Plant Protection Today: USDA’s Biological Control Helps Manage Plant Pests Then and Now

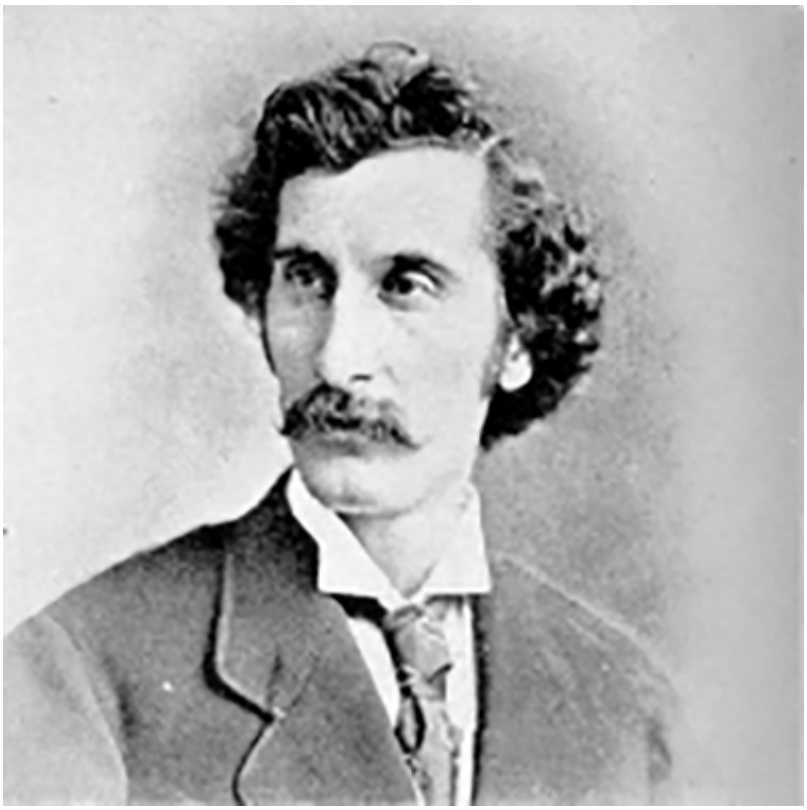
Print

Cover Photo: In Montana, USDA's Technician Christian Otis collects leafy spurge biocontrol—flea beetles and root/stem beetles—that Montana Biocontrol Coordination Project (MTBCP) will send to out-of-State cooperators for release.

A Practical Option to Suppress Targeted Pest Populations

By Sharon Lucik

Biological control (biocontrol) was successfully used in the United States for the first time in 1888 when USDA's Chief Entomologist Charles Valentine Riley introduced an Australian beetle (*Rodolia cardinalis)* to combat cottony cushion scale in California's citrus groves. Decades later, the USDA Plant Protection and Quarantine (PPQ) staff carry on Riley's foundational work. They continue to approve and release biocontrol agents that support U.S. agriculture, natural resources, human and/or animal health, and domestic and international trade.



Charles Valentine Riley was a pioneer in the field of entomology in the United States and is considered the father of modern biological control.

"We are committed to safe and effective biocontrol," said PPQ National Policy Manager Ron Weeks. "PPQ's three core functional areas—Policy and Management, Field Operations and Science and Technology—are responsible for the biocontrol activities we deliver and those we support through cooperative agreements. Last year the program funded and provided oversight for 31 agreements in 22 States.

One such agreement is PPQ’s long-standing support of the Montana Biocontrol Coordination Project (MTBCP).”

Biocontrol is a practical option to suppress targeted pest populations. It involves the reduction of pests through the use of their natural enemies such as parasitoids, predators, pathogens, antagonists, or competitors. It’s environmentally sound, reduces the use of conventional pesticides, and once established, biocontrol is self-sustaining.

Harvesting Montana’s Benefits Deep in the Weeds

Ten years ago, Melissa Maggio accepted the job as MTBCP’s Project Coordinator and began the grassroots effort to help Montana land managers incorporate weed biocontrol into their weed management plans. Today Maggio and her staff collect eight weed biocontrol insect species from the environment and distribute them free-of-charge across Montana’s counties and Tribal Nations. They also ship specimens to other requesting States.

In Montana and States throughout the country, invasive plants like leafy spurge, spotted knapweed, and yellow and Dalmatian toadflax compete with native vegetation and can takeover valuable land if left unchecked. Although herbicide treatments are effective, the cost may be out of reach for some. Alternately, the MTBCP provides no-cost biocontrol agents—flea beetles, root weevils, and stem weevils—that target these non-native weeds and suppress their spread.

Leafy spurge has yellow-green flowers and releases a milky latex sap that is poisonous to most livestock and humans.

“PPQ’s cooperative agreement with MTBCP helps them fund their activities. We also help the staff coordinate out-of-state requests and collect biocontrol insects,” said PPQ’s Montana State Plant Health Director Gary Adams. “Under Melissa’s leadership, it’s a well-run machine. Together we’re providing landowners with another tool to push back against noxious weeds and reclaim their fields, farmlands, and forests.”

For several years, PPQ Plant Health Safeguarding Specialist Hannah Lewis has tag-teamed with Maggio to fill out-of-state biocontrol requests and facilitate interstate movement. According to Lewis, requests come from various agencies and organizations including State departments of agriculture and natural resources, Federal agencies, county weed districts, universities, Tribes, and biocontrol insectaries.

“This year we received requests from Illinois, Kansas, Minnesota, Nebraska, New York, Nevada, Oregon, South Dakota, Utah, Washington State, and Wyoming. And, just last week, we sent out the last biocontrol shipments for the season,” Lewis said.

Without missing a beat or taking a pause, Lewis is already gearing up for next year. Although there’s no telling what 2025 will bring—whether it will be a boom or bust year for Montana’s biocontrol agents—she’s making plans and setting schedules.

If you’re interested in learning more about Montana’s weed biocontrol or requesting insects, contact your local State Plant Health Director.

#

#