



Stink Bugs

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Range and Plants Attacked

Stink bugs can be found throughout Virginia, but are more abundant in the warmer regions of the state. According to iNaturalist, thirty-six stink bug species have been spotted in Virginia, but only a few of them are considered common pests. Stink bugs feed on a wide variety of host plants, doing the most damage on tomato, pepper, bean, okra, pecan, and fruit crops. They can also sometimes become a nuisance pest to homeowners when they move into human dwellings in search of overwintering sites.

Description of Damage

Adults and nymphs insert stylet-like mouthparts into plant tissues, inject digestive enzymes, then drink partially-digested plant juices. This feeding can weaken plants and cause buds and fruit to be malformed and or discolored. In beans, feeding on pods can cause seeds to become discolored, malformed, or cause seeds to be aborted (Figure 1). In vegetables, such as tomatoes and peppers, and tree fruit such as apples, feeding can cause dimpling and discoloration on fruit skin and fruit flesh. For young plants, stink bug feeding can cause seedlings to die or be malformed. Stink bug feeding on corn seedlings can cause lateral shoots to form, known as “tillering”, and feeding on ears can make kernels discolored and create entries for bacterial and fungal pathogens to enter the plant. Stink bug feeding on cole crops, such as cabbage, causes wilting and can kill the plant in severe cases. In these ways and others stink bugs can reduce crop profitability by way of yield reduction and or reduced fruit marketability.



Figure 1. Edamame pod damaged by stink bug feeding. (Kemper Sutton, Department of Entomology, Virginia Tech)

Identification

Stink bugs belong to the order Hemiptera, and family Pentatomidae. Several species are found in Virginia. Important pest species include the brown marmorated stink bug (BMSB), *Halyomorpha halys* (Figure 2), the brown stink bug, *Euschistus servus* (Say), and the green stink bug, *Acrosternum hilare* (Say). The harlequin bug, *Murgantia histrionica* (Figure 3), can be a serious pest for organic brassica growers. The spined soldier bug, *Podisus maculiverntris* (Figure 4), is a predatory stink bug that feeds on other insects (often pests) on the farm and in the garden. All stink bugs have the characteristic five-sided shield shape. Brown stink bug adults are 5/8-inch-long and largely a uniform green color. Eggs of these species are barrel-shaped and are laid in clusters of 20 to 70 eggs. Nymphs resemble adults in shape but are smaller and have contrasting color patterns. Stink bugs discharge a foul odor when threatened.



Figure 2. Brown marmorated stink bug adult. (Kristie Graham, USDA-ARS, Bugwood.org)



Figure 3. Harlequin bug adult. (Clemson University – USDA Cooperative Extension Slide Series, Bugwood.org)



Figure 4. Spined soldier bug nymph feeding on a caterpillar. (Russ Ottens, University of Georgia, Bugwood.org)

Life History

There are one to two generations of stink bugs each year. They typically overwinter as adults in crop residue, field borders or human dwellings. Adults emerge from overwintering in spring and begin feeding and laying eggs on plant leaves in late spring or early summer. Nymphs feed throughout the summer and molt into adults by late summer (Figure 5). Most stink bug pest populations peak in late summer.



Figure 5. Brown marmorated stink bug egg mass, first and second instars. (Gary Bernon, USDA-APHIS, Bugwood.org)

Cultural Control

Controlling weeds and wild fruit trees adjacent to fields helps prevent some species of stink bugs from invading spring crops in high numbers. For seedlings, ensure good coverage of seed when planting to avoid stink bug feeding on plant crowns. This is especially worth considering when planting into no-till fields with high residue coverage, since furrows are less easily crimped closed by mechanical planters. Be more cautious when planting in locations nearby stink bug overwintering sites, such as wood lines and human dwellings such as sheds and barns.

Organic/Biological Control

The most important natural enemies of stink bugs are a few species of parasitic wasps that attack eggs. One of these, the samurai wasp, *Trissolcus japonicus*, has been intentionally released as part of a biological control program aimed at regulating BMSB populations. These wasps help to reduce the numbers of nymphs occurring on plants.

Additionally, some organically-approved insecticides show activity against stink bugs, but field efficacy data in support of such chemistries are limited.

Chemical Control

Stink bugs can be hard to kill with insecticides. Timing treatments while pest populations are mostly nymphs can improve insecticide efficacy. Scout your fields, and treat with a registered insecticide when damage appears, or when insects appear in damaging numbers. Materials with a long residual activity are usually more effective because adults often leave and re-enter the crop. Insecticides in IRAC groups 3A and 4A are most common. With all insecticides, repeat as needed and carefully follow label instructions.

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