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Control of leafy spurge along rights-of-way with burning and herbicides

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The emphasis of our program for the last several years has been to explore new methods of leafy spurge control that limit the use of herbicides. In cooperation with the Minnesota Department of Transportation, experimental research plots were established in the fall of 1988 along a severely infested, sloping right-of-way in the city of Eden Prairie, MN. The experimental design was a randomized complete block with six replications of each treatment. Individual plot size was 3 m x 4 m. Evaluations were taken as percent reduction of the original population density on each plot. Herbicides were applied by hand using a backpack sprayer. Burning was accomplished by lighting the downwind edges of plots with a propane torch. The herbicides used in this study were picloram (4-amino-3,5,6-trichloropiclinic acid), 2,4-D amine (2,4-dichlorophenoxyacetic acid), picloram + 2,4-D, and glyphosate (N-(phosphonomethyl) glycine). Treatments were 1) late fall application of 0.10 lb ai/A picloram followed by burning, 2) application of 0.25 lb ai/A picloram followed by burning, 3) late fall application of 0.25 lb ai/A picloram + 1.0 lb ai/A 2,4-D followed by burning, 4) late fall application of 4.0 lb ai/A glyphosate followed by burning, 5) late fall burning only, and 6) unburned controls. All plots burned in fall of 1988 were again burned in the fall of 1989. Picloram + 2,4-D followed by burning resulted in 100% control after 2 years. Treatments in order of effectiveness were picloram at 0.25 lb ai/A + 2,4-D at 1.0 lb ai/A + burning > picloram at 0.25 lb ai/A + burning > picloram at 1.0 lb ai/A + burning > glyphosate + burning > burning alone. The annual grasses *Setaria glauca* and *Panicum capillare* tend to dominate the burned plots after 2 years.