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An update of biological control of leafy spurge in Alberta

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A co-operative effort between Alberta Agriculture, Food and Rural Development, the Alberta Environmental Centre and Agriculture and Agri-Food Canada and the International Institute of Biological Control in Delemont, Switzerland has seen a large number of biological control agents released in Alberta for the control of leafy spurge. Alec McClay, Alberta Environmental Centre and Peter Harris, Agriculture and Agri-Food Canada, Lethbridge, Alberta have been instrumental in introducing new insect biological control agents into the province for study and monitoring. Once an agent has “proven itself” and there are large numbers available at some of the more successful sites, the Agronomy Unit and Public Land Services of Alberta Agriculture, Food and Rural Development have become involved in the distribution of the biological control agent to suitable sites. The distribution of the most successful agent in Alberta, *Aphthona nigriscutis*, has been through “hands-on” redistribution clinics involving the municipal district agricultural fieldmen and producers. Local producers and agricultural fieldmen further redistribute from the more heavily populated agent sites or collection centres in their area.

Leafy spurge is conservatively estimated to infest 15,000 acres in Alberta. There have been over 150,000 *A. nigriscutis* released at over 400 sites in Alberta. At one site the leafy spurge biomass was reduced from 172 gm⁻² down to 2 gm⁻² in 5 years with a corresponding increase in grass biomass from 1 gm⁻² up to 57 gm⁻². Only the initial *Aphthona flava* release in Alberta is providing beetles for further redistribution with few of the other 44 releases establishing. As other biological control agents are needed for lower lying, higher moisture and shaded sites, the root-feeding *Aphthona cyparissiae*, *Aphthona czwalinae* and *Aphthona lacertosa* are being tested in Alberta as well as the stem-mining fly *Pegomya* spp., the gall fly *Spurgia esulae*, and the moth *Minoa murinata*.