

## Squash Pests

Summer squash is an important part of summer nostalgia for many of us. Whether it's fried, grilled or baked into bread and casseroles, some kind of squash seems to make its way into nearly every summer meal. Unfortunately for the Kansas gardener, this also means battling squash bugs and for perhaps the first time—the squash vine borer.

Anyone with squash or pumpkin plants already knows the danger of the squash bug. Squash bugs are grey with a distinctive shield shape to their bodies. Using their piercing, sucking mouthparts they reduce plant yields and can carry diseases that cause plant death. This death will appear as sudden wilting followed by deterioration of the plant.

As you plan your summer garden, look for resistant varieties such as Butternut, Royal Acorn and Sweet Cheese. When available, resistant varieties are always the best place to start planning control. On both resistant and non-resistant varieties, gardeners should begin to scout for the brownish-red eggs clusters on lower leaf surfaces in late June-July. These clusters are the first generation of squash bugs which will hatch sometime in August. As you find squash bug egg clusters you may remove them by hand or wait until most of the eggs have hatched as a good indicate of when to spray.

Treatment should be based on the life stage you are seeing in your garden. Spinosad and permethrin are effective for nymphs but ineffective on adults. Squash bug nymphs will be extremely small, a greenish color with black legs. These nymphs will become adults this year and overwinter in garden debris. For adults, insecticides with the active ingredients cyhalothrin and cyfluthrin are effective.

If your favorite squash variety *is* susceptible you should consider spraying anytime from June until the end of harvest. To reduce the amount you spray, place a small board or shingles near your plant. Squash bugs will use this area for shelter, and you can concentrate your sprays in these locations.

If sprays aren't your preferred method, cultural practices can be as effective if done diligently. Don't mulch heavily or too close to squash plants as this can provide cover for the insects. Remove ripe fruit promptly and cull vines at the end of the season. This will take away the nymph's winter food source. Without food, adults and nymphs have a greatly reduced likelihood for survival over the winter.

The squash vine borer may be a relatively new threat for many gardeners. The squash vine borer is a clear-winged wasp-like moth who sneakily lays eggs on the lower stem of the squash plants. These eggs hatch into larvae that bore into the squash stem and eat it from the inside out.

Squash vine borers feed on squash, pumpkins and gourds with cucumbers and melons also serving as potential hosts. Repeatedly growing squash in the same area from year to year can result in issues with the squash vine borer. The borers overwinter in cocoons in the soil emerging in late spring, as pumpkins are beginning to establish.

Gardeners should look for these eggs on the underside of vines near the base of the plants and remove any eggs found. In your scouting if you see what appears to be sawdust at the base of your plant and a small hole—it is an indication that the borer has already made its way into the plant.

The larvae feed on the conducting tissues of the plant, where it moves water and nutrients, resulting in the eventual death of the plant. If you suspect squash vine borers you can cut open the dead stems and look for large white worms. At that stage, disposal of the plants is the best practice to prevent a

reoccurring issue. If larvae are allowed to mature they will exit the stems and burrow into the soil to overwinter.

Preventive treatments are most effective for squash vine borer, especially if you've had issues in prior years. Insecticides should be applied when the vines begin to run. Chemicals used for borer control in gardens are rotenone, permethrin, bifenthrin or carbaryl, applied as sprays or dusts. Continue on a 7- to 10-day reapplication schedule for 3 to 5 weeks. If plants wilt, look for the presence of holes and a milky ooze. If the borer is found, the stem can be cut open and the borer removed and destroyed. This practice destroys the viability of that plant but may protect others.

For pictures of the insects and their eggs or additional information on other pests visit: <https://hnr.k-state.edu/extension/info-center/plant-pest-problems.html>