

## Bug-Wise



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Office: 1-662-325-2085

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**Stink Bugs in Home Vegetable Gardens:** Stink bugs are some of the most common, and most damaging, insect pests in late summer and fall vegetable gardens. Heavy stink bug infestations can ruin a crop of fall tomatoes or peppers or damage a crop of peas or butter beans so badly that it is just not worth the effort to shell them and pick out the damaged seed. There are three key reasons stink bugs are such a problem in late-season vegetable gardens. The first two explain why stink bugs are so common and the last explains why they are so damaging.

First, stink bugs complete several generations per year, increasing their numbers several-fold with each generation. This means there are a lot more stink bugs in the garden in late summer than there were in the spring (stink bugs overwinter as adults), and there will be even more in the fall. Second, stink bugs reproduce on most of the major row crops grown in the state, as well as many weeds. Wheat, clover, corn, sorghum, soybeans and cotton are all excellent hosts for stink bugs. When these crops mature, adult stink bugs leave in search of other suitable hosts. Adult stink bugs are strong fliers and can smell suitable hosts from relatively long distances. Picture in your mind a funnel that is directing all the stink bugs from a hundred acre corn or soybean field into your 50 foot by 50 foot vegetable garden and you will have the idea. Finally, the reason stink bugs are such damaging pests is that they are fruit and seed feeders. This means they focus their feeding and damage directly on the very part of the plant we want to harvest and eat. It does not take very many stink bugs to cause a lot of damage in a small planting of tomatoes.

*Stink Bug Feeding and Damage:* Stink bugs have piercing-sucking mouthparts, which they use to pierce the peel or hull of fruiting structures and feed on the inner contents. They prefer to feed on developing seed and will preferentially do so when seed are available. This is why southern peas are one of their favorite hosts. The thread-like mouthparts actually contain two separate channels or tubes. One channel is used to inject salivary enzymes into the feeding site. These enzymes pre-digest and liquefy the plant material so that it can be sucked up through the other channel. Immature stink bugs, known as nymphs, have the same type mouthparts as adults and feed in the same way.

Stink bug damage varies considerably depending on the species of plant being fed upon and the stage of development. On southern peas there is usually a small “sting” on the hull with damage to the seed immediately underneath. Seed that are damaged when small usually fail to develop. Larger seed will have sunken white or discolored areas where the stink bugs fed. Damage to butter beans and green beans is similar. On tomatoes and peppers damage usually appears as irregular-shaped white or yellow blotches under the skin of the fruit. Okra pods that are curled or “cow-horned” are usually the result of stink bug injury. This same symptom is seen in ears of sweet corn that are damaged when they are just forming. Stink bug injury to more mature ears of sweet corn appears as damage to individual kernels, which may be sunken and brown-colored. Stink bugs can also be a problem in crops like broccoli, cauliflower, and even turnips, especially when heavy populations are present in fall crops. Squash, melons, and other cucurbits are rarely damaged by stink bugs, though these crops are plagued by squash bugs.

*Stink Bug Species:* There are many different species of stink bugs, but all have shield-shaped bodies and most produce a strong, disagreeable odor when handled. Green stink bugs, southern green stink bugs, and brown stink bugs are three of our most common species. Brown stink bugs are usually the most abundant species in the spring, with green and southern green stink bugs becoming more abundant in late summer. Southern green stink bugs can be especially numerous following mild winters, but their numbers have been relatively low so far this year because of last winter’s low temperatures. Brown and green stink bugs are less affected by severe winters.

Stink bug nymphs are similar to adults in general body shape and type of mouthparts but vary greatly in color and markings. For example, newly hatched southern green stink bug nymphs are orange-colored, but become black with white spots after a few days, and then become green with white and pink spots as they continue to grow. Nymphs of

other stink bug species also exhibit different coloration and markings at different stages in their development. Being able to recognize the nymphs can help get stink bug sprays applied in a timely manner. Because of their spotted markings and oval, convex body shape stink bug nymphs are sometimes mistaken for lady beetles. “We were planning to spray yesterday but decided not to because we had so many lady beetles in the garden.”

Although technically not stink bugs, leaf-footed bugs are often grouped with stink bugs because they cause similar damage and are controlled in the same way. Adults are brown and have larger, more elongate bodies than stink bugs. These insects are easily identified by the flattened, leaf-shaped segments of their hind legs.

*Stink Bug Control:* The best way to control stink bugs is to spray them with an effective insecticide, taking care to get thorough spray coverage. If you are trying to grow peas, beans, tomatoes, peppers, tomatillos, sweet corn, okra, or other susceptible crops in late summer or fall, you are almost certainly going to need to control stink bugs. And because of the large numbers of migrating adults present at this time, you will likely need to spray several times. Killing every stink bug in the garden this week will not protect against the ones that arrive next week.

Products that contain bifenthrin (Ortho Bug-B-Gon Max Lawn and Garden Insect Killer Concentrate is one of the most common brand name products) or permethrin (There are several different brand name permethrin products labeled for use in the vegetable garden) are two of the most useful treatments. These products are effective on stink bugs and have relatively short pre-harvest intervals for the crops they can be used on. **Be sure to read the label carefully before you spray! These products are not labeled for use on all vegetables and the pre-harvest intervals can vary greatly depending on what crop is being sprayed.** For example, neither of these products is labeled for use on okra, and the pre-harvest interval for bifenthrin is 1 day on tomatoes, 3 days on peas, and 7 days on broccoli. Malathion is another stink bug control option, and malathion is labeled for use on okra as well as many other garden vegetables. Brown stink bugs are more difficult to control than green or southern green stink bugs.

Stink bug control is especially challenging for organic gardeners. Hand-picking and foot-stomping can be a somewhat effective method for delaying the buildup of stink bug numbers during the early gardening season. Obviously the success of this method depends on the size of the planting and the skill and diligence of the bug-picker. This method becomes less effective during the latter half of the season when large numbers of migrating adults begin flying into the garden. Frequent spraying with products containing natural pyrethrins is the best option for organic gardeners at this point in the season. However, natural pyrethrins are much less effective against stink bugs than synthetic pyrethroids such as bifenthrin or permethrin.

See Extension Publication 2347, *Insect Pests in the Home Vegetable Garden*, for more detailed information on stink bug control options for specific crops. You can get a copy of this publication from your local county extension office, or by going to [www.msucare.com](http://www.msucare.com), clicking on “Publications,” and “searching” for the title.

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Blake Layton, Ph.D.  
Extension Entomology Specialist

The brand names mentioned in this publication are used as examples only. No endorsement of these products is intended. Other appropriately labeled products containing similar active ingredients should provide similar levels of control. This information is for educational and preliminary planning purposes only. Always read and follow the insecticide label.