

CRANBERRY WEEVIL

Common Name: Cranberry weevil
Scientific Name: *Anthonomus musculus*
Order: Coleoptera (beetles and weevils)
Family: Curculionidae (the weevil family)

Cranberry weevils cause damage by laying eggs in developing flower buds, which are then fed upon by the weevil larvae. Though a serious pest on the East Coast, it rarely occurs at damaging levels in Wisconsin.

Biology and Damage

Host Plants:

Cranberry, *Vaccinium macrocarpon*
Highbush blueberry, *Vaccinium corymbosum*
Huckleberry, *Gaylussaria resinosa*
Black chokeberry, *Aronia melanocarpa*

Description and Diagnosis:

Eggs are deposited singly between the petals of unopened blossoms. They are pale yellowish-white, 0.4-0.5 mm, smooth, and ovoid. Weevil larvae are legless, yellowish-white and are 2.4-3.1 mm long. The pupae are originally pale yellow, 1.9-2.5 mm, but eventually turn brown. The adults are 1.5-2.0 mm, with a dark brown head, a reddish-brown abdomen, fine hairs on the body, and oval in shape. A distinguishing characteristic is the elongated snout.



Adult weevil; size 2 mm.

Economic Importance:

Although cranberry weevil is a serious concern on the East Coast, rarely have we seen it at levels in Wisconsin that require treatment.

Life Cycle:

The cranberry weevil overwinters as an adult under the winter flood on the beds. The adults become active again in early June when they begin to feed, seek a mate, and deposit the eggs in the blossoms. The eggs hatch throughout June and the larvae begin to feed on the internal parts of the flowers. They pupate within the damaged flower buds and the adults emerge in six days. This occurs during July and August. By mid-August, the adults begin searching the beds for hibernation sites. There is only one generation of cranberry weevil per year.

Environmental Factors:

There is evidence of parasitism but the extent is not known. The cranberry weevil is tolerant to flooding and cool temperatures. We are unsure why population levels in Wisconsin tend to stay very low naturally without the need for human intervention.

Damage/Symptoms:

Due to internal larval feeding on the unopened flower, the color changes from pink to orange and these flower buds will no longer produce fruit. The adults feed on the new leaves, unopened blossoms, terminal buds, and the berries. One to 30 holes can be drilled into a single fruit as they feed on the pulp of the immature berries. Feeding is characterized by the small visible holes on the fruit and by the small crescent-shaped black spots on the underside of the leaves. The adults also bore into the runners at the base which kills the vine and the vegetative buds turn black, resembling frost-kill.

Monitoring and Controls**Scouting Procedure/Economic Threshold:**

No traps have been developed for cranberry weevil; however, adults are readily picked up during sweep net sampling. Sweep sampling is most efficient on warm, calm, sunny days. Massachusetts has established an economic threshold of an average of 4.5 weevils per 25 sweeps.

Natural Control:

Cranberry weevil populations stay very low in Wisconsin without human intervention, indicating that some environmental factors are very important in providing natural control. However, because cranberry weevil has not been a problem in Wisconsin, no research has been conducted to determine the factors involved in natural control.

Cultural Control:

None known.

Biological Control:

Although cranberry weevil is known to have natural enemies, their overall importance is unknown.

Chemical Control:

Chemical control is usually not necessary in Wisconsin. On the East Coast, azinphosmethyl and chlorpyrifos are recommended for control if weevils are at threshold numbers. Controls are usually applied in June before the onset of the blossom period.

References:

- Dittl, T. 1988. A survey of insects found on cranberry in Wisconsin. M.S. Thesis, University of Wisconsin, Madison.
- Eck, P. 1990. The American cranberry. Rutgers. New Brunswick, New Jersey.
- Mechaber, W. L., and F. S. Chow. 1991. Rewriting the natural history of cranberry weevil. Cranberries. February. p. 5-8.

This information was prepared by Daniel L. Mahr, Professor and Extension Fruit Crops Entomologist, University of Wisconsin – Madison. It is revised and modified from the Pest Profiles section of University of Wisconsin Cranberry Crop Management software (CCM). November, 2005.

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