay species.

The Reflex® formulation of fomesafen does not include an adjuvant. Overall, fomesafen (Reflex®) was most effective when applied with Scoil methylated seed oil adjuvant at 1.5 pt/A. Fomesafen plus Scoil provided similar broadleaf control whether applied in 2.5, 5, 10, or 20 gpa spray volume. Broadleaf control by fomesafen plus Herbimax crop oil concentrate at 1.5 pt/A also was generally not influenced by changes in spray volume. Fomesafen plus Activator 90 nonionic surfactant at 0.25% v/v was most effective when applied in 20 gpa spray volume. Likewise, fomesafen plus Quad 7 basic blend adjuvant at 1% v/v was generally most effective in 20 gpa spray volume, providing broadleaf control that was similar to fomesafen plus Scoil. These data support previous experiments where efficacy increase as spray volume increase when adjuvants were applied as a percentage of spray volume, but efficacy was similar for all spray volumes when adjuvants were applied on a per acre basis. (Dept. of Plant Sciences, North Dakota State University, Fargo)

Table. Fomesafen: spray volume and adjuvants. (Ramsdale and Messersmith)

Treatment ^a	Rate	Volume ^b	July 16			July 23		
			Sunflower	Flax	Tame buckwheat	Sunflower	Flax	Tame buckwheat
	(lb/A)	(gpa)	(%)	(%)	(%)	(%)	(%)	(%)
Fomesafen + Scoil	0.09 + 1.5 pt	2.5	43	68	45	35	59	36
Fomesafen + Quad 7	0.09 + 1%	2.5	26	53	33	16	36	25
Fomesafen + Activator 90	0.09 + 0.25%	2.5	18	23	24	14	18	23
Fomesafen + Herbimax	0.09 + 1.5 pt	2.5	25	51	39	19	39	30
Fomesafen + Scoil	0.09 + 1.5 pt	5	39	74	61	33	68	51
Fomesafen + Quad 7	0.09 + 1%	5	35	65	39	29	59	33
Fomesafen + Activator 90	0.09 + 0.25%	5	25	34	29	21	26	25
Fomesafen + Herbimax	0.09 + 1.5 pt	5	35	68	55	29	61	45
Fomesafen + Scoil	0.09 + 1.5 pt	10	48	78	59	40	71	49
Fomesafen + Quad 7	0.09 + 1%	10	35	70	43	29	60	38
Fomesafen + Activator 90	0.09 + 0.25%	10	20	39	36	20	31	30
Fomesafen + Herbimax	0.09 + 1.5 pt	10	26	58	48	18	46	38
Fomesafen + Scoil	0.09 + 1.5 pt	20	36	71	60	31	64	51
Fomesafen + Quad 7	0.09 + 1%	20	46	85	64	41	83	56
Fomesafen + Activator 90	0.09 + 0.25%	20	29	49	46	20	34	39
Fomesafen + Herbimax	0.09 + 1.5 pt	20	26	58	49	15	45	38
LSD (5%)			10	9	10	10	10	10

^a Fomesafen = Reflex® formulation; Scoil = methylated seed oil; Quad 7 = basic pH blend adjuvant; Activator 90 = nonionic surfactant; Herbimax = petroleum oil concentrate.

^b Spray volumes at 2.5 and 5 gpa were applied with Turbo TeeJet 11001 nozzles and at 10 and 20 gpa were applied with Turbo TeeJet 11004 nozzles.