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Progress report on field and quarantine research toward biological control of leafy spurge with phytophagous insects

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Abstract:

Seven species of insects have been released and monitoring of establishment/efficacy is continuing: *Hyles euphorbia*, a defoliating moth, has been released throughout several states, but is infected with NPV so no further work, other than opportunistic observation, is anticipated. *Oberea erythrocephala*, a stem-and-root-boring beetle, was released in 1982 in Montana, and is established in only one site where interaction with goats is under study; more have been requested from Rome. *Spurgia esulae*, a gall-fly, was released in 1985 in Montana and is established in one site now serving for life-history studies and as a limited insectary for APHIS and Canada; additional flies were received from Rome in 1990. *Aphthona* (root-boring flea beetle) species were released as follows: *A. czwalinae* released prior to 1989 in Montana, but apparently failed to establish; *A. flava* – released prior to 1989 in Montana and was established at four sites, only one of which could be confirmed in 1989 – that site will be monitored for efficacy in 1990 and will serve as a limited insectary for APHIS; *A. cyparissiae* – released prior to 1989 in Montana with probable establishment at two sites – monitoring and life history studies will continue; *A. nigriscutis* – Dr. Peter Harris of Canada has demonstrated successful reduction of leafy spurge biomass with concomitant replacement of the spurge by native vegetation on open sandy sites – Dr. Harris allowed collection of *A. nigriscutis* adults in Manitoba for 12 releases in 1989 (8 in MT, 2 in NE, 1 in ND, and 1 in ID) – plans are in place for an expanded multiagency cooperative test of various numbers and patterns of release of this insect in 1990 at 6 sites over 5 states (2 in MT, 1 each in ND, NE, CO, and ID). Four additional species of insects have been received from Rome and are

in the Montana State University Insect Quarantine Laboratory at various stages toward petitioning for release: *Dasineura* sp. nr. *capsulae*, a gall-midge, – petition for release has been approved and the environmental assessment (now required) has been written and submitted for approval by the Technical Advisory Group (TAG); *Simyra dentinosa* and *Oxicesta geographica*, defoliating moths, and *Chamaesphecia crassicornis*, a root- and stem-boring moth. Anticipated soon are: *Eurytoma euphorbiana*, a Seed wasp; *Aphthona abdominalis* from Europe; and *A. seriata* plus *A. chinchini* from China.

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