

**Bentazon: 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 bentazon efficacy. Oilseed sunflower 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 June 19 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 application were 78 F, 30% RH, wind 10 to 15 mph, and sky clear. Sunflower was 2- to 5-inch, flax 1- to 5-inch, and buckwheat 2- to 5-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.

Bentazon efficacy increased as spray volume increased when applied with Quad 7 at 1% v/v. However, bentazon efficacy was similar for all spray volumes when applied with Scoil at 1.5 pt/A. Sunflower and buckwheat control by bentazon plus Scoil methylated seed oil or Quad 7 basic pH blend adjuvants were generally similar and greater than bentazon plus Herbimax petroleum oil. These data support previous experiments where efficacy with most herbicides increased as spray volume increased 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. Bentazon: spray volume and adjuvants. (Ramsdale and Messersmith)

Treatment <sup>a</sup>	Rate	Volume <sup>b</sup>	June 30		July 8	
			Tame buckwheat	Sunflower	Tame buckwheat	Sunflower
	(lb/A)	(gpa)	(%)	(%)	(%)	(%)
Bentazon + Scoil	0.5 + 1.5 pt	2.5	41	92	40	68
Bentazon + Quad 7	0.5 + 1%	2.5	34	81	31	48
Bentazon + Herbimax	0.5 + 1.5 pt	2.5	24	70	20	41
Bentazon + Scoil	0.5 + 1.5 pt	5	40	89	38	64
Bentazon + Quad 7	0.5 + 1%	5	39	86	30	61
Bentazon + Herbimax	0.5 + 1.5 pt	5	33	81	26	58
Bentazon + Scoil	0.5 + 1.5 pt	10	46	92	39	70
Bentazon + Quad 7	0.5 + 1%	10	48	87	41	61
Bentazon + Herbimax	0.5 + 1.5 pt	10	36	81	33	54
Bentazon + Scoil	0.5 + 1.5 pt	20	41	88	36	59
Bentazon + Quad 7	0.5 + 1%	20	58	97	54	73
Bentazon + Herbimax	0.5 + 1.5 pt	20	30	83	30	56
LSD (5%)			18	9	NS	13

<sup>a</sup> Scoil = methylated seed oil; Quad 7 = basic pH blend adjuvant; 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.