



Squash Vine Borer *Melitta cucurbitae* (Harris)



Alan Eaton, University of New Hampshire

Figure 1. A adult squash vine borer. (Note the wasp-like appearance of this moth) (Alan Eaton, University of New Hampshire)



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Figure 2. Vine slit open exposing the larva of the squash vine borer. (Clemson University, USDA Cooperative Extension Slide Series)

Description: The adult of the squash vine borer is a wasp-like moth (**Fig. 1**) having a 1 to 1½ inch wingspan, with metallic green forewings. The mature larva or caterpillar is a thick, white wrinkled worm (**Fig. 2**) with a brown head, and is about 1 inch in length. The eggs are dull red, 1/25th inch in diameter, and are found glued to the leafstalks and stems of squash vines. The pupa is dark brown, 5/8 inch long, and found in an earthen cell in the soil.

Injury: The larvae bore into the stems of squashes, pumpkins, gourds, cucumbers and muskmelons. Winter squash (in particular Hubbard), pumpkins, and zucchini are quite susceptible to borer damage. Infested vines at first exhibit wilting (**Fig. 3**), and later may be completely girdled, causing the leaves and stem beyond the point of attack to rot. This pest often causes damage in home gardens, but is considered a sporadic pest in commercial plantings of cucurbits.

An infestation may be detected by the presence of coarse, yellowish grains of frass (fecal matter from the feeding larva) that collect at the base of stems or on the ground under the vines. Later the frass becomes moist and shiny, and may be seen oozing from holes in the stems.

Life History: Adult moths emerge from the pupae about the time vine crops come up. In New York State this is usually during the latter part of June. The moths are active daytime flyers, and are often mistaken for wasps. Eggs are laid singly, and glued to stems and leafstalks near the base of the plant. The young borers enter the plant about two weeks later, and begin feeding on the inner tissues. The larvae feed for about one month. If an infected vine is split open, it will be hollowed out and partially filled with frass. Late in the season, borers may be found throughout the plant stem and in the fruits. When fully mature, the larvae leave the stems and make cocoons in the soil. The larvae usually overwinter in the

cocoons, changing to pupae the following spring.

Management: Begin scouting fields in mid-June. Fields heavily infested last year are more likely to have infestations this year. If frass is seen, stems should be cut open to confirm the presence of borer larvae. To reduce the number of borers for the next year, destroy crop residue after harvest, and rotate planting sites.



Figure 3. A squash plant exhibiting wilting symptoms due to squash vine borer infestation. (HGIC, University of Maryland)

Lightweight row covers can be used to protect plants until the vines come into flower. Remove covers at bloom time to allow for pollination.

Entomophagous nematodes, of the type used against stem borers, can be used to control larvae of the squash vine borer. Inject into the squash plant stem, following directions on the product label. An insecticide registered in 2009 for home garden use in New York State for squash vine borer suppression is kaolin clay. It is important to control larvae before they enter the stem, because once they enter the stem, insecticides have little effect. Direct the spray to the stems of the plants near the base. Begin prior to infestation (starting about June 20 for most of New York State) and apply every 5 to 7 days as per label instructions.

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The Pesticide Management Education Program (PMEP), in cooperation with the New York State Department of Environmental Conservation (NYSDEC), maintains a web site with a searchable database for pesticide products currently registered in New York State. Homeowners who have Internet access can locate currently registered products at <http://pims.psur.cornell.edu/>. Several different queries are available that will produce a summary for the product(s) that the system locates. If the system fails to locate the product in question, then that product is not currently registered in New York State. The database also provides a summary of important information related to every product currently registered. Two data fields “Status” and “Expiration Date” are provided in each summary. Products with a status of “Registered - Discontinued” are currently registered but will probably be discontinued for use, sale, and distribution in New York State after the date noted in the “Expiration Date” field.

This publication contains pesticide recommendations. Changes in pesticide regulations occur constantly and human errors are still possible. Some materials mentioned may no longer be available, and some uses may no longer be legal. All pesticides distributed, sold or applied in New York State must be registered with the New York State Department of Environmental Conservation (DEC). Questions concerning the legality and/or registration status for pesticide use in New York State should be directed to the appropriate Cornell Cooperative Extension Specialist or your regional DEC office. Read the Label before Applying Any Pesticide.

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