The Plant

Purple loosestrife is native to Europe and Asia. It grows four to seven feet tall and blooms in long spikes of showy purple flowers. It grows prolifically in wetlands and other moist areas.

The Problem

Purple loosestrife has spread throughout much of the United States and Canada, where it has no natural predators. A fierce competitor, purple loosestrife eventually overtakes native vegetation, forming nearly impenetrable stands of this single species. As the native plants are replaced the wildlife species that depend on them are affected. Dense stands of purple loosestrife effect wildlife, impair recreational use of wetlands and river, and impede water flow in drainage ditches. Purple loosestrife infestations are causing serious problems in many areas.

A Solution

Three species of plant-feeding beetles, *Galerucella calmariensis*, *Galerucella pusilla*, *and Hylobius transversovittatus*, show particular promise as biological controls for purple loosestrife. These insects have undergone extensive testing to determine their safety, host specificity and effectiveness, receiving USDA approval for importation in 1992. *Galerucella* beetles have been especially effective since they are easy to raise and feed on buds, leaves, and stem tissue, causing defoliation and prevention of flowering and seed production. Introducing native competitors will help keep a more natural ecological balance between the plants and insects.

For More Information:

Contact your County Extension office and speak to one of the following:

- Youth Educator
- Ag & Natural Resource Educator

Resources

Informational websites:

www.four-h.purdue.edu/purple.htm

Sea Grant Nonindigenous Species Site (SGNIS)

www.sgnis.org/

Curriculum:

4-H 917, Biological Control of Purple Loosestrife, Youth Guide ($2 each)

4-H 918. Biological Control of Purple Loosestrife, 4-H Leader's Guide ($8 each)

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PURDUE UNIVERSITY

Biological Control of Purple Loosestrife

(the problem)

Community Service Project

(a solution)

Objectives of this Project:

- Release beetles to provide a biological control of purple loosestrife to increase wetland diversity
- Enlist local wetland stewards by offering educational materials developed to meet 4-H Standards of Quality in Community Service Learning

Outcomes

- Inoculation wetlands with natural controls of purple loosestrife
- Project participants will have the knowledge, skills and materials necessary to rear and release natural enemies in wetlands over the next several years

How long will it take to see a change?

Most estimates range from 5 to 15 years for large impacts of these beetles to be realized. However, recent results from Illinois, Minnesota, and Ontario indicate that *Galerucella* can have a dramatic impact on purple loosestrife infestations in as little as three years. Larger releases and better rearing techniques may help to shorten the time to impact.

Obtaining plants and beetles:

Note: this project involves raising a plant (purple loosestrife) that may not legally be purchased or raised in Indiana without special permission from the Indiana Department of Natural Resources (IDNR) and an introduced species (*Galerucella* beetle).

Purple Loosestrife: You must receive permission from the IDNR to dig and grow purple loosestrife for this project. This permission is granted for educational purposes only. You can obtain a permission form on the Internet site: www.state.in.us/dnr/entomolo/programs .htm. Scroll down to the section on Permits & Licenses and choose "Application to Obtain or Possess *Lythrum* Species in Indiana."

***Galerucella* beetles:** You may be able to locate beetles in wetlands where releases have been made and populations are healthy. If you do not have beetles available in your area you can obtain them from the USDA Biological Control Laboratory in Niles, MI. A recommendation from the State 4-H Office is required to assure that correct procedures are followed for raising and releasing the beetles. Contact your County Extension Office for more information.

Necessary Documentation

DNR Application to Obtain or Possess *Lythrum* Species in Indiana

Property Agreement form - use this form for releases on private properties or public properties where the manager requires a written agreement. The form outlines the terms and conditions of the property use.

Reporting forms (The 4-H Youth Department reports beetle releases and impact to the IDNR each fall. This follow-up is a very important part of this project so IDNR officials can keep track of the effectiveness of the *Galerucella* beetles on the purple loosestrife. Please report your releases to the State 4-H Office, even if you do this project on your own.):

- Release Form - fill out and send to your County Extension Office after beetle release.
- Fall Report form - fill out and send to your County Extension Office after your fall sampling.
- Spring Report form - fill out and send to your County Extension Office after spring sampling.