

Squash Bug

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Order: Hemiptera

Family: Coreidae

Species: *Anasa tristis*

Size: The adult is 1/2 to 3/4 inch long.

Color: The adults (Figure 1) are brownish/gray with orange markings along the edge of their abdomens. The nymphs (Figure 2) are a whitish to greenish-gray color with black legs and a dark head. As the nymphs move through their five instars, their color ranges from light greenish-gray to dark greenish-gray.

Description: The adults have a flat back. The squash bugs, like stink bugs, produce a foul odor when disturbed. The last two instars have noticeable wing pads and look very similar to adult squash bugs.

Habitat: The squash bug is found throughout the United States. It is a pest of all cucurbits, but prefers squash and pumpkins to other cucurbit plants. The squash bug is typically found on the underside of leaves and will try to find cover if exposed. Squash bug eggs (Figure 3) are usually found on the lower surface of leaves and are an iridescent bronze color.

Life Cycle: Adult squash bugs overwinter in plant debris or sheltered areas along field edges. The bugs move into the fields in the early spring to



Figure 1. Squash bug adult.

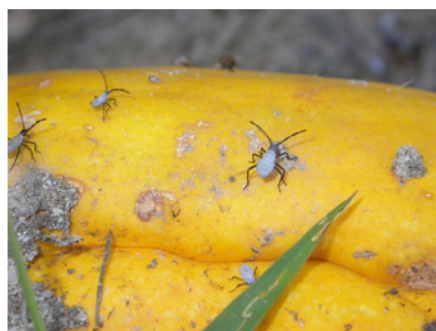


Figure 2. Squash bug nymphs on squash fruit.



Figure 3. Squash bug eggs on squash leaf.

mate. Females lay eggs along the veins of the leaf surface, typically in a diamond or V-shaped pattern. Egg masses may include from seven to 20 individual eggs. The eggs hatch in approximately one to two weeks. It takes four to six weeks for the nymphs to go through their five instars and develop into adults. In southern climates, two to three generations per year can occur.

Type of Damage: Adults and nymphs feed in colonies using their piercing-sucking mouthparts to pierce plants and suck the sap out. The bugs inject a toxic substance into the plants while they feed, causing the vines to wilt and eventually die. An entire plant or a section of a plant may die, while plants nearby in the same field may look healthy. Adults and nymphs also feed on fruit and in some cases, make it unmarketable.

Cucurbit yellow vine decline (Figure 4) is a newly identified disease that can be transmitted by the squash bug. The disease is caused by the bacterium *Serratia marcescens* and attacks squash, pumpkins, and melons. Although the disease has not been found in Virginia, cases have been reported in the bordering state of Kentucky, which may put Southwest Virginia at risk. Symptoms from the disease include stunting, yellowing, and decline in plant vigor typically one to two

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weeks prior to harvest. In addition to yellowing leaves, the phloem in the plant stems turns brown (Figure 5) and fruit usually must be culled as a result of the disease. The bacterium is able to survive the winter in the squash bugs and infect plants the following year.

Symptoms caused by cucurbit yellow vine decline are very similar to the symptoms of bacterial wilt, which is a disease transmitted by the cucumber beetle. Although bacterial wilt has similar symptoms, the progression of the disease is much slower than cucurbit yellow vine decline. With cucurbit yellow vine decline, the plants rapidly turn yellow and wilt almost overnight. It is important to identify the pest causing the damage to properly treat the situation.

Control Methods

Scouting: The action threshold for squash bug is when more than one egg mass is found per plant during the flowering stage. It is important to monitor plants and take appropriate actions once squash bugs have been found and control them early in the season to prevent large populations from developing. Once cucurbit yellow vine decline has infected a plant, there is nothing that can prevent the plant from dying.

Cultural Control: Mowing weeds and maintaining vegetation around field perimeters and destroying crop debris after harvest can help reduce overwintering sites for squash bugs. Vigorous vines can withstand squash bug attacks, so it is important to maintain healthy, actively growing cucurbit crops by irrigating and fertilizing them as needed. Planting varieties resistant to squash bugs (Butternut, Royal Acorn, and Sweet Cheese) is also an option to help reduce squash bug damage.

Manual Control: Home gardeners can remove squash bug eggs, adults, and nymphs manually and destroy them. Since squash bugs tend to congregate together, boards or shingles placed around the plants will promote squash bug aggregation and simplify collecting and destroying the bugs.



Figure 4. Squash plants infected with cucurbit yellow vine decline.



Figure 5. Cross-section of squash stem showing the brown-colored phloem ring indicative of infection by *Serratia marcescens*, the causal agent of cucurbit yellow vine decline.

Biological Control: The Tachnid fly, *Trichopoda pennipes*, attacks squash bugs and occurs naturally in the field. Although parasitism rates as high as 80 percent have been reported, the fly is still unable to control squash bug populations below economically damaging levels. The fly is not available commercially.

Chemical Control: Since squash bug adults are secretive, control can be difficult. Treatment should be directed toward nymphs when possible, and thorough spray coverage should be attempted.

Soil applications (via drench, irrigation, or in-furrow spray) of systemic insecticides such as Admire or Platinum for control of cucumber beetle and aphids will help suppress squash bugs early in the season, but foliar applications may still be necessary. All labeled pyrethroids such as esfenvalerate (Asana XL), permethrin (Ambush 2E, Pounce 3.2 EC), bifenthrin (Capture 2 EC), and fenpropathrin (Danitol 2.4 EC) will effectively control squash bug nymphs.

These products are based on information for Virginia only available at the time of publication (Bratsh et al. 2005). Always check the label and the current production recommendations before making any pesticide applications.

References

- Capinera, J. L. 2001. *Handbook of Vegetable Pests*. Academic Press, New York.
- Bratsh, A.D., T.P. Kuhar, S. B. Phillips, S. B. Sterrett, C. M. Waldenmaier, H. P. Wilson, and J. Speese III. 2005 *Commercial Vegetable Production Guide*, Virginia Cooperative Extension publication 456-420. 2005.