



## Biological Control for Weed Management

Most successful weed management plans use a number of methods: herbicides, mechanical, cultural, and when appropriate biological control. Use of multiple methods at the same time is called Integrated Pest Management – or IPM.

**Biological control of weeds is the use of one organism to control another.** Classical biological control is the introduction of control agents – usually insects – into a region that is not part of their natural range, to permanently reduce the populations of selected weeds usually also introduced into the region. **REDUCE, not GET RID OF!**

### How Biological Control Works

- Biocontrol agents or bio agents may control weeds by destroying seeds, leaves, root, or stems; by weakening or stressing the weed; and/or by limiting the weeds ability to reproduce.
- Bioagent feeding may also help weaken weeds through damage scars.
- Once established and feeding in your weed infestations, bioagents will continue to attack your weeds, month after month, year after year.



### Biological Control Basics:

Advantages	Disadvantages
Target specific	Initial high costs
Continuous action	Long time until results seen
Long-term cost effectiveness	Uncertain results
Gradual in effect, environmentally friendly	Uncertain 'non-target' effects in the environment
Can move on their own (even into difficult terrain)	Can not be removed

#### Things to Know:

- Efficiency of agents cannot be guaranteed.
- Will not work every time in every situation.
- Will not “eradicate” the weed (no complete kill)
- May not provide the desired level of control
- Some times it might take years before you see biological control impact.

#### Some Questions to Ask Yourself:

- ? *Do I want eradication?* – biological control is not a good fit with this goal.
- ? *Do I want to reduce weed abundance?* – depending on weed and control agent – maybe.
- ? *How soon do I need results? Yesterday? 1 to 2 seasons? within 5 years?* Biological controls take years to show results.
- ? *Do I have lots of money, time, or people?* Other management tools such as herbicides, mechanical, or cultural control may help you achieve your goals sooner.
- ? *Do I have little time or money?* If you can't manage your weeds in any other way, biological control may be better than nothing.

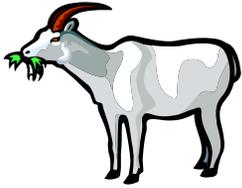
### Status of Biological Control Agents on Weeds

- **Knapweed Agents** – Seedhead feeders are everywhere in the county and are becoming more widespread. Work in Canada shows the best control if seedhead feeders and root feeders are combined.
- **Toadflaxes** – Flower feeding beetles are likely already in your yellow toadflax. A stem-boring weevil that attacks both plants is showing promise in Canada.
- **Purple Loosestife** – *Galerucella* beetles are the most abundant and dramatic agent. Beetles may reduce flowering by eating all the leaves.
- **Leafy spurge** – Beetles (*Apthona* species) that eat the leaves and seed have been the most visible and effective so far.
- **Canada thistle** – Best bets are gall flies (*Urophora cardui*) and seed head weevils (*Larinus planus*).
- **St. Johnswort** – *Chrysolina* beetles are most commonly encountered and most effective. *Agrilus* beetle larvae feed on the root, you must pull up plants to see damage.

For more information:

- Idaho Program: <http://www.agri.idaho.gov>
- Federal Programs: Federal Interagency Committee for the Management of Noxious and Exotic Weeds <http://www.fs.fed.us/ficmnew/index.shtml>
- Local Programs: Contact your State Department of Agriculture, County Noxious Weed Department, Local Cooperative Weed Management Area (CWMA) or Extension Agent.

## Using Livestock for Weed Management



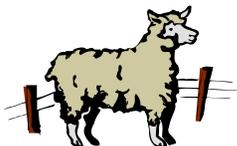
**Prescription grazing** – is carefully controlled grazing to meet land management objectives. It can reduce weeds in crop systems, control weeds in tree crops, remove weeds in sensitive areas, and control weeds on range lands.

### Keys to prescription grazing:

- Timing of grazing – when weeds are most susceptible and taste best to the animal, when desired species are least tasty or least susceptible to damage, in Idaho, generally early spring.
- Frequency of grazing – Depends on the weed species; life span, reproduction, longevity of seeds in soil, and how does it react to grazing.
- Stocking rate – How many animals do you need on how much acreage? It depends on the density of the weed infestation, the palatability of the weed, and your specific goals.
- **Pick the right animal for the job – Pick the correct species and breed for your weed. It is a myth that any old goat (or sheep, or cow) will do.**

### Costs of grazing for weed control:

- Difficult to find supplier
- High operating expense
- Can reduce native plant populations
- Can increase spread of weed seed
- May be incompatible with wildlife



### Benefits of grazing for weed control:

- Low impact to environment
- Convert weeds into saleable product
- Can be used with other control methods
- More long lasting control
- Good for rough terrain

### Website with grazing guidelines for weed control:

<http://www.webpages.uidaho.edu/rx-grazing/>

### Biological Control may be an Option for your Weed Problem IF.....

- You don't expect the weed to be totally destroyed,
- You don't need instant gratification,
- You are willing to check release sites for establishment and impact
- You are willing to give the agents the time they need to work (2-5+ years) before resorting to other weed management options (spray, mechanical, cultural).

*Kootenai County does not discriminate against individuals or groups on the basis of disability in the admission or access to, or treatment in, its public meetings, programs, or activities. Requests for assistance or accommodations can be arranged by contacting the Noxious Weed Control Department at (208) 446-1290 or County Administration Office TTY (208)446-2145 with 3 days advance notice.*

# Biological Control of Weeds



## Noxious Weed Control

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