

*Reprinted with permission from: 1994 Leafy Spurge Symposium, Bozeman, MT.  
July 26-29, 1994. p. 19.*

*Sponsored by: Great Plains Agricultural Council, Montana Noxious Weed Trust Fund,  
and United States Department of Agriculture-Agricultural Research Service.*

---

## **An overview of biological control of leafy spurge in Alberta**

ALEC McCLAY

*Alberta Environmental Centre, Bag 4000, Vegreville, Alberta, Canada T9C 1T4.*

Leafy spurge is estimated to infest around 6,000 hectares in Alberta. Infestations occur throughout Alberta in a wide range of soil and habitat types, but are concentrated along the main river systems in the southern part of the province. Biological control efforts have been conducted since 1982 by the Alberta Environmental Centre, Alberta Agriculture and Agriculture Canada, in cooperation with the International Institute of Biological Control in Delémont, Switzerland. The most successful agent has been the root-feeding beetle, *Aphthona nigricutis*, which has been released at over 120 research sites and redistributed widely through a program of redistribution clinics. *Aphthona nigricutis* is giving excellent control on sloping and hilltop sites with lighter soils. At one experimental site leafy spurge above-ground biomass was over 100 g m<sup>-2</sup> when *A. nigricutis* was released, and was reduced to less than 1 g m<sup>-2</sup> five years later. *Aphthona flava* has also been redistributed to 44 research sites, but has so far not reached high population densities at any except the original release site. The main need now is for biological control agents which will be successful in moister and lower-lying sites such as riverbanks, flood plains and mesic pastures. Agents which are currently being tested in these environments include the stem-mining fly *Pegomya euphorbiae*, the moth *Minoa murinata*, and the root-feeding beetles *Aphthona cyarissiae* and *Aphthona lacertosa*.