ALABAMA COOPERATIVE Extension SYSTEM

ANR-990

ALABAMA A&M AND AUBURN UNIVERSITIES

Sucking Pests of Peanuts in Alabama

In Alabama, the insect and mite pests that feed on peanuts by sucking their plant juices are thrips, aphids, leafhoppers, three-cornered alfalfa hoppers, and spider mites. Except for thrips, damage to peanuts from these pests is sporadic.

Environmental factors can enhance the activity of these secondary pests sometimes resulting in economic loss. As well as causing direct damage to the plant, several of these pests cause indirect damage by transmitting viruses to peanuts. These pests do not have a treatment threshold established for peanuts. Because of the type of damage they cause and their sporadic occurrence, decisions about management and control are difficult to make.

However, a better understanding of the biology of these pests and the ability to identify them and their damage should help in making proper management decisions.

Thrips

Four species of thrips have been found to occur commonly on peanuts in Alabama. Tobacco thrips, *Frankliniella fusca* (Hinds), is the most abundant. The adults are tiny, slender insects barely visible to the unaided eye. They may vary in color from dark-brown to yellow (Figure 1). The immatures are even smaller and are generally yellow.

Thrips adults and immatures primarily cause damage to peanuts by feeding on seedling plants. They feed in the folded leaflets of the buds of plants causing scarred, deformed leaves which are often referred to as "possum-eared" (Figure 2). Tobacco thrips and the less common western flower thrips are also vectors of the tomato spotted wilt virus (TSWV) in peanuts.

Since 1986, TSWV has infected peanut crops in Alabama at low levels. Some TSWV infected plants can be found in most fields, but significant yield losses have not occurred due to TSWV. Texas and Georgia peanut growers have sustained economic loss due to damaging levels of this virus.

As soon as peanuts emerge from the soil after planting, adult thrips may be found feeding in the terminals. Eggs are laid in the terminal bud and within a week small, yellow immature thrips may be seen in the folded bud leaves. As these leaves grow and unfold, the scarring from the thrips feeding is evident (Figure 3). The severity of thrips damage to peanuts is related to the number of thrips feeding and the growth rate of the peanut seedling. The most severe thrips damage occurs in the earliest plantings and damage usually declines as the growing season progresses.

Healthy peanuts can recover from thrips damage with minimal effect on yield; but other early season stresses including herbicide injury, dry weather, and cold soil, can combine with thrips damage so that a delay in maturity and yield loss may occur.

Since all peanut plants in a field will be uniformly infested with thrips, preventative insecticide treatments provide the greatest protection from thrips damage.

Leafhoppers

Several different leafhoppers are found in peanuts. The most common is a small, green insect about 1/8 inch long. There are larger species that are brown or even multicolored (Figure 4). Because of the long and narrow shape of these insects, they are sometimes called "sharp shooters." When disturbed, they have the characteristic habit of running around the backside of the stem or leaflet. The immatures of leafhoppers are generally shaped like the adults and are usually bright yellow (Figure 5). Adults and immatures feed by sucking plant juices from the leaflet midvein. Their feeding usually causes the tip end of the leaflet to turn yellow. Eventually, the leaflet may turn brown and die (Figure 6). This damage is called "hopper burn." High populations of leafhoppers can cause an entire field to take on a yellow cast (Figure 7).

Leafhopper damage is most common during mid- to late season, and usually begins along field margins, especially next to weedy areas or pastures. When these areas are cut or mowed, the adult leafhoppers migrate into adjacent fields. If peanuts are lush and growing rapidly, populations will increase and infestations will begin to spread across the whole field.

When scouting peanuts, look for hopper burn and then evaluate the percentage of the field with typical symptoms of leafhopper injury. Also check individual plants to see if adults and immatures are still active. A direct yield

loss may not result from leafhopper damage, but hopper burn in excess of 30 percent of the field may indirectly affect the ability of the plant to mature the pods by making the plants unthrifty. Foliar sprays of insecticides are an effective method to control leafhoppers.

Three-Cornered Alfalfa Hoppers (TCAH)

The three-cornered alfalfa hopper is about 1/4 inch long with a wedge-shaped body (Figure 8). Adults are green; nymphs are tan or green with spines along the top of the body (Figure 9). Damage is caused by adults and nymphs piercing the stems and the leaf petioles. The most visible symptom of TCAH feeding is the thickened callous tissue or girdle that encircles the stem or petiole (Figure 10). Other plant symptoms include a purple discoloration of the stem above the feeding site and the eventual yellowing of the affected terminal (Figure 11). This damage may be confused with the symptoms of some soil diseases of peanuts like Cylindrocladium black rot, Rhizoctonia limb rot or TSWV. Multiple girdles of the vertical terminals and lateral runners may severely affect the maturation of the peanut pods.

Since specific threshold levels are not established for damage or numbers of TCAH's, control decisions are difficult. Maturity of the crop, weather conditions, and the presence of a high number of adults and nymphs are factors that have to be considered before recommending controls. Infestations of TCAH are quite variable and not predictable, but lush peanut vine growth and a wet season seem to favor higher populations of TCAH.

Spider Mites

The predominate spider mite found on Alabama peanuts is the two-spotted mite. These tiny, insect-related pests feed primarily by sucking plant juices from the underside of the leaf.

The feeding causes a yellow speckling of the leaves and the foliage to gradually turn from yellow to brown (Figure 12). Large populations of mites can be solely responsible for serious plant damage and defoliation. There is usually a fine webbing associated with the feeding site of the mites (Figure 13). The mites themselves are yellow with two black spots on the body. Immatures appear to be red or reddish-yellow. Adults lay eggs near the underside of the leaflet mid-vein. As the population increases, they begin to move to the terminals of the plant with "balls" of mites accumulating at the top of the plant (Figure 14).

Spider mites usually migrate from weedy field borders, utility poles, or garden areas (Figure 15). In the heat of summer, as these areas begin to dry up, the mites are spread by wind, equipment, or animals moving through the peanuts. Therefore, initial infestations are usually small and spotty, limited to areas 2 to 3 feet in diameter. Early infestations of spider mites may be confused with damage caused by peanut rust.

Scouts should be alert to look for symptoms of mite infestation before they spread over the field. In general, spider mites are a hot, dry weather pest with major outbreaks occurring in droughty years. Applications of certain foliar insecticides may also "trigger" outbreaks of mites if weather conditions are favorable. Most insecticides will not effectively control these pests and a true miticide must be used to obtain effective results.

Aphids

Aphids have not been an economic problem on peanuts in recent years. These soft-bodied insects are often called "plant lice" and feed by sucking the juices from foliage. They may be yellow, dark green, or black in color, and are approximately 1/4 inch long with an oval shaped body. Feeding aphids secrete a sticky substance on plants called "honey dew". A black fungus often grows on the honey dew causing the affected plants to turn black or greasy looking. Aphid feeding usually occurs in early to mid-season.

In Alabama, aphid damage to peanuts is seldom severe enough to warrant controls. Beneficial insects will usually control aphids effectively.

Control Recommendations

For specific control recommendations of these pests, ask your county Extension agent for a copy of Circular IPM-360, "IPM For Peanuts."

Figure 1. Adult tobacco thrip.

Figure 2. Thrips damaged peanut leaves are often called “possum-eared.”

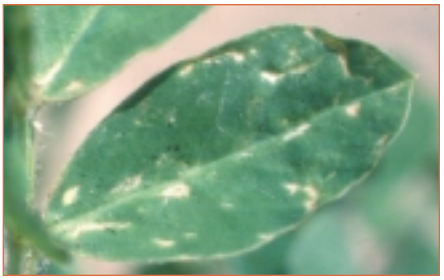

Figure 3. Thrips feeding scars leaflets.

Figure 4. Adult leafhopper (sharp shooter).

Figure 5. Immature leafhopper on underside of peanut leaf.

Figure 6. Yellow leaf tip is symptom of leafhopper injury.

Figure 7. Severe leafhopper injuty causes peanut field to have a yellow cast.

Figure 8. Three-cornered alfalfa hopper adult is a green, wedge-shaped insect.

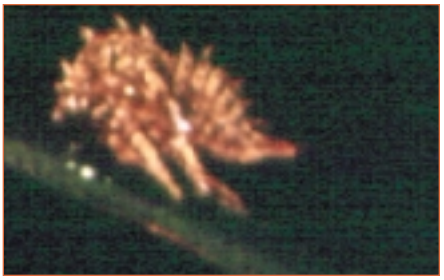

Figure 9. The immature three-cornered alfalfa hopper has spines along the back.

Figure 10. Typical girdling injury on peanut from TCAH feeding.

Figure 11. Yellowing of peanut terminal caused by TCAH feeding.

Figure 12. Early symptoms of spider mite injury on peanuts is speckling on leaves.

Figure 13. Webbing associated with spider mite infestations.

Figure 14. High infestation of mites “ball up” on leaf tips.

Figure 15. Spider mite infestation starting along a weedy field border.

Ron Weeks, *Extension Entomologist,* Associate Professor, Entomology, Auburn University

For more information, call your county Extension office. Look in your telephone directory under your county's name to find the number.

Issued in furtherance of Cooperative Extension work in agriculture and home economics, Acts of May 8 and June 30, 1914, and other related acts, in cooperation with the U.S. Department of Agriculture. The Alabama Cooperative Extension System (Alabama A&M University and Auburn University) offers educational programs, materials, and equal opportunity employment to all people without regard to race, color, national origin, religion, sex, age, veteran status, or disability.

UPS, ?M??, New 7:96, ANR-990

ALABAMA COOPERATIVE Extension SYSTEM

ANR-990