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Update on Wyoming's leafy spurge research program

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The control of leafy spurge with initial and retreatments of picloram

This research was conducted near Devil's Tower, Wyoming to compare the efficacy of various rates of picloram for leafy spurge control. Plots were retreated to maintain or attain 80% control with light rates of picloram or picloram/2,4-D tankmixes. Initial treatments were 0.25 lb picloram to 2.0 lb picloram in 0.25 lb increments and 0.25 lb picloram + 1.0 lb 2,4-D. Retreatments were 0.25 or 0.5 lb picloram or 0.25 lb picloram + 1.0 lb 2,4-D. The initial treatment of 0.25 lb picloram was retreated only with 0.25 lb picloram and the initial treatment of 0.25 lb picloram + 1.0 lb 2,4-D was retreated only with 0.25 lb picloram + 1.0 lb 2,4-D. Plots were 10 by 27 ft. with four replications arranged in a randomized complete block. The initial herbicide treatments were applied May 24, 1989. Retreatments were applied June 6, 1990; June 13, 1991; June 10, 1992; September 22, 1993; and September 19, 1994. The soil was a silt loam (22% sand, 58% silt, and 20% clay) with 1.8% organic matter and a 6.3 pH. Leafy spurge was in full bloom and 12 to 14 inches in height, for the initial treatments and in full bloom, 12 to 20 inches in height for spring retreatments and 16 to 24 inches in height for fall retreatments. Infestations were heavy throughout the experiment area. Visual weed control evaluations were made June 6, 1990; June 13, 1991; June 10, 1992; June 21, 1993; June 15, 1994; June 27, 1995; and June 18, 1996.

Plots with initial treatments of 1.25 lb picloram or greater in 1989 provided 80% or better leafy spurge control and did not require retreatment in 1990. Initial treatments maintaining 80% control or better in 1991 were 1.5, 1.75 or 2.0 lb picloram treatments. Initial treatments of 2.0 lb picloram were the only treatments maintaining 80% control or better in 1992. The only 1990 retreatment attaining 80% control or better in 1991 was 0.5 lb picloram over an initial 1.0 lb of picloram. None of the retreatments applied in 1991 attained 80% control in 1992. None of the retreatments applied in 1992 attained 80% control in 1993. All 0.5 picloram retreatments applied in the fall of 1993 attained 80% control or better in 1994. One 0.25 picloram + 1.0 2,4-D retreatment applied over an initial treatment of 1.5 picloram attained 80% control in 1994. None of the 2.0 lb picloram treatments have maintained 80% since 1993. No treatments maintained 80% in 1995 and control is declining. Spring retreatments of picloram at 0.25 or 0.5 have not been effec-

tive in attaining or maintaining 80% control. Spring retreatments of 0.25 lb picloram + 1.0 lb 2,4-D appear to be as effective as spring retreatments 0.5 lb picloram. However, spring retreatments of 0.25 lb picloram + 1.0 lb 2,4-D have not attained or maintained 80% control. Fall retreatments of 0.5 lb picloram or 0.25 lb picloram + 1.0 lb 2,4-D may be effective in attaining or maintaining 80% control. The most effective long-term treatment for control of leafy spurge was 2.0 lb picloram.

The control of leafy spurge with imazameth

The objective of this study was to compare the efficacy of imazameth for leafy spurge control. The plots were 10 by 27 feet in a randomized complete block design with four replications. Treatments were imazameth at one, two and 4 oz ai/a with or without a crop oil concentrate and picloram at 0.5 lb ai/a. Treatments were applied with a hand-held CO₂ pressurized six-nozzle sprayer (20" spacing) delivering 20 gpa at 40 psi. Treatments were applied September 26, 1995 and evaluated June 18, 1996. Leafy spurge was mature and 16 to 24 inches tall. The soil was a silt loam with 22% sand, 58% silt, 20% clay; with 1.8% organic matter and Ph 6.3. Depth to parent material is approximately 27 inches.

Imazameth at 4 oz/a plus a crop oil concentrate provided the best control (87%). Without the crop oil concentrate control was only 69%. The addition of a crop oil concentrate greatly improved leafy spurge control. No other treatments provided satisfactory control. There was little or no grass damage when imazameth was applied after grasses were mature in mid September. It appears that imazameth may have potential fit for control of leafy spurge.