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Leafy spurge control with fall applications of sulfometuron

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Leafy spurge is a major broadleaf, perennial weed problem in rangeland. This research was conducted in Crook County, WY, to compare the efficacy of fall applications of sulfometuron on leafy spurge.

Plots were established September 16, 1986 to a dense stand of leafy spurge in a rangeland setting. Leafy spurge was mature and had shed most of its seed. Perennial grasses 1 to 2 feet tall were present as an understory. Herbicides were applied with a 6-nozzle knapsack spray unit with a carrier volume of 40-gpa delivered at 40 psi pressure through 8004 flat fan nozzles. Weather conditions were as follows: air temp. 53° F, relative humidity 80%, wind S at 5 mph, sky cloudy, soil temp. – 0 inch 55° F, 1 inch 57° F, 2 inch 57° F, 4 inch 57° F. Soil was a silt loam (22% sand, 58% silt and 20% clay) with 1.8% organic matter and 6.3 pH. Plots were 9 by 30 feet and arranged in a randomized complete block design with four replications.

Percent leafy spurge control, suppression, and grass suppression were evaluated visually on July 8, 1987. No treatment provided satisfactory control when evaluated 10 months after application. Picloram applied at 2.0 lb ai/A normally provides 90% control or better one year after application, however, in this particular study control was variable, ranging from 50 to 90% control in individual plots. All treatments containing sulfometuron resulted in suppression of leafy spurge, with sulfometuron + glyphosate resulting in the highest suppression, at 81%. All treatments containing sulfometuron at the 0.0468 lb ai/A rate and higher also resulted in grass suppression. Sulfometuron + glyphosate resulted in the highest percentage of grass suppression at 89%. Due to the suppressive nature of sulfometuron, its use as a setup treatment needs to be studied. (Wyoming Agric. Exp. Sta., Laramie, WY 82071, SR 1518).

Leafy spurge shoot control.

Treatment ¹	Rate lb ai/A	Percent control ² 1987	Percent suppression ² 1987	Percent grass suppression ² 1987
sulfometuron	.0313	0	10	0
sulfometuron	.0468	3	30	20
sulfometuron	.0938	13	35	28
sulfometuron + 2,4-D LVE	.0313 + 1.0	10	38	0
sulfometuron + 2,4-D LVE	.0625 + 1.0	24	54	20
sulfometuron + picloram	.0313 + .125	13	33	10
sulfometuron + picloram	.0625 + .125	60	75	23
sulfometuron + glyphosate	.0625 + .75	49	81	89
fosamine	1.0	0	0	0
fosamine	2.0	0	0	0
sulfometuron + fosamine	.0938 + 1.0	13	51	11
picloram	.125	0	0	0
picloram	2.0	70	0	0
LSD (0.05) =		16	18	18
CV =		61	88	42

¹Treatments applied September 16, 1986; surfactant, X-77, added to all treatments at 0.5% v/v.

²Visual evaluations July 8, 1987.