

REFUGE REPORT

Spurge Beetles Help Refuge Win War On Spurge

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The next time you're traveling down the road, please take a look around and see some of the gifts Mother Nature gives us. You could see a Western Meadowlark perched on a fencepost calling out his territory, or maybe some ducks dabbling on a pond. These are gifts that entertain and benefit humankind. Mother Nature is not always so kind though, she also grants us with some not-so-beneficial gifts. One of these things would be leafy spurge. To the untrained eye leafy spurge could just be another pretty yellow flower, but it's much more.

Leafy spurge is native to Europe and Asia, and is an introduced invasive species in our area. Natural enemies keep leafy spurge in check in Europe and Asia but we don't have those agents here. "Spurge" grows very well in our area because it emerges in the early spring and gets a head start on the native vegetation. The leafy spurge grows a very extensive root system and with the combination of an early start, it dominates and takes over very quickly. The roots of the plant are where the majority of the nutrients are stored and this is what helps the plant survive through hard times. With an extensive root system like it has, spurge is very hard to get rid of. It just keeps coming back.

Trying to control the spurge has become a major problem. Millions of dollars are lost every year by the effects of spurge. Loss of grazing and hay production, along with the costs of control, like spraying with herbicides, is where the money disappears. Biological control seems to be the key, and it is becoming more common in all areas. An excellent biological control agent for leafy spurge is the leafy spurge flea beetle. These

are beetles that control spurge in its native lands. The use of the *Aphthona* flea beetles, after extensive testing in their homeland of Europe and Asia, started in 1985. This is when the first of six species was approved and released. Ranging in size from 2 to 3.5 millimeters the flea beetles like to hang out in groups. They tend to congregate when feeding, mating, and egg-laying. This is what makes them easy to collect and release into new spurge sites.

The life cycle of the flea beetles is surprisingly short for its effectiveness. The beetles winter in the soil as a larvae and as the soil temperature rises in April and May the larvae wake up from their dormant state. While the larvae are awake they feed on the roots. Then they pupate in the soil in late May to mid June. The adults come forth in July and tend to live for about 40 to 60 days. Adult beetles feed on flowers, leaves and stems of the spurge plant. They also mate and lay eggs during this time. When the eggs hatch the larvae will feed, and as the weather diminishes into the cooler days of fall they take refuge in the soil near the roots of the plant.

At the Medicine Lake National Wildlife Refuge we have been using flea beetles as a biological control agent for leafy spurge since 1989. One of the wonderful things about the beetles is that they will not harm any other plants in the area. They will only feed on spurge and if they have no spurge to feed on they will simply die. Since 1989 over one million flea beetles have been released on the refuge and neighboring lands that contain leafy spurge. It took quite a few years for the beetles to get established but we are now seeing some great success. The test netting and spurge measurements from this summer show that the populations of flea beetles are increasing in size and the amount of spurge cover is decreasing in many areas.

Without a doubt the flea beetle is a key to biological control of leafy spurge in our area. In the long run the flea beetles are an inexpensive and efficient way to control leafy spurge and have no ill-effects on our environment. People interested in obtaining flea beetles to release on their land are welcome to contact Mike Rabenberg at the Medicine Lake Refuge for more information.