

# Scarlet (or Red) Lily Beetle

**Summary of following articles:** (C. West, June 2010)

"This beetle reproduces rapidly and can strip a lily plant in full flower in a matter of days." This beetle affects Asiatic, Oriental, Turk's cap lilies & fritillaria bulbs. Daylilies, aren't affected. To control these dastardly beetles you need diligence, especially in the first 2 seasons you spot it. It's possible to get them under control in your garden with diligence.

## Prevention

Soak all new bulbs in bleach & water (1:10) for 30 min., rinse well before planting. Spread is very rapid with the marketing of pre-potted plants. Since they can fly a great distance, you still have to check your plants.

## Hand Pick Adults, Larvae, Remove Eggs

Handpick and kill adults, eggs and larvae. Usually they're on the leaf's underside, starting with the bottom leaves. Adults quickly flutter or slide off the plant belly-up and crawl into the dirt when disturbed, so cup the beetle top and bottom and squish on the cement. If there are large numbers of beetles, you can place white paper towels under the plant and shake. The larvae can slide off as well. I wear disposable gloves and knock the beetle and larvae into a bowl of soap mix to drown. I use a stick, which I also use to bend the leaf back to see the underside. Wipe leaves with eggs on both sides with a soapy cloth. Check each day after the first cleaning of leaves. Missed eggs and larvae become adults again in 3-6 weeks.

## Spray Alternative

If handpicking is not possible, spray every 5 days for a month after first sighting the beetle, alternating spraying for larvae and beetles (see below). According to White Flower Farm, in NE adults that re-emerge from the soil (starting about mid-June) do not lay eggs in July's heat but feed until they hibernate under ground in the fall. Resume picking if you see any of this second generation. Note: all the sprays, except Neem are harmful to bees.

### Spray for Eggs, Larvae

Spray Neem oil or, if ineffective, spinosad [like Monterey Garden Insect Spray] immediately. A female can lay up to 450 eggs in her lifetime of two seasons.

### Spray for Adult Red Beetles

Imidacloprid [like Merit] (URI), Pyrethroid [like Permethrin] (UMass Extension), or 5% Rotenone (White Flower Farm).

## Pre-emergence

When lilies are 1" above the soil in spring, saturate the soil around the drip line with Merit (to penetrate about 3" into the soil). This will get adults before they emerge. 20% ammonia solution may be an alternative. Check and treat immediately if you spot leaf holes or evidence of the beetle.



If your lily leaves have holes, you probably have scarlet lily beetles, a scourge in the UK since 1940, and here on the East Coast of the U.S. since arriving in 1992 in Cambridge.

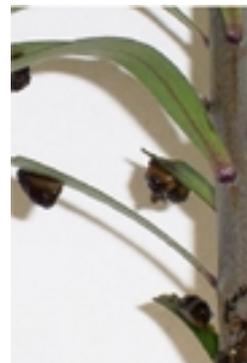
Do not wait to take action. The scarlet beetle reproduces rapidly and can strip and kill a plant in days. Months cited here are based on beetles in Connecticut.



Adult beetles look like narrow ladybugs. They emerge from the soil in spring (March-May), mate and lay eggs, usually in May.



Eggs, usually on the underside of the leaf, hatch within 7 days or less, starting orange and turning brown right before they hatch.



The eggs develop into larvae that eat the leaves (for ~16-22 days) and cover themselves in their own poop to avoid their few predators (wasps).

The pupae then go underground for 20 days before the beetle re-emerges in mid-June. Eggs are possible then, but less likely.



## Growing Guide

### Lily Leaf Beetles

The lily leaf beetle is a serious pest of Lilies. Left unchecked, it can devastate a planting with frightening speed. The beetle is believed to be native to Asia, but it is now common in many parts of Europe. It made its way to the Boston area in 1991 or 1992, possibly as a stowaway on bulbs shipped from Holland. The beetle is becoming common in Boston and neighboring towns, and sightings on Cape Cod, in Worcester, and in southern New Hampshire confirm fears that the infestation is spreading. There are also reports that the beetle is in the Montreal area.

#### Identification

The adult beetle is strikingly beautiful. Its body is bright scarlet, its head, antennae, legs, and underside jet black. It measures 1/4–3/8in long. If squeezed gently, the beetle makes a squeaking sound, which is probably intended to scare off predators.

In contrast to the adults, the larvae (immature beetles) are ugly. They have swollen orange, brown, yellow, or green bodies and black heads, and they have the repulsive habit of carrying their excrement on their backs. They look more like bird droppings than beetle grubs. The larvae are smaller than the adults, but they cause much more damage. They generally begin eating at the base of the plant and work their way up, devouring all but the midribs of the leaves. They also feed on the buds and flowers. Where populations are high, the larvae and adults, working together, reduce Lilies to little more than naked stalks in short order. A plant may not be killed outright by an attack, but without foliage, it cannot sustain itself for more than a year or two.

Lilies and Fritillaria are the preferred food of the lily leaf beetle, and it will only lay eggs on these plants, but there are reports that it will feed on other plants (albeit less heavily). They include Polygonatum (Solomon's Seal), Potatoes, Alcea (Hollyhock), Hosta, Convallaria (Lily-of-the-Valley), Campanula (Bellflower), and Nicotiana (Flowering Tobacco).

#### Life cycle

If you determine that you have lily leaf beetles in your garden, you need to understand the life cycle of the insect before you take action. The beetles overwinter as adults in the soil and in plant debris and emerge in spring (sometime in late March or April). As temperatures warm in May, the females begin laying orange-red eggs, 4–10 at a time, in irregular lines on the undersides of the lower leaves. The eggs hatch in a matter of days, and the voracious larvae begin eating immediately. The larvae feed for about 20 days, then enter the soil to pupate (transform themselves into adults), which takes another 20 days. The new adults emerge and feed until fall, but the females among them will not lay eggs until the following spring. At the approach of cold weather, the beetles seek cover for the winter. They reemerge in spring, and the cycle begins anew.

It's important to note that lily leaf beetles do most of their damage between late May and mid-July. The adults prefer cool temperatures; they stop laying eggs in July, and they feed less heavily in the heat of summer.

## Control

If you have only a few Lilies in your garden, we recommend that you try hand-picking the colorful adults, pushing them off the leaves into a jar of soapy water, where they soon drown. (Most people recoil at the thought of touching the slimy larvae, but if you want to wear rubber gloves and handpick them, by all means, do so.) Begin picking the adults on a weekly basis as soon as they appear in spring and keep picking until they become scarce in summer. Unless the beetles are all over the neighborhood, you should be able to eradicate them from your garden in a year or two.

If you grow a lot of Lilies and hand-picking isn't practical, you can spray your plants with insecticides. The least toxic and most environmentally friendly control for the lily leaf beetle is Neem, a newly developed insecticide made from extracts of the Neem tree, which is native to parts of Asia. Neem kills the larvae and repels the adults. It is most effective on newly hatched larvae and must be applied every 5–7 days after the larvae begin to appear. An alternative to Neem is 5% Rotenone, which is also a botanical insecticide. It is effective against both the larvae and the adults. (Apply all pesticides in strict accordance with the package instructions.)

## E-mail to West End Gardeners from C. West, 6/23/10

Hi Gardeners-

The second generation of red beetles are back (they attack Fritillaria as well). Toni and Mildred have found several, and I have found one. The second generation doesn't usually lay eggs (because of summer heat) - just eats and goes into the ground in the fall, ready to emerge in late March-early April.

White Flower Farms has the best short explanation of this that I've seen: above, or [click](#) .

NOTE from WFF: "Unless the beetles are all over the neighborhood, you should be able to eradicate them from your garden in a year or two." So don't give up on lilies just yet.

If you can't pick the beetles and drown the larvae on your lilies in April-May, here is spray info that I came back from Nature Works organic garden. I was told to alternate spraying the tops and bottoms of leaves w/ these, alternating every 5 days for the period of a month from first spotting the red beetle, in order to break the cycle:

- Pyrethrin - for the adult beetles
- Monterey Garden Insect Spray - [spinosyn A and spinosyn D] for the larvae (saturate ground around drip line of leaves, as well.)

You can try Neem oil (Nature Works hasn't had success w/ Neem Oil). If that doesn't work, WFF recommends 5% Rotenone, which is also a botanical insecticide. It is effective against both the larvae and the adults, or try the Nature Works formula, above.

At this second-cycle point we have the choice of:

- pick off the beetles and squish (cup the beetle or it will tumble to the ground or flutter away), or
- 5% Rotenone, or Pyrethrin – both harmful to bees. See end for info on these insecticides.

Please pass this along to any gardeners you know - especially in the neighborhood. Perhaps we can achieve minimal red beetles here.

Carolyn

## ***Other Sources:***

### **URI Factsheets: Lily Leaf Beetle**

<http://www.uri.edu/ce/factsheets/sheets/lilyleafbeetle.html>

### **IVillage Garden Web**

<http://faq.gardenweb.com/faq/lists/neweng/2002040522017914.html>



### **Scarlet lily beetle *Lilioceris lili***

[http://www.bbc.co.uk/gardening/advice/pests\\_and\\_diseases/nonflash\\_index.shtml?scarlet\\_lily\\_beetle](http://www.bbc.co.uk/gardening/advice/pests_and_diseases/nonflash_index.shtml?scarlet_lily_beetle)

### **The Lily Leaf Beetle**

[http://www.google.com/url?q=http://www.bbc.co.uk/dna/h2g2/A13857014%26clip%3D1&sa=X&ei=S5MBTKLbBsL48Abnn7nfDO&ved=0CBcQzgQoADAA&usg=AFQjCNEjpLzWvuI6eduKgS9f22\\_5Kq4QKw](http://www.google.com/url?q=http://www.bbc.co.uk/dna/h2g2/A13857014%26clip%3D1&sa=X&ei=S5MBTKLbBsL48Abnn7nfDO&ved=0CBcQzgQoADAA&usg=AFQjCNEjpLzWvuI6eduKgS9f22_5Kq4QKw)

### **Scarlet lily beetle**

From Wikipedia, the free encyclopedia [http://en.wikipedia.org/wiki/Scarlet\\_lily\\_beetle](http://en.wikipedia.org/wiki/Scarlet_lily_beetle)

### **Lily Beetle Survey**

<http://www.rhs.org.uk/science/plant-pests/lily-beetle>

### **Controlling Red Lily Leaf Beetles**

<http://www.vpr.net/episode/48541/>

### **Red Lily Beetle**

Down Garden Services: [http://www.dgsgardening.btinternet.co.uk/lilybeetle\\_red.htm](http://www.dgsgardening.btinternet.co.uk/lilybeetle_red.htm)

### **Control of Lily Beetles**

<http://lilybeetle.co.uk/Control/Control.html>

### **Lily Beetles Forum**

<http://forums.gardenweb.com/forums/load/cangard/msg0319182528924.html>