

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 (Flexstar®) 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 76 F, 75% RH, wind 8-10 mph, and sky 20% 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 Flexstar® formulation of fomesafen contains a partial adjuvant load but still requires additional nonionic surfactant or oil-based adjuvant. Fomesafen (Flexstar®) efficacy was generally not influenced by changes in spray volume, regardless of spray adjuvant. Quad 7 and Scoil at 1.5 pt/A were generally the most effective adjuvants for flax control by fomesafen while Activator 90 was least effective. The adjuvant in the Flexstar® formulation was likely important for herbicide efficacy when applied at low spray volumes with Activator 90 at 0.25% v/v or Quad 7 at 1% v/v, where these supplemental adjuvants were applied on a percentage v/v basis. (Dept. of Plant Sciences, North Dakota State University, Fargo)

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

Treatment <sup>a</sup>	Rate	Volume <sup>b</sup>	July 16			July 23		
			Sunflower	Flax	Tame buckwheat	Sunflower	Flax	Tame buckwheat
	(lb/A)	(gpa)	(%)	(%)	(%)	(%)	(%)	(%)
Fomesafen + Scoil	0.09 + 1.5 pt	2.5	35	68	51	30	59	36
Fomesafen + Quad 7	0.09 + 1%	2.5	36	79	51	29	69	34
Fomesafen + Activator 90	0.09 + 0.25%	2.5	33	66	45	29	53	33
Fomesafen + Herbimax	0.09 + 1.5 pt	2.5	33	68	51	23	55	33
Fomesafen + Scoil	0.09 + 1.5 pt	5	38	79	61	28	65	39
Fomesafen + Quad 7	0.09 + 1%	5	41	76	54	28	68	38
Fomesafen + Activator 90	0.09 + 0.25%	5	28	58	45	23	49	35
Fomesafen + Herbimax	0.09 + 1.5 pt	5	38	71	58	29	58	34
Fomesafen + Scoil	0.09 + 1.5 pt	10	36	76	50	33	60	33
Fomesafen + Quad 7	0.09 + 1%	10	39	79	50	33	64	33
Fomesafen + Activator 90	0.09 + 0.25%	10	30	50	46	24	36	35
Fomesafen + Herbimax	0.09 + 1.5 pt	10	36	63	48	30	51	35
Fomesafen + Scoil	0.09 + 1.5 pt	20	35	64	51	30	50	36
Fomesafen + Quad 7	0.09 + 1%	20	39	79	59	33	55	38
Fomesafen + Activator 90	0.09 + 0.25%	20	31	51	51	25	36	36
Fomesafen + Herbimax	0.09 + 1.5 pt	20	31	59	56	25	44	41
LSD (5%)			NS	10	NS	NS	15	NS

<sup>a</sup> Fomesafen = Flexstar® formulation; Scoil = methylated seed oil; Quad 7 = basic pH blend adjuvant; Activator 90 = nonionic surfactant; Herbimax = petroleum oil concentrate.

<sup>b</sup> 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.