

Organic Squash

Vine Borer Control

By Barbara Pleasant April 16, 2013

Squash vine borers (*Melittia satyriniformis*) are one of the most common pests encountered when growing pumpkins or squash.

Squash vine borer larvae feed inside the thick stems of summer squash, winter squash and large pumpkins. Affected plants slowly wilt and die during the second half of summer. A native American insect, squash borers are rarely seen west of the Rocky Mountains, but are extremely common in the east. Organic controls for squash vine borers include growing resistant varieties, crop rotation, using row covers, passive traps, and surgical removal.



Many of our readers have reported that the most effective methods of organic squash vine borer control are crop rotation and growing resistant varieties, which includes butternut squash and a few varieties of pumpkin.

What Are Squash Vine Borers?

The larvae of a large, orange and black hawk moth, squash vine borers appear in early summer, after pumpkin and squash begin growing vigorously. The adult moths are often seen visiting the squash patch during the day, and especially at sunset. Eggs laid by the moths on the basal stems of squash hatch and the larvae bore into the stem, feeding exclusively on the inside. Squash borer adults are active for about 30 days in summer, or sometimes longer.

What Squash Vine Borer Damage Looks Like

Squash vine borer larvae feed by scraping away the spongy material inside stout squash stems, which eventually girdles the plants from the inside out. Wilting of affected stems gets worse each day until the stem dies.

Squash Vine Borer Life Cycle

Squash vine borers overwinter as mature larvae, hidden in the soil inside a tough cocoon. In late spring the larvae changes into an adult. The brightly colored adult moths often find mates in the garden, and females quickly begin laying eggs on the lowest sections of squash stems. The moths often survey plants by flying in a zigzag pattern before alighting to lay individual eggs. Female moths may return to the same plants to lay more eggs in subsequent days or weeks. The eggs hatch in a few days, and the tiny larvae immediately bore into the stem and begin feeding. As their size and appetites increase, sawdust-like

frass is pushed out of their entry holes. The larvae feed for four weeks or more, or until the host plant dies. Most climates have but one generation each year, which peaks in late July.

Squash Vine Borer Predators

Because squash vine borers feed inside stems, they are hidden from predators. The adult moths are sometimes consumed by birds and other daytime predators.

Organic Squash Vine Borer Control

Good organic control of squash vine borers involves using a combo of several different methods. Butternut squash and other varieties classified as *Cucurbita moschata* are naturally resistant to squash vine borers. At the other extreme, Hubbard type winter squash varieties are highly preferred, and can be used as part of a trap cropping scheme. Grow three healthy Hubbard plants in a mound, protecting them from squash bugs with row cover. In early summer, uncover the Hubbard plants and install a pheromone-baited squash vine borer trap, or surround the plants with small yellow pails two-thirds full of water. The adult moths are attracted by the color yellow, and often drop in and drown.

Meanwhile, grow your preferred squash and pumpkins under row covers until the plants begin to bloom. When the covers are removed, use pieces of row cover, tulle (wedding net) or aluminum foil to cover any sections of exposed low stem. Use a piece of masking tape to remove any eggs seen on plant stems close to the ground. Finding and removing scattered squash vine borer eggs is very difficult to do well.

If you are seeing moths among your plants or in yellow pail traps, ambush visiting moths in the early evening and bring them down with a butterfly net, badminton racquet or squirt of hair spray. The big moths have hairy bodies, so the sticky liquid stops them from flying, making them easy to collect and kill. An individual moth can lay more than 150 eggs in her lifetime, so nabbing only a few in a home garden can make a big difference.

Surgical intervention is often worthwhile if you have only a few plants. As soon as you see a hole with frass coming out of it on a low squash or pumpkin stem, use a sharp, narrow knife to make a slit in the stem near the hole. Use tweezers or forceps to remove the borers inside (there may be two of them). Then cover the stem with mulch. Once you learn through experience where borers lurk inside stems, you can simply poke straight pins into the stem to kill the larvae inside as an alternative.

Another strategy is to use varieties that form long vines that root as they run. Many heirloom varieties of summer squash do this, and squash and pumpkins classified as *C. maxima* will develop supplemental roots when allowed to spread. These roots are often sufficient to support continued growth even if a plant's primary crown is lost to squash vine borers.

More Advice on Organic Squash Vine Borer Control

Use floating row covers to protect plants until they start to bloom. When adults are seen, swat or trap them to reduce problems the rest of the season. Squash vine borer larvae do not burrow very deeply, and are turned up with routine cultivation. If you keep chickens or other poultry, allow them to clean up beds where you plan to grow squash or pumpkins before the crops are planted, and again at the end of the season. Pull up and dispose of infested plants in an active compost pile

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