

Brown Stink Bug Damage to Corn

Stink bugs are found throughout the world and are pests of many crops. In the United States, plant-feeding stink bugs are most often associated with soybean, corn, tobacco, peaches, crucifers, tomatoes, small grains, red clover and cotton. They can also be found feeding on many weed species.

Stink bug damage in corn has been a recognized problem since the 1980s. Most often only a very small percentage of fields in an area are affected by these insects – usually fields associated with heavy residue.

Identification



Typically, it is brown stink bug species that attack corn. One of the most common of these is the spotted stink bug, *Euschistus variolarius*. This insect is brown in color and approximately 7/16 inch (9 mm) in length when fully grown. Adults are broad, somewhat flat, and shield-shaped. The upper side of the body ranges from light to very dark brown. The underside varies from light yellow to green.

Crop Damage

Stink bugs feed by inserting their needle-like mouth-parts into plant tissues, injecting materials into the plant to aid in digestion, and sucking out plant juices. This feeding damages the plant physically, much like stabbing plant tissues repeatedly with a fine needle, leaving a tattered or shabby appearance. Feeding also damages plants chemically, because the materials injected by the insect are toxic to the plant. This damage is manifest as yellowing, twisting and stunting of leaves and stalks of corn seedlings (Figure 1).

Injury due to stink bug feeding may range from moderate to severe to lethal, depending on the extent of infestation and which tissues are affected. Leaf and stalk feeding may result in modest or severe stunting, but damage to the growing point may kill the plant.

When growing point damage occurs, tillers or “suckers” may be produced from lateral meristems at the base of the plant.



Figure 1. Brown stink bug damage to corn plant.

There is typically a row of oval holes with yellow borders across the unwrapped leaves of damaged plants. This row results from the single feeding puncture that penetrates the wrapped leaves. A slimy, decaying area may be found in the stalk where the stink bug has fed. This is most likely an effect of the insect’s digestive juices.



Tillering is the most dramatic symptom of damaged plants. Tillering usually first appears about 10 days after the damage was caused. A shoot or tillers begin to grow from the base of the plant and may become as large as the original plant.

Damaged plants may develop misshapen ears on tillers in place of the tassel.

The primary corn ears can also be damaged by later feeding of brown stink bugs. If a stink bug pierces into a developing ear it will typically be curved or bent from the point of feeding (Figure 2).



Figure 2. Corn ears are curved due to piercing of the developing ear by brown stink bug adults¹.

Tillage and Cropping System Influence

Stink bug damage is most severe in no-till fields. In some no-till situations, damage can be found throughout the field, often with areas of very intense damage. Frequently, the most impacted portions of the field are near wooded areas. Stink bug damage can be found in conventional-till fields, but the incidence is usually low and often limited to the border rows.

A soybean-wheat-corn cropping sequence can be especially favorable for stink bug damage. A stink bug population can build up in soybeans during pod fill. Wheat cover crops provide an attractive early spring host for the insects, and subsequently they feed on emerging corn. The stink bugs may overwinter in the wheat stubble, or they may leave the field for over-wintering sites and return in the spring.

Yield Loss

Stink bug injury to corn can reduce yields in several ways – stunted plants yield less, and plants with injury to the growing point may die or produce tillers, both of which reduce yields.

Stunted plants usually outgrow stink bug feeding damage and may catch up in height with undamaged plants in two to four weeks. However, research at the University of Kentucky indicates that yield from these plants will be reduced about 10% on average.

Growing point injury may reduce stands below the optimum, thus lowering yield. Another effect of this injury is tillering (“suckering”) by the plant. Tillered plants may produce little if any grain. Some may produce small ears with about one-third the yield of undamaged plants. In some cases the ear forms where the tassel normally appears. Tasseling and silking of these plants may be delayed a week or more. Tillered plants may in effect become weeds, growing to a height of several feet and competing for water and nutrients with undamaged plants.



Management

Economic thresholds are not established for brown stink bugs in corn in most states. However, grower experience has shown that insecticides are most effective when applied prior to or at plant emergence.

Scouting for stink bug damage is difficult and must be done very early to be effective. The first two weeks following corn emergence are critical for scouting. Scout as you would for cutworms, but in addition to cutworms and their damage (cut plants), look for stink bugs and their damage. Stink bugs tend to feed at the base of corn plants, usually an inch above the soil surface.

Special attention should be given to these fields:

- fields that are no-tilled
- fields infested with winter annual weeds
- fields with a history of stink bug injury.

Always read and follow label directions when applying insecticides.

¹Image source: the Ohio State University Northwest Agricultural Experiment Station, 2008.

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