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Herbicide evaluation for leafy spurge in South Dakota

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Abstract:

Leafy spurge (*Euphorbia esula*) infests 302,000 acres in South Dakota. Ninety-two percent of the infestation is in grassland or noncrop areas. Environmental sensitivity and economic constraints are critical factors in many areas. Field studies were established in 1998 in Harding County, SD. Data provided comparative performance under more critical precipitation conditions compared to other areas of South Dakota. In the long-term study, reduced rates of picloram + 2,4-D applied in the spring, spring and fall 2,4-D ester and spring and fall imazapic + 28% N + MSO provided at least 90% stand reduction 12 months after two application sequences. Initial high rates of picloram followed by annual 2,4-D in the spring, spring 2,4-D at high rate, spring dicamba and spring fosamine provided at least 75% control for the same period. Evaluation of emerging herbicide technologies compared rates and timing of imazapic. Fall treatments of .06 and .12 lb/A provided 70 to 85% control 9 months after treatment, respectively. Spring treatments at the same rates provided 47 and 45% control 3 months after initial treatment. Integrating reduced rates of fall-applied herbicides following sheep grazing provided 75 to 90% reduction after two seasons. The studies provided data to improve herbicide decisions in drought stress situations. The concepts integrated into the TEAM Spurge Project resulted in increased awareness of leafy spurge; provided data and first-hand observation for producers and land managers and has dramatically increased acres of leafy spurge subjected to control practices in the project and surrounding area using biological agents, new herbicide technologies and livestock grazing.