



Weevils – Frequently Asked Questions

Q: SHOULD I SPREAD EACH RELEASE OVER A LARGE AREA?

A: No, concentrate each release. Your goal is to get the beneficial insect colonies established in the areas you have set aside for biological control.

When starting any population in a new area, you need enough numbers to start with so you can withstand potential mortalities, but still have enough individuals left over to continue to build the population.

With herbicide, you take a finite amount of material and dilute and spread the material over a large area. When introducing a biological control agent, one takes a finite amount of material (insects) and concentrates it in specific areas. In the initial releases, one wants to concentrate the insects so the insects can continue to find each other to mate and reproduce. Also, this allows one to more easily check for the insect in future years and for later redistribution to new areas.

Q: HOW QUICKLY DO THEY WORK?

A: Even in the most successful of cases, years are required before an insect can catch up with an exotic weed species. It is not a quick fix, but a permanent, self-perpetuating weed control tactic.

Keep in mind that it is the larvae that does the damage, not the adults, so control of the thistle won't really start until the spring after release. You will see no difference in the establishment year. The next year you may start to see a slight thinning the thistle, but the third year is when you should really start to notice a difference.

Literature research has shown that, upon release at new locations the weevils will spread slowly. In field studies in Canada, they spread on average 90 m in 6 years. Infestation at several initial release sites located in Bozeman, Montana (where WCFA import the weevils from) was slow to expand in the first few seasons, and after ten years weevils were found 9 km from these releases.



2010

(Release site near Lake Isle, AB)



2013

Q: HOW CAN I TELL THEY ARE WORKING?

A: There are several ways to tell if the weevils are being effective. First, place a stake into the ground at the release site, so you have a point from which to measure the thistle populations. Take pictures every year to have a visual point of reference, over time you should notice a change in the plants species at the release site; thistle numbers should decline and other plant populations should increase. Another option is to conduct plant counts before you release the weevils and yearly after that.

If you want to check to see if the bugs are present and breeding, you can pull a few individual plants (look for plants that show outward signs of being unhealthy, like blackened stems) and slice the stems open lengthwise. You may find larvae present, or just the damaged plant.



Q: ARE HERBICIDES COMPATIBLE WITH BIO-CONTROL?

A: Yes and no. Each weed and beneficial insect has specific, case by case, situations where one can integrate herbicides and bio-control. For most cases, while herbicides may not kill the bio-control agents, the damage done to the host plants prevents the insects from completing their development cycle. In other words, if all of the weeds die, then the insects won't have anything to live on.

To integrate insects with herbicides, we recommend first releasing insects on an area away from livestock, and that is not mowed or sprayed. Then, at least two years should be allowed for the insect populations to build up. If herbicides are to be used at all, it should be after these natural enemy populations have increased. Even then, timing of spraying is critical to minimizing the damage to the insect populations.

Q: WHAT HAPPENS TO THE INSECTS AFTER THE WEEDS ARE GONE?

A: Sorry, but your weeds may never be eradicated. In the most successful examples of biological control there are always a small number of plants that do not fully succumb to the attack of the beneficial insect. This is good. It allows the insect population to sustain itself during years of low weed density. Once the weevils have exhausted a thistle patch, they will migrate to look for more food.

Q: HOW IMPORTANT IS COMPETING VEGETATION IN SUCCESSFUL WEED CONTROL?

A: Biological control insects alone are not the answer. Without healthy stands of desirable vegetation to take the place of undesirable weeds, bio-control cannot be successful. As the insects reduce the weed population, useful plants take their places and gain a competitive advantage. Together, bio-control agents and competing vegetation will reduce weed infestations. Encouraging desirable plants, by re-seeding or reducing grazing pressure, will greatly help the insects do their job.