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## **USDA-APHIS and Colorado Department of Agriculture, an active partnership in biological control of leafy spurge**

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A partnership has been developed between the USDA, APHIS and the Colorado Department of Agriculture to control leafy spurge in Colorado. Since 1988, efforts have been directed at importing and establishing a complex of exotic bioagents that attack all growing stages of leafy spurge. All beneficial organisms have been supplied by APHIS while CDA has been responsible for locating release sites. A total of 39 field insectary sites have been selected in 15 counties of Colorado in which four species of leafy spurge predators have been released. Since the start of the project, 18,142 specimens have been relocated to these insectary sites. The current species that are being utilized in this program include: *Aphthona nigriscutis*, *A. cyparissiae* and *A. flava*, which are root-mining flea beetles and *Oberea erythrocephala*, a root and stem boring beetle. Additional species to be supplied by APHIS and released in future years include: *Aphthona czwalinae*, a rootfeeding flea beetle, and *Spurgia esulae*, a shoot tip gall midge, along with other species as they become available. As these species become established and begin to thrive in the Colorado field insectary sites, collection and redistribution to other leafy spurge infestations will be accomplished by the Colorado Department of Agriculture.

An establishment survey conducted during the 1992 growing season by the Colorado Department of Agriculture using procedures described by APHIS revealed successful recoveries in 15 of the 25 field insectary sites. Several survey dates were selected in an effort to determine peak predator emergence, which will make timing for collection and redistribution more accurate.

In addition to the import and release program, soil samples have been collected from all of the field insectary sites to determine if certain soil types favor individual species. At this time, all that has been determined is that *Aphthona nigriscutis* and *Aphthona cyparissiae* have been recovered at releases that exhibit wide range of soil types.