Extension Service Coos County
Oregon State University, 631 Alder Street, Myrtle Point, Oregon 97458
T 541-572-5263 | **F** 541-572-5963 | http://extension.oregonstate.edu/coos/

CCES 210
July 2011

Tansy Ragwort: What is going on?

Introduction

There is a growing concern in Western Oregon, and that concern is Tansy Ragwort. It seems to be rearing its ugly head (maybe pretty to some) in numerous areas in Western Oregon. People want to know what to do about it. Why have the biocontrol agents like the cinnabar moth and flea beetle failed to control it? Will we have economic losses to our livestock again, as occurred in the 1960-70s?

Oregon enjoyed a long-term success in the mid 1980s through 2005 of not having a lot of tansy ragwort around, to the tune of 5 million dollars a year in economic benefits to Oregon agriculture. Tansy ragwort, a biennial plant in the sunflower family, was unintentionally introduced into Oregon in the early 1920s and within 30 years became a regional problem, killing thousands of livestock animals – mostly cattle and horses, and contaminating pastures and hay. By the 1970s, many of the pastures, hillsides, and log clearings were invaded and heavily infested by tansy ragwort. Tansy is mostly a weed that gets a foothold in plant communities that have been disturbed, either by grazing, logging, construction, fire etc. Unless you have livestock, tansy is more of a symptom of a problem than a problem. The Oregon legislature commission the Oregon Department of Agriculture (ODA) to implement a biological control program to control tansy ragwort. Three insects, the cinnabar moth, a flea beetle, and a seed head fly were introduced from 1960-1971. These insects are natural enemies of tansy ragwort that were tested for host specificity and imported from tansy's homeland in Western Europe. Once they were established in Oregon, ODA began an intensive redistribution program, collecting and releasing millions of the biocontrol agents at infested sites throughout the state. By the mid-1980s, tansy infestations were in sharp decline and cattle deaths were reduced by more than 90%.

Tansy maintained a low profile until 2005, when a winter drought was followed by a warm wet spring, which created the conditions for a resurgence of the pernicious weed. Because tansy populations were low, so were the biocontrol agent populations that depend on the weed. This boom and bust pattern is a natural cycle, and it will take several years for the insects to build up and re-control the weed. Tansy has made a big comeback in parts of Western Oregon, especially in areas grazed by livestock. Most major infestations are enclosed by a fence, which indicates that something is wrong with the plant community. At some sites, overgrazing by livestock is definitely the problem, but the weed was also a problem at some ungrazed sites. Inspection at those sites indicated that disturbance from rodents such as field mice and gophers, were creating microsites where the weed could flourish. The conditions of a long wet spring are great for tansy, but not so great for the insects, and tansy has retaken a strong hold at some sites.



Tansy ragwort (L) and infestation in East Salem, 2005 (R).

What can you do?

The natural reaction is to spray or mow tansy when it is in full bloom. If either are done too late, seeds may still form and ripen, which makes treatment a waste of time and money. The best time to do spray treatment is in the spring before the plants bolt. Mowing can cause plants to perennate (become short-lived perennials), so the same plant grows back next year. For small or accessible infestations, these control options may work well.

The best option is to promote a healthy stand of grass. Avoid overgrazing. The biological control agents mostly weaken the weeds, which then succumb to competition with other desirable plants.

At some sites, outbreaks of field mice (*Microtus* species), gophers and moles can cause sufficient disturbance. The rodents' tunnel mounds help spread tansy seed and these animals eat pasture grasses but leave the tansy to grow and spread. Raptor perches and mowing the grass down to increase predation can help. Use of rodenticides have not been evaluated to control rodent-caused outbreaks.

Biological Controls

Landowners often ask questions such as, "I used to have cinnabar moths, now I need more. What do I do now?" Biological control sites are usually reserved for large infestations and rough terrain, where other controls are difficult or too costly. At nearly every site we have checked we have found all the biocontrol agents already there and just beginning to build up their populations. This is better than if there were none, as it would take longer to re-achieve control at those sites. The insects were so widely redistributed, that it is very rare to find sites where they do not occur. If the insects are present, it may take several years for them to build up and control the weed. If the land manager cannot wait that long and attempts to reduce the grazing pressure on infested areas, then other control measures should be taken. Some land managers have fenced off the more infested acreage to allow the insects to build up and control tansy ragwort. The insects can then disburse from those areas into nearby infestations.

Some landowners can graze the tansy with sheep since they are resistant to tansy ragwort poisoning. The sheep can precondition a pasture before allowing cattle to graze. The management threshold at which one should take action to control tansy is when it exceeds one plant per square yard, and covers more than ¼ of a pasture.

Are Biocontrols Present?

It is important for landowners to check and see if they have the biological agents present at their infestations. The colorful red and black *cinnabar moths* can be seen flying around in May and June, and their inch long black and orange-banded larvae in June – July, later at higher elevations. The larvae defoliate the plants and work best at large infestations. Heavily attacked plants are stripped of leaves and flowers. Some plants may regrow and produce late flowers when enough moisture is present in the late summer.


Cinnabar moth (L) and larvae (R).

The *ragwort flea beetle* is the real workhorse of the tansy ragwort biocontrol program, but fails to get the credit because it is small and active in the fall during the rainy season. The 1/8 inch adults are golden in color, and hop like a flea when disturbed. Their typical feeding damage is recognized by the BB-sized shot holes in the older leaves. Adult feeding on rosettes during the winter can actually kill smaller rosettes. The larvae feed in the root crown, and often in the leaf stalks, before they mature in early summer and pupate in the soil litter. Sites where flea beetles were released achieved over 90% control within 7 years.


Tansy ragwort flea beetle (L) and shot hole damage (R).

The *ragwort seed fly* attacks developing flower heads, where a single larva in a seed head destroys most all of the seeds. The fly only attacks the early developing seed heads and rarely attacks more than 10-40% of the seed heads, thus it is the most ineffective biocontrol agent. Damage is noticed mostly by the frothy spittle that emanates from an attacked flower head.

Ragwort seed fly adult (L) and spittle from attacked seed head (R).

Reduce Grazing Pressure

If you are planning on using biological control, the best thing to do is to reduce the pressure on the desirable pasture grasses and allow the plants and insects to go through their natural cycles undisturbed. This seems counterintuitive, but the insects need the plants to survive, and many sites which are mowed and sprayed often return with tansy, if grazing pressure is not reduced. An important thing to do is to look around the area and see where tansy ragwort is *not* a problem, then try to replicate the management from those sites. Often we find the tansy is within a fence line, indicating the infestation is a representation from the past several years of management. The seeds of ragwort are rarely dispersed more than 10-30 feet from the parent plant. Most infestations arise from seeds stored in the soil bank, which can remain viable for over 10 years. In wet years, ragwort can increase 10 fold from the previous year. At most sites, biological control agents have reduced infestations within a two year period.

Update provided by Oregon Department of Agriculture, Noxious Weed Control Program; edited by Amy Peters, Livestock Agent.

For more information contact: the Noxious Weed Control Program of the Oregon Department of Agriculture at **503 986-4621**.