e-GRO Alert

Ornamentals

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Consider the Lilies: Lily Leaf Beetle

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When asked about one of their most annoying garden pests, our volunteer gardeners are unified in quickly singling out lily leaf beetle for the most earnest and precise invective. As damaging as the bright scarlet beetles are beautiful, I tend to agree.

A Eurasian species introduced to Canada and found near Montreal in 1943, lily leaf beetle (LLB) then was discovered in the US almost 50 years later when found in Cambridge, Massachusetts in 1992. It is now established through much of southern Canada and the northeastern US extending west to Minnesota. There is evidence it can be spread in infested bulbs to new areas though the adults are also capable of flying, necessary when host plants may be widely scattered. A pest of true lilies (*Lilium* spp., ornamental cultivars and native) and *Fritillaria* (daylilies are not hosts), the brightly colored adults are red above with black antennae and undersides, are about 1/2" long and emerge in spring as lilies poke above ground in April. Eggs are bright red and laid in rows in groups of 12 or so under leaves. Larvae pass through four stages (instars), covering themselves with frass apparently for protection (gardeners often don't recognize them or are put off by the camouflage), though some LLB natural enemies actually use this to detect their prey. Larvae and adults feed on flowers, buds, and leaves, causing heavy defoliation and leaving holes in flower parts; damage spoils the plant's appearance and can kill lilies - as well as sales of lilies. There is one generation a year; the second-generation adults emerge in late summer will continue to feed before moving to overwintering sites.

Lily leaf beetle adult with eggs.

Insecticides can be effective against larvae and adults but with gardeners generally disinclined to apply them, we suggest regular inspection and hand-removal. The adults are easy to spot and drop quickly when disturbed; placing a tray beneath to catch them uses their strategy conveniently against them. For the squeamish, the larvae can be blasted off with a jet of water and very young larvae are unlikely to survive off the plant or find their way back on. Check under leaves for the bright red eggs - crush or remove.

Thanks to Dr Lisa Tewskbury and Dr Richard Casagrande of University of Rhode Island Dr. Naomi Cappucino of Carleton University, the future for lilies is looking much brighter, less so for lily leaf beetles. Several biological controls (parasitoids) were evaluated for specificity against LLB and following rigorous testing and receiving USDA and state approvals, three were released (*Tetrastichus sertifer* first in 1999, *Lemophagus errabundus* and *Diaparsis jucunda* first in 2003; additional releases made in subsequent years including in Canada). They now appear to be established and spreading at the rate of 2 - 4 miles per year, with strong evidence they are responsible for bringing LLB populations down around New England and eastern Canada, wherever they go. Read about the authors' great success story with LLB biocontrol in their chapter of the USDA Forest Services book, *Contributions of Classical Biological Control to U.S. Food Security, Forestry, and Biodiversity*: https://bugwoodcloud.org/resource/files/25338.pdf or get the shorter take in the brochure posted at the University of Rhode Island website https://web.uri.edu/biocontrol/projects/lily-leaf-beetle/.

Lily leaf beetle larva covered with frass, being attacked by the parasitoid wasp *Tetrastichus sertifer.*

Lily leaf beetles and damage (Photo courtesy Karen Snover-Clift).

Their bright color makes lily leaf beetles easy to spot on plants.

References

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Lily leaf beetle larvae, frass removed from one at left.

Lily leaf beetle parasitoid wasp *Lemophagus errabundus*.

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