

Squash Bug Management in Cucurbits

Gerald Brust, IPM Vegetable Specialist
University of Maryland
October, 2008

Squash bugs damage plants by removing sap and causing leaves to wilt and collapse. Both nymphs and adults suck sap from the plant injecting a toxic substance causing a wilting known as Anasa wilt of cucurbits. The wilt resembles bacterial wilt, a disease caused by bacteria vectored by striped cucumber beetles. After wilting from Anasa wilt, vines and leaves turn black and brittle. Small plants are killed while larger plants may have several runners wilt. Maybe more importantly, squash bugs are the vector of a newly recognized disease of cucurbit crops, Yellow Vine Decline. Melons, watermelon, and pumpkins are susceptible to this disease. The bacterium that causes this disease, which is not the same as the bacterium that causes bacterial wilt, is injected into the plant while the squash bug feeds. The disease results in yellowing, wilting and death of the plant. Early infection by the bacteria can result in severe yield loss and therefore, it is essential to prevent early season squash bug infestations. Anasa wilt and



Yellow Vine Decline are not common in the mid-Atlantic area at this time but should be carefully watched for by growers.

Fig 1. Pumpkin leaf with necrosis due to squash bug feeding

Appearance: Adult squash bugs are over a half inch (15 mm) long and approximately 1/3 as wide. Adults are winged, brownish black, sometimes mottled with gray or light brown, flat-backed (Fig. 2). Immature squash bugs are called nymphs and are whitish to greenish-gray, with black legs. Nymphs vary in size from small, spider-like individuals when first hatched, to maturing nymphs, which are nearly as large as adults (Fig. 3). Young nymphs have red legs and antennae with a green abdomen. Older nymphs are greenish-gray. Eggs are bronze colored and are laid in groups or clusters often in the angle of two veins on the underside of leaves (Fig. 4).



Fig. 2 Adult squash bug on pumpkin



Fig. 3 Small and large squash bug nymphs on pumpkin leaf

Life cycle: Only unmated adult squash bugs overwinter in the shelter of dead leaves, vines, boards or buildings and fly to cucurbits when vines start to grow in the spring. After feeding and mating, egg laying begins. Masses of eggs, each containing about a dozen or more, are usually deposited on the undersides of leaves. Egg laying by females continues until midsummer, and this protracted egg laying period causes all life stages to be present throughout the summer. Eggs hatch in about 10 days or more, and the nymphs pass through 5 growing stages (instars) requiring 4-6 weeks to reach adulthood. Only one generation develops each year and new adults do not mate until the following spring. Adults and nymphs often are found clustered near the plant crown, beneath damaged leaves, or on fruit.



Fig. 4 Adult squash bug and eggs in angle of veins

Management: Early detection of adult squash bugs is very important since they are difficult to kill and can cause considerable damage. This insect can be very difficult to control when populations are allowed to build. Timing is the key to successful squash bug control. Because Anasa wilt and Yellow Vine Decline are not common as of yet in Maryland growers should use insecticides to control squash bugs when 2 overwintering adults are observed feeding on small plants (< 3 leaves) or if two egg masses are found per plant when plants are larger. If needed early insecticide sprays should target overwintering adults on young plants. Directing these early sprays at the base of the plant will increase control. Pyrethroids such as Asana, bifenthrin, Warrior and permethrin will control squash bugs best if used on small instars and before populations build.