

## Fact Sheet (June 5, 2015)

### Viburnum Leaf Beetle (*Pyrrhalta viburni*)

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The viburnum leaf beetle (VLB) is a relatively new high-consequence invasive insect that has found its way to Illinois. The VLB damages many types of viburnum, causing defoliation that may lead to death. This insect of great concern, as viburnum is a very common ornamental shrub found in many home landscapes in our area.

The VLB is native to most of Europe. It was first found in the United States in Maine in 1994. The VLB was found in Illinois in 2009 (specifically in Cook County). In 2012 and 2013 there were increasing reports in Cook County and the beetle was also found in DuPage County. In 2014 the number of reports increased in Cook County and many reports indicated defoliation in late summer. Some of the 2014 Cook County reports came from as close as Winnetka, only five miles from the Chicago Botanic Garden. Once the VLB becomes established in an area, it is most likely there for good, like the Japanese beetle invasion.

*Current distribution in United States: Maine, New York, Connecticut, Massachusetts, New Hampshire, Vermont, Pennsylvania, Ohio, Wisconsin, and Illinois (only Cook and DuPage Counties); and let's not forget Canada, where it first was discovered in North America.*

The Garden's Plant Health Care staff and volunteers have been monitoring the Garden's viburnum collection very closely. On June 2, 2015, viburnum leaf beetle was found for the first time at the Garden. Two separate discoveries were made. Both finds were on arrowwood viburnum (*Viburnum dentatum*), the beetle's preferred host (and high on our watch list).

If you live in the area, it is time to be on the lookout for this pest, and this starts by learning about the VLB.

#### **Host plants**

The VLB is host-specific and only feeds on viburnums. It favors European cranberrybush viburnum (*Viburnum opulus*), arrowwood viburnum (*Viburnum dentatum*), and American cranberrybush viburnum (*Viburnum trilobum*). All viburnum are susceptible, but there are less favored types such as Koreanspice viburnum (*Viburnum carlesii*), Judd viburnum (*Viburnum x juddii*), and Burkwood viburnum (*Viburnum burkwoodi*).

#### **Life cycle—one cycle per year**

- VLB lays eggs on twigs, and the eggs overwinter in that protected state.
- Eggs hatch in May soon after leaves have emerged.
- Larva feed on the undersides of leaves, causing a skeletonized look with only midribs and major veins left intact.
- Around mid-June, mature larvae crawl to the ground where they pupate in the soil (about ten days).
- In early July, adult beetles emerge and begin to feed on viburnum foliage. (Eight to ten weeks from egg hatch to adult emergence.)
- Adult beetles feed on foliage, causing irregular small circular holes; defoliation can occur.
- Adult beetles are active (feeding, mating, and laying eggs) until the first frost. Females lay their eggs on young branches in pinhead-sized holes they chew. These egg-laying holes are aligned in a straight line

vertically on the branch. The female lays about five eggs in each hole and then caps the hole with a mound of wood fiber, excrement, and saliva. Each female will lay about 500 eggs.

### Visual Identification

- Larvae: Mature larvae are just less than 1/2 inch long. Their primary color is pale yellow, green, or orange. As the larva matures, it develops a distinctive pattern of black spots and dashes, and has a black head and feet.
- Adults: The adult beetle is about ¼ inch long and brown in color.
- Eggs: The eggs are not visible. They are covered by the female immediately after egg laying on small viburnum branches.

### Management

#### Monitoring

- Inspect viburnums in the winter for visual signs of egg laying. Look for off-color bumps on smaller twigs all in a straight line.
- Inspect viburnums for larvae just after leaf-out. Look for very small larvae on the underside of leaves.
- Inspect throughout the season for signs of feeding damage and defoliation.

#### Natural control / non-spray options

- Plant resistant viburnum types.
- Tolerance: Low levels of VLB are not very damaging. Remember that high levels, along with defoliation, can kill a viburnum if it happens year after year.
- Prune out branches that are found with egg-laying evidence in the winter.
- Encourage or release natural enemies such as ladybugs and lacewings that will feed on the young larvae.
- Pick them off by hand. This is only practical if you have a small number of shrubs.
- Knock off adult beetles into a container of soapy water. When a branch is disturbed, the beetles react by falling off, so hold a bucket of soapy water under the branch and then gently shake it.

#### Applied control

- Organic options
  - Spray the young larvae very early on with an insecticidal soap (follow label directions carefully). Don't expect 100 percent control with a soap spray.
  - Spray the young larvae very early on with a pyrethrin (follow label directions carefully).
  - Spray the young larvae with a microbial product called Spinosad (follow label directions).
- Spray a synthetic insecticide when larva is beginning to feed and cause damage (follow label directions carefully). Insecticide spray treatments for adults are not recommended for management.
- Avoid using systemic neonicotinoid product as they may affect the pollinators, such as bees.