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Published by: Great Plains Agricultural Council. Leafy Spurge Symposium.

Effect of original treatments, retreatments and combinations on leafy spurge control as evaluated by live shoot regrowth

H. P. ALLEY and M. A. FERRELL

University of Wyoming Laramie, WY 82070

This experiment, located near Devil's Tower National Monument, was established for accumulation of original/retreatment efficacy data for control of leafy spurge. Six successive years of data have been collected since the experiment was established in the spring of 1978.

Original treatments were made May 25, 1978, when the leafy spurge was in the pre-bud to bloom stage of growth. Liquid formulations were applied with a garden tractor mounted spray unit delivering 128 gpa water carrier. The granular formulation was applied with a hand operated centrifugal granular spreader. Retreatments were made June 12, 1979, May 13, 1980, May 20, 1981, May 19, 1982, May 18, 1983, and May 22, 1984. The retreatments of picloram at 0.5 and 1.0 lb ai/A were terminated with the 1981 retreatment. Retreatments were made with a 13 nozzle truck mounted sprayer delivering 32 gpa water carrier in 1979, 1981 and 1982 and 40 gpa in 1980. Leafy spurge was in the bud to flower stage-of-growth and 8-14 inches in height each year that retreatments have been applied. Plots were 11 by 22 feet arranged in a split block design with two replications. Soil was a sandy loam (65% sand, 23% silt and 11% clay) with 1.5% organic matter and a pH of 7.7.

Percent shoot control is based on reduction of live leafy spurge shoots per square foot recorded from treatment plots as compared to the untreated (check) plots. The retreatments with picloram at 1.0 lb ai/A, applied over all original treatments, is maintaining 97 to 100% shoot control as evaluated in 1984. The 0.5 lb ai/A of picloram is somewhat less effective but is still maintaining 91 to 97% shoot control except where the original treatment was dicamba. The original treatments, without a retreatment program, are being re-infested to a point that retreatment programs would have to be considered. The retreatments of 2,4-D amine, dicamba and the combination of dicamba/2,4-D have not been as effective as the light rates of picloram.