

EFFECT OF AMINOPYRALID ON CANADA THISTLE AND THE  
NATIVE PLANT COMMUNITY IN A RESTORED  
TALLGRASS PRAIRIE

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## ABSTRACT

Almquist, Travis Lee; M.S.; Program of Natural Resources Management; Department of Plant Sciences; College of Agriculture, Food Systems, and Natural Resources; North Dakota State University; April 2008. Effect of Aminopyralid on Canada Thistle and the Native Plant Community in a Restored Tallgrass Prairie. Major Professor: Dr. Rodney G. Lym.

Aminopyralid will control Canada thistle in non-crop areas, but the effect on native plant communities is unclear. Aminopyralid efficacy on Canada thistle and native species was evaluated in a restored prairie at the Glacial Ridge Preserve managed by The Nature Conservancy in Polk County, MN. Canada thistle stem density was reduced from 16 to 0.1 stems/m<sup>2</sup> 10 months after treatment (MAT) with aminopyralid. Several forb species, both desirable and undesirable, were also reduced by aminopyralid. Native grass cover increased 10 MAT in both Canada thistle-infested and native plant communities. Species richness, evenness, and diversity were reduced following aminopyralid application in both Canada thistle-infested and native plant communities. The benefits of Canada thistle control, removal of undesirable species, and the increase in native grass cover should lead to an overall improvement in the long-term stability and composition of the restored prairie plant community. In a greenhouse study, Canada thistle control was similar when aminopyralid was applied alone or with diflufenzopyr. Chemical and biological control of yellow toadflax was evaluated at a Waterfowl Production Area near Jamestown, ND. Picloram at 1120 g/ha plus diflufenzopyr provided the best control (98%), regardless of application time, and maintained control up to 14 MAT. Herbicide combinations generally provided better long-term control than any herbicide used alone. The biological control agent *Mecinus janthinus* failed to establish on yellow toadflax in North Dakota.