

## BROOM SNAKEWEED CONTROL WITH PICLORAM AND AN ORGANOSILICONE SURFACTANT

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Broom snakeweed (*Gutierrezia sarothrae*) is a common noxious range weed and often sprayed commercially by aircraft. In New Mexico, 100,000 to 200,000 acres are sprayed annually primarily with picloram. The accepted commercial rate is 0.25 lb/A applied from late September until December. This is the second year of an experiment established near Corona, New Mexico designed to investigate subrecommended rates with the inclusion of an organosilicone surfactant (XRM-5234). Treatments were replicated 3 times and applied under various environmental conditions on 5 dates. Sprays were broadcast with a CO<sub>2</sub> pressurized hand-held sprayer delivering 21 gpa at 60 psi under relatively high (morning) and low (afternoon) humidity conditions. Broom snakeweed mortality was estimated by 3 observers comparing plant reduction relatively to untreated buffers placed between each replication.

Addition of 0.125% v/v organosilicone surfactant generally did not enhance the effectiveness of picloram for broom snakeweed control (Table). Picloram activity was similar at 0.125 lb/A or higher with the exception of the May 1993 sprayed date when performance was poorer at all rates. Results from morning and afternoon spraying were inconclusive but snakeweed control tended to be higher when sprayed under relatively higher humidity and lower air temperature conditions during morning hours. Data suggest picloram can be applied below the label rate provided close attention is paid to spraying under ideal environmental conditions. (Department of Animal and Range Science, New Mexico State University, Las Cruces, NM 88003).

Table. Snakeweed mortality following applications of picloram and picloram plus organosilicone surfactant (XRM-523) under various environmental conditions on the NMSU Corona Research Ranch. Treatments evaluated by 3 observers on October 7, 1993.

Date	9/13/93	9/12/93	10/24/92	10/25/92	12/2/92	12/1/93	3/26/93	3/25/93	5/21/93	5/21/93	X	
Spray time	9-10	5-6	9-10	9-10	8:30-9:30	4:30-5	9-10	5-6	8-9	2-3		
Airtemp °C	25.0	25.0	15.2	16.5	-5.8	9.7	8.0	21.0	19.3	20.4		
Soil temp (10, 50 cm)	19.7, 19.8	22.5, 19.7	15.4, 15.3	14.0, 14.9	0.5, 2.7	2.0, 2.8	9.5, 8.3	13.7, 7.8	15.9, 14.5	18.2, 14.5		
% RH	17.5	15	50	48	68	18	38.5	13.5	14.2	13.8		
Wind speed (km/h)	5.8	5.5	4.3	6.2	2.1	4.8	4.5	3.1	3.2	5.5		
Soil water	moist	moist	moist	wet	very wet	very wet	mod.	mod.	dry	dry		
	(Snakeweed Mortality %)											
	Dosage (kg/m)											
Picloram	.07	.54	34	76	85	72	59	53	52	40	46	57
+ Surfactant	.125%	65	58	71	79	69	70	68	44	48	38	61
Picloram	.14	98	96	100	90	100	94	95	87	63	69	89
+ Surfactant	.125%	94	87	100	100	100	99	92	95	84	66	92
Picloram	.21	99	100	100	100	100	100	97	99	84	56	94
+ Surfactant	.125%	100	99	100	100	100	100	100	96	83	76	95
Picloram	.25	100	100	100	100	100	100	100	100	88	93	98
Control	6	7	7	11	6	7	13	5	16	8		
LSD (0.05)	15	26	21	20	22	10	14	16	19	27		