Viburnum Leaf Beetle in Ohio

The viburnum leaf beetle (VLB), *Pyrrhalta viburni* (Paykull), native to most of Europe, can cause severe damage and possibly death of ornamental viburnums. The VLB is listed as a secondary target pest species by APHIS for Cooperative Agricultural Pest Surveys. VLB was first discovered in North America in Ontario, Canada, in 1947. Since then, VLB has spread into the Canadian Maritime Provinces and portions of Maine, New York, Pennsylvania, Vermont, and Ohio. In 2001, VLB was observed infesting plants in Erie, Pennsylvania.

In 2002, VLB was discovered in the far northeastern corner of Ohio in the town of Conneaut (Viburnum Leaf Beetle Survey, 2002). Because of climatic similarities with its native habitat, and a preferred host range that includes *Viburnum* species commonly used in ornamental plantings, VLB is considered to have a high probability of becoming established and spreading in Ohio. Heavy infestations by VLB could defoliate shrubs, cause dieback, and eventually kill plants.

Costs to homeowners, parks, arboretums, municipalities, and nurseries to manage heavy infestations of VLB and to replace killed plants could be high. Additionally, Ohio's nursery industry is the nation's fifth largest. Quarantines imposed, as a result of establishment of VLB in Ohio, would represent an economic burden to the many growers who export nursery stock from Ohio. Because of the potential economic impact to both the public and the nursery industry in Ohio, it is important to maintain surveillance on the spread of VLB in Ohio.

Identification Characteristics

VLB adults are ¼" to 3/8" long, the females being larger than the males. The adult has a golden-brown coloration that has a sheen when the beetle is held in the sun. The sheen is produced by a thick, golden-grey pubescence. The head, thorax, and elytra (wing covers) are generally brownish, but the shoulders of the elytra are darker.

Larvae of the viburnum leaf beetle are about ½" long when mature, worm-like, and feed gregariously on viburnum foliage. Larvae skeletonize leaves in the spring (May-June); adults chew holes through leaves in the summer (July-September); and female beetles produce characteristic oviposition marks on terminal twigs. The females produce characteristic egg "caps" arranged in straight rows, seen throughout the summer, fall, and winter months. All of these visual indicators are characteristic of a VLB infestation.

Life Cycle, Habits, and Host Plants
VLB overwinters in the egg stage. By early to mid-May, the eggs hatch and the larvae feed gregariously on the underside of tender, newly expanding viburnum foliage. Larvae skeletonize viburnum foliage, leaving only midribs and major veins intact.

By early to mid-June, mature larvae drop to the ground, enter the soil, and pupate. By early July, adults emerge and begin to feed on viburnum foliage. Complete development from egg hatch to adult emergence generally takes eight to 10 weeks.

Adult feeding damage consists of irregular circular holes. From late June to early July until October, females chew holes (1/8" x 1/8") in small branches or twigs of viburnum (generally the current year's growth, but occasionally in the previous year's growth) for oviposition. The oviposition sites are often arranged in a straight row on the under surface of the terminal twig.

Several eggs (average of five) are inserted into each cavity. In excavating each oviposition site, the female chews away bark, splits the wood into small fibers that remain attached to the upper circumference of the area chewed away, and hollows out the egg cavity by excavating the pith. After filling the cavity with eggs, the female closes the opening by making a "cap" or lid composed of excrement, chewed bark, and cement from her collateral glands and pushing it up beneath the cluster of previously shredded wood fibers. A female can lay up to 500 eggs. From summer through fall, adults will continue to be active, mating, laying eggs on terminal twigs, and feeding upon foliage until the first killing frosts. There is one generation annually.

The VLB is restricted to feeding on species of Viburnum. It exhibits a strong preference for the popular arrowwood viburnums (*V. dentatum*), European cranberrybush viburnum (*V. opulus*), American cranberrybush viburnum (*V. trilobum*), and Rafinesque viburnum (*V. rafinesquianum*). Other viburnums known to serve as hosts include Sargent viburnum (*V. sargentii*), wayfaringtree viburnum (*V. lantana*), nannyberry viburnum (*V. lentago*), and blackhaw viburnum (*V. prunifolium*). Particularly resistant species include Koreanspice viburnum (*V. carlesii*), Burkwood viburnum (*V. burkwoodii*), doublefile viburnum (*V. plicatum* var. *tomentosum*), Judd viburnum (*V.* x *juddii*), lantanaphyllum viburnum (*V.* x *rhytidiphylloides*), and leatherleaf viburnum (*V. rhytidiphyllum*).

Management Recommendations
The most effective means of control for small scale plantings is pruning and destroying infested twigs after egg laying has ceased in the fall, anytime from October to April. When pruning is not practical, a number of pesticides may be effective in controlling VLB.

Home gardeners may use acephate, carbaryl, cyfluthrin, imidacloprid, or malathion. Spray when larvae first appear in early May for best results. If damage from adults is excessive, a second application in mid-to late-summer may be helpful.

Source: OSU Ext. Curtis Young