Squash Bug in Vine Crops

Adult squash bugs (***Anasa tristis)*** are flat, gray-brown, and usually found on the underside of leaves or in cracks in the soil. Typically squash bugs do not reach pest levels in vine crops; however, some growers have found high numbers and resulting crop damage in recent years. Squash bugs can cause both leaf and fruit injury if numbers are high. Photos of adults, nymphs and eggs are in the *Pest Identification Supplement* to the *New England Vegetable Management Guide*. The *Supplement* is available in hard copy from the UMasss Outreach Bookstore (413-545-2717) or as a downloadable pdf file at the Guide website (http://www.nevegetable.org); photos are on the web individually at http://www.umassvegetable.org)

Crops affected. Squash bugs are most attracted to Hubbard squash, summer squash, pumpkins, watermelons, muskmelons, cucumbers, and butternut squash in decreasing order. Thus, squash bugs are most damaging on summer squash and zucchini, pumpkin and Hubbard squash. Because of low attraction and low survival rate, squash bugs do not usually become a pest on cucumber, watermelon, butternut squash and muskmelon. If summer squash gets away from you and gets too big to harvest, squash bugs will move in and feed on the unharvested fruit.

Damage. Squash bugs feed by piercing the plant tissues with stylets (sharp, sucking mouthparts). This interrupts xylem transport and causes wilting in leaves, stems, and vines that are beyond the feeding site. The injury may appear as light-colored areas that later turn brown and die, symptoms that resemble bacterial wilt. If you see these symptoms and are not sure of the cause, look for presence of squash bugs and also contact the Disease Diagnostic Lab (413-545-3208) to send a sample for diagnosis. Squash bugs may also vector a relatively uncommon but serious disease, Cucurbit Yellow Vine Disease caused by the bacterium *Serratia marcescens*. The presence of this disease was first noted in New England in 2003. If this disease has occurred on your farm, it is critical to focus on controlling early season adults to prevent its spread. A good article by Jude Boucher on cucurbit yellow vine may be found on the web at http://www.hort.uconn.edu/ipm/veg/htms/cucrbinct.htm.
In late summer and fall, large nymphs and new adults can damage the fruit of fall vine crops.

Life Cycle. Adults over winter in crop residues and protected sites in or near the field, and move into vine crops in June and early July. Squash bug eggs are laid in tidy clusters (usually on undersides of leaves in the notch between leaf veins) and change color from yellow to bronze shortly before hatching. Nymphs are light gray with black legs and go through 5 molts and become more brownish as they grow to adults. Only adults have wings and fly. There is one generation per year.

Management. Scout for squash bugs adults and eggs by searching upper and lower leaf surfaces and soil cracks around the plant. The population level that will be damaging to the crop will vary with the crop and its stage of growth. If you see more than one egg mass per plant, that may be sufficient to cause damage as the eggs hatch and nymphs feed. Conventional insecticides include several synthetic pyrethroids and carbamates (see the *2006-2007 New England Vegetable Management Guide* for details); however note that these are toxic to bees and should be used cautiously during flowering. OMRI listed (organic) products include zadirachtin (Neemix 4.5) and pyrethrin (Pyganic 5.0). Target sprays to control nymphs as soon as they hatch, as adult squash bugs and older nymphs are more difficult to control after they develop their hard exoskeleton as they mature.

Squash bug nymphs: most susceptible stage for insecticide treatments. However, avoid risk to pollinators during flowering.

Cultural practices also influence squash bug numbers. We have observed **higher numbers in fields with hay or straw mulch and in low-till or no-till situations** where cover crop residues are high. They may prefer the shelter provided by high residues. Because squash bugs tend to hide and congregate in protected locations trapping can be used in small plantings. Place some boards on the ground and check underneath them in the morning; destroy bugs found underneath. Blue Hubbard squash as a **perimeter trap crop** has shown some efficacy in trapping squash bugs as well as cucumber beetles, because it is preferred over many other vine crops. In Texas, many growers have successfully used early-planted **straightneck summer squash** ('Lemon Drop' or 'Hyrific') as a trap crop in the border rows of their watermelon fields to attract and control squash bugs to manage CYVD.

Biological Control. There is a colorful tachinid fly, *Trichopoda pennipes,* which lays small white eggs on the side or underside of squash bug adults and nymphs. Unfortunately, these fly eggs do not hatch and kill the squash bug in time to prevent reproduction and feeding by squash bugs.

By Ruth Hazzard, University of Massachusetts Vegetable Extension Program
Update February 2007 for New England Vegetable and Berry Growers Association, Waltham Day Long Meeting.