

Stink Bugs and Leaffooted Bugs

Michael J. Hall

Distribution:

Stink bugs and leaffooted bugs are found throughout the pecan producing regions of the United States. They can be found throughout Louisiana.

Description:

The southern green stink bug, *Nezara viridula*, the brown stink bug, *Euschistus servus*, and the leaffooted bug, *Leptoglossus phyllopus* are the three species of kernel feeding Hemiptera that are commonly associated with pecan. The adult southern green stink bug (Fig. 1) is shield shaped in appearance, is approximately $\frac{1}{2}$ to $\frac{3}{4}$ inch in length, and is light green in color.



Figure 1. Adult southern green stink bug.



Figure 2. Immature southern green stink bugs.

The adult brown stink bug (Fig. 3) is similar in size and shape to the southern green stink bug, but is brownish-gray in color. The body is outlined with alternating light-dark markings.



Figure 3. Adult brown stink bug.



Photograph by Ralph Bagwell

Figure 4. Immature brown stink bug.

The adult leaffooted bug (Fig. 5) is about ½ inch in length and is narrower than either of the two stink bugs. It is brown in color and is identifiable by the flat, leaf-like segments of the hind legs. The immature stages of these insects are shown in Figs 2, 4, and 6 respectively.



Figure 5. Adult leaffooted bug.



Figure 6. Immature leaffooted bug.

Life Cycle and Damage:

Stink bugs and leaffooted bugs overwinter as adults in weedy areas along fence rows and ditch banks. They have also been observed to overwinter in leaf litter and under the bark of trees. They become active in the spring as temperatures start to rise. It takes approximately five weeks for stink bugs to develop from egg to adult. There are about four generations per year of the southern green stink bug and two generations per year of the brown stink bug in Louisiana. Little is known about the biology of the leaffooted bug; however, their presence has been observed throughout the growing season.

Over 50 plants have been reported as hosts of these insects. They include various species of weeds such as thistle and jimson weed, and cultivated crops such as cowpeas, okra, tomatoes, cotton, corn, soybeans, millet, and grain sorghum. It is when the weeds and cultivated crops become unsuitable as host plants that stink bugs and leaffooted bugs move onto pecans.

Although stink bugs and leaffooted bugs do not reproduce or develop on pecan, the feeding on pecan by the adults can cause significant crop loss. Their feeding on the nuts causes two types of damage, black pit and kernel spot. Black pit occurs when stink bugs and leaffooted bugs feed prior to shell hardening. The internal tissue of the nut breaks down and becomes discolored. Nuts with black pit drop prematurely from the tree. Determining the amount of nut drop from black pit is difficult as other factors can also cause premature nut drop. Kernel spot (Fig. 7) occurs after shell hardening. Kernel spot is characterized by dark brown to black circular spots on the surface of the kernel. The area underneath the spots is whitish in color, and is pithy and porous in appearance. The area where the spots occur are bitter tasting; however, the unaffected areas of the kernel

taste normal. Kernel spot cannot be detected until after the nut has been cracked and shelled.



Figure 7. Kernel spot.

Control:

An important step in reducing the severity of stink bug and leaffooted bug infestations is the elimination of weed hosts from within and around the orchard. In some orchards cover crops are used to enhance the presence of beneficial arthropods and to improve soil fertility. Some of these cover crops are hosts to stink bugs and leaffooted bugs and, if used, they should be carefully monitored to ensure that they do not cause a buildup in the numbers of these insects within the orchard. Cultivated crops grown adjacent to, or near the orchard, such as corn, soybeans, and cotton should also be carefully monitored for stink bugs and leaffooted bugs and if possible, they should be controlled within these crops.

Several insecticides are registered for control of stink bugs and leaffooted bugs, but trying to control them on pecan with insecticides is difficult. Determining when to make an insecticide can be a problem because stink bugs and leaffooted bugs are present throughout the growing season, they are difficult to detect in the trees, and no treatment threshold has been established for them on pecan. Insecticide applications for control of other late season pests such as black pecan aphids, hickory shuckworm, and pecan weevil can sometimes help in reducing the infestation levels of stink bugs and leaffooted bugs within an orchard.

For a listing of insecticides that can be used for controlling stink bugs and leaffooted bugs, refer to the Louisiana Recommendations for Control of Pecan Insects. This can be found at www.lsuagcenter.com. When using insecticides, be sure to check to pH of the water being used for spraying. The pH needs to be between 5.5 and 6.5 for optimum insecticide efficacy.

Using a buffering agent will help maintain the desired pH once pesticides have been added to a solution.