

The lily leaf beetle is back

By Shauna Dobbie



Photo by Ulysses

Scarlet lily beetle (*Lilioceris lili*).

The lily leaf beetle or LLB (Latin name: *Lilioceris lili*) is a destructive pest that poses a significant threat to lily (in the *Lilium* genus) and fritillary (*Fritillaria*) plants. Native to Europe and Asia, this bright red beetle has become an invasive species in North America, causing extensive damage to both ornamental and wild lilies and fritillaries.

It is easily recognizable by its vibrant red colouration, measuring about 1/4 to 1/3 inch in length. Its life cycle begins in early spring when adults emerge from the soil and lay clusters of orange eggs on the undersides of the leaves they are going to devour. The larvae, which are orange with black heads, hatch within a week and begin feeding voraciously on the foliage. These larvae are not attractive; they often cover themselves in



their own excrement, creating a protective shield against predators.

You may wonder why the predators are concerned about the feces because birds and insects aren't usually repelled by such things; that's more of a human reaction. It's suspected that the feces contain toxins from the plants the larvae have been eating.

After a few weeks of feeding, they

drop to the soil to pupate, emerging as adults in late summer to continue the cycle.

The feeding activity of both adult beetles and larvae can decimate lily plants. They consume leaves, stems, buds, and flowers, leading to stunted growth, reduced flowering, and, in severe cases, plant death. This pest's presence has significantly impacted ornamental gardens and commercial lily production.

Eradication and control efforts

You can use a couple of techniques to get rid of LLB in your garden but they all have issues.

1. Manual removal. Examine your lilies and fritillaries for red beetles or larvae. If you find any, get to work. Pick off the beetles and larvae and dump them into a bucket of soapy water. The

Plants affected

Asiatic lily (*Lilium asiatica*)
Canada lily (*Lilium canadense*)
Checkerboard fritillary (*Fritillaria meleagris*)
Crown imperial (*Fritillaria imperialis*)
Easter lily (*Lilium longiflorum*)
Formosa lily (*Lilium formosanum*)
Oriental lily (*Lilium orientalis*)
Persian lily (*Fritillaria persica*)
Stargazer lily (*Lilium* 'Stargazer')
Tiger lily (*Lilium superbum*)
Turk's cap lily (*Lilium martagon*)



Photo by Drahomir



Photo by Francisco Walter-Schultes



Photo by Luis Miguel Bernal-Sanchez

Lilioceris lili larva.

adults will typically jump off the plant and lay on their backs in the soil, where they are hard to see. This method is labour-intensive but effective in small gardens or for low-level infestations.

2. Chemical control. Products containing imidacloprid (a neonicotinoid) or neem oil (not approved for pesticide use in Canada) have shown efficacy. However, chemical treatments require careful application to avoid harming beneficial insects and the environment.

3. Cultural practices. Keeping a tidy garden can help reduce LLB infestations. This includes removing plant debris in the fall to eliminate overwintering sites. Many gardeners prefer to leave dead plants standing for winter interest and for the homes for beneficial insects. You can also loosen up the top couple of inches of soil around your lilies after the first few frosts of fall to capture some beetles.

Biological controls are used on a wider scale through releasing the beetle's natural enemies. Two parasitic wasps, *Tetrastichus setifer* and *Lemophagus errabundus*, specifically target LLB larvae. These wasps lay their eggs inside the larvae, eventually killing them.

Campaigns in Canada have been very successful at reducing LLBs. However, complete eradication remains challenging due to the beetle's ability to rapidly reproduce and disperse. Also, as the predators have been successful at reducing LLB, they have found themselves with nowhere to lay their eggs, so the predators' population dwindled. That resulted in more beetles growing to adulthood. Populations of prey and predator have cycles like that. With more LLB, the predators will rebound.

We should accept boom and bust years as part of a healthy environment. 🐾

Not a lily

Some favourite garden ornamentals have "lily" in their common names, but they aren't *Lilium* and aren't affected by lily leaf beetle. These include:

African lily (*Agapanthus*)
Calla lily (*Zantedeschia*)
Canna lily (*Canna*)
Cobra lily (*Arisaema*)
Daylily (*Hemerocallis*)
Foxtail lily (*Eremurus*)
Lily of the valley (*Convallaria*)
Peace lily (*Spathiphyllum*)
Peruvian lily (*Alstroemeria*)
Pineapple lily (*Eucomis*)
Toad lily (*Tricyrtis*)
Torch lily (*Kniphofia*)
Trout lily (*Erythronium*)
Water lily (*Nymphaea*)

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