Some insects introduced into Colorado to help manage invasive weeds

Biocontrol

Biological pest control helps decrease agriculture’s reliance on chemical pest control. The insectary imports, rears, establishes, and colonizes new beneficial organisms for control of specific plant and insect pests. Successful biological pest control reduces production costs, decreases amounts of chemicals entering the environment, and establishes colonies of beneficial insects offering a natural permanent pest control solution.

Contact the insectary

Weed and Insect Programs

Approximately 30 weed predators are being cultured, released, and established on weed infestations throughout the State. In addition to the biological weed control programs, this section conducts control programs for the alfalfa weevil and Oriental fruit moth, with a total of twelve species.
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Approximately 30 weed predators are being cultured, released, and established on weed infestations throughout the State. In addition to the biological weed control programs, this section conducts control programs for the alfalfa weevil, and Oriental fruit moth, with a total of twelve beneficial species. The main function of the Biological Pest Control Section is the rearing and releasing of natural enemies for control of specific plant and insect pests. To request biological pest control please contact our office. This section also acts as the State’s receiving station for biological control agents. New biological control programs are being developed primarily by agencies of the United States Department of Agriculture. Foreign exploration produces several new species each year that are known to control introduced plant and insect pests. These exotic species are exposed to a strict quarantine procedure before they become available to cooperating states for general release. This ensures that potentially hazardous species are not accidentally introduced with the beneficial insects.

Views Fees & Request A Bug

Canada Thistle Biocontrol
Dalmatian Toadflax Biocontrol
Diffuse/Spotted Knapweed Biocontrol
Field Bindweed Biocontrol
Leafy Spurge Biocontrol
Musk Thistle Biocontrol
Field Bindweed
*Convolvulus arvensis*

- Bindweed mite
A microscopic mite that can cause distortion of the new growth of field bindweed.
Bindweed Gall Mite

*Aceria malherbae*

Microscopic mites on the surface of leaf

Very heavily galled plant

Reductions in plant biomass are sometimes seen. Usually plant populations are not reduced.
Diffuse Knapweed
*Centaurea diffusa*

- Seedhead Gall Flies
- Seedhead Weevil
- Stem-boring Weevil
Spotted Knapweed
*Centaurea maculosa*

- Seedhead Gall Flies
- Stem-boring Weevil
Seedhead Gall Flies

**Adult stages:**

*Urophora affinis*

*Urophora quadrifasciata*
Seedhead Gall Flies

*Urophora affinis*

These develop in the seed heads of both diffuse and spotted knapweed.

*Urophora quadrifasciata*
Knapweed Stem-boring Weevil
*Cyphocleonus achates*

Attacks both types of knapweeds
Seedhead Weevil
*Larinus minutus*

Used for control of diffuse knapweed
Dalmation Toadflax
*Linaria dalmatica*

- *Mecinus janthiniformis*
Yellow Toadflax
*Linaria vulgaris*

- *Mecinus janthinus*
Biocontrol of Dalmatian Toadflax:

There are a number of Dalmatian toadflax agents to help control the spread of this noxious weed. The insectary is currently working with the stem boring weevil, *Mecinus janthiniformis*, and the foliage feeding moth, *Calophasia lunula*. We do not recommend *M. janthinus* for controlling Dalmatian toadflax.

For the stem boring weevil, adult females lay their eggs in the stems of the toadflax in the spring. The larvae hatch from the eggs and begin to feed on the inside of the stem. When finished feeding the larvae will pupate within the stem and eventually emerge as an adult. The adult stays within the stem until spring when it chews its way out to continue the life cycle. One generation is produced per year.

For the foliage feeding moth, the adult female lays her eggs on the foliage of the toadflax and then the larvae begin to feed on the leaves of the plant. After 5 instars, or molts, the larva will pupate in the soil surrounding the plant and emerge as an adult. Two to three generations are possible in each year.

FAQ

What else does *M. janthiniformis* and *C. lanula* attack?
Mecinus janthinus

A stem boring weevil of yellow toadflax
Mecinus janthiniformis

A stem boring weevil of Dalmatian toadflax

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• *Aphthona flea beetles*
• *Stem-boring beetle*
• *Leafy spurge hawk moth*
Leafy Spurge Flea Beetles:  
*Aphthona* species

*A. czwalinae*

*A. cyparissiae*

*A. flava*

*A. lacertosa*

*A. nigriscutis*

Photos: USDA-APHIS-PPQ archives
Adult flea beetles feed on the foliage

Aphthona lacertosa

Aphthona nigriscutis

Aphthona flava
Most damage by these flea beetles is done by the larval stages, which feed on the roots.
Oberea erythrocephala

A stem boring longhorned beetle of leafy spurge

Note: This insect is well established in many places and is no longer being reared for further release
Leafy Spurge Hawk Moth
*Hyles euphorbiae*

A hornworm caterpillar that (sometimes) eats a lot of leafy spurge leaves

Note: This insect is no longer being reared for further release
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Approximately 30 weed predators are being cultured, released, and established on weed infestations throughout the State. In addition to the biological weed control programs, this section conducts control programs for the alfalfa weevil and Oriental fruit moth, with a total of twelve species being successfully maintained for release.
Biological pest control agents are seasonally available to help suppress weed and insect pests in Colorado. They can be requested by private landowners in the State, or other governmental agencies concerned with controlling the spread of exotic invaders. Supplies can be limited and vary from one year to the next; thus, the Insectary cannot guarantee a release for each request submitted.

Please Do Not Send Payment Now (with your request). We will contact you to arrange for payment and shipping arrangements in season.

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<thead>
<tr>
<th>Fee</th>
<th>Description</th>
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<tbody>
<tr>
<td>Varies</td>
<td>Canada Thistle - rust fungus $50, gall flies $30</td>
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<tr>
<td>$30.00</td>
<td>Dalmatian Toadflax</td>
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<tr>
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