Thrips & Leafhoppers

[Frankliniella fusca (Hinds)]
[Emoasca fabae (Harris)]

Thrips and leafhoppers are usually found in peanut fields. Thrips are tiny insects that feed in the unfolded, developing new leaves by rasping off the upper layer and sucking out the juice. Problems with thrips are most often seen in the first eight weeks after planting.

Leafhoppers are small insects that migrate into North Carolina and Virginia and feed on a variety of crops including peanuts. Both the young nymphs and the adults cause damage by inserting their needlelike mouthparts into the leaflet midvein, injecting a toxic substance, and feeding. The yellowing of the leaflet above the feeding point is called hopper burn, and it develops 5 to 10 days after the feeding.

Scouting for thrips. To check for an active thrips infestation, pick a leaf and slap it on a white index card and watch to see if the tiny specks move around. Thrips are also attracted to flowers. If damage appears to be significant, take samples from 10 sites. At each site, check 10 unfolded leaves and record the number damaged. If 25 percent of the leaves are damaged prior to mid-June and live thrips are found, consider treatment.

thrips feeding damage on peanut foliage
Plants that are growing well are likely to outgrow the damage. Treatment is more likely to be needed if growth is slow. Treatment for thrips after early-to-mid June is not recommended since thrips will feed on spider mite eggs later in the season and are important as biological control agents of those pests. Signs of thrips damage are poor overall appearance, abnormal growth, browning or death of the edges of new leaves, and curled or misshapen older leaves.

**Scouting for leafhoppers.** To check for an active leafhopper infestation, begin scouting in late June and estimate the percent of leaves affected by hopper burn. Since damage appears only after feeding, check to see if leafhoppers are still present by brushing the foliage and watching for adults and nymphs to jump and fly from plant to plant. If leafhoppers are no longer present, there is no need to treat even a heavily damaged field.

**Thrips and Tomato Spotted Wilt Virus.** Thrips are important to control because some transmit Tomato Spotted Wilt Virus (TSWV), which can cause yield losses and even complete plant death in peanuts. Thrips transmit the virus when they feed on peanut plants. Although most of the virus is transmitted early in the season when thrips are most abundant, thrips can transmit the virus throughout the season. Even though very little damage from thrips might be noticed because insecticides kill thrips, the virus is transmitted to the peanut plant rapidly before the thrips are killed with systemic insecticide.

A wide range of plants, both crops and weeds, are hosts for the virus and for the thrips that transmit it. Thrips must acquire the virus by feeding on infected host plants. Thrips feed and overwinter in and among many plants. During the spring while peanut plants are emerging, the thrips move into fields, feeding on peanut plants and transmitting disease.

Even though it seems logical that killing many of the plants that harbor thrips and virus in areas adjacent to peanut fields will reduce levels of virus in peanut, thrips can enter fields from great distances. Depending on wind currents and weather patterns, thrips from many miles away can land and feed on peanuts and subsequently transmit the virus. Efforts to kill all of the vegetation adjacent to peanut fields most likely will not reduce virus in peanuts.

There are no control practices that can be implemented to reduce the virus after peanuts are planted. The major factors that influence the level of virus in peanut—including variety selection, planting date, plant population, in-furrow insecticide, row pattern, and tillage system—are considered and implemented prior to planting.

Poor and inconsistent emergence of peanuts and establishment of spotty peanut stands increase incidence of TSWV regardless of variety selection, planting date, insecticide
choice, and tillage system. Establishing optimum plant stands is critical in managing this pest.

An insect management program that effectively controls thrips will lower the amount of TSWV. Unlike many of the other pests found in peanuts, considerable variation in response to management strategies occurs and should be expected. Weather conditions that influence populations of thrips, the vector for this virus, and their subsequent arrival in fields can vary considerably from year to year. Variation in strains of the virus and the ability of the virus to adapt also contribute to variations in response.

If conditions such as cool or dry weather or chemical burn cause plant stress and slow growth, thrips populations may become large enough to stunt plants. This rarely happens, and foliar treatment for thrips is seldom needed in peanuts that are treated at planting. Because of the somewhat shorter growing season, peanuts in Virginia can suffer more damage and potential yield loss if thrips are not controlled.

**Thrips and leafhopper management.** The action threshold for leafhoppers is damage to 25 percent of the leaves with leafhoppers still present. If the field is to be sprayed with fungicide, a 15-percent threshold can be used, and the two treatments can be applied together. If treatment for southern corn rootworm is planned, rootworm insecticides will also control leafhoppers.

Potato leafhoppers can also damage peanuts; however, research indicates the economic threshold should be somewhere below 50 percent leaf damage. Such levels are not commonly seen, but leafhoppers have been more of a problem in recent years, particularly in fields not treated for rootworms.

An in-furrow systemic insecticide (Thimet, or Temik) applied at planting is the most common approach used to reduce seedling damage from thrips and reduce leafhopper
damage. One way to reduce the incidence of thrips feeding is to plant resistant varieties (VA-98R, NC-V11, and Gregory), in twin rows, or even to higher seeding rates. Reduced tillage or strip till production also appears to help minimize the level of virus. The incidence of the disease will be influenced by the winter and spring weather and the summer growing conditions. The virus is found in many weeds and even in winter annuals, such as chickweed and henbit, providing an opportunity for the thrips to pick up the virus each spring.

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