PLANT DISEASE AND INSECT ADVISORY

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Time for Second Generation of Grape Berry Moth

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The second flight of grape berry moth (GBM) has begun to subside and larval populations will soon become evident in grape vineyards. Degree day accumulations from the three sites that we are monitoring suggest that the second generation is likely evident in the Perkins and Chandler areas, while the Haskell site may be running a little behind (Table 1). When our degree day total is between 1200 to 1600 damage from second generation can be found. Scouting should occur along the borders and into the vineyard at least 10 rows. If 1-2 larvae are found after checking at least 100 clusters, then treatment is justified. Use of chemicals containing *Bacillus thuringiensis* (Bt) is suggested, to help preserve beneficial organisms. Thorough scouting is imperative, since many vineyards will vary in the susceptibility to GBM problems, as indicated by table 1.

Other problems seen over the last few weeks include an increase in stink bug populations. Many growers have recovered egg masses and/or small nymphs of these insects. The eggs are somewhat barrel-shaped. After hatching the young nymphs are hard to distinguish from other tiny insects without the aid of a hand lens. It is uncertain whether or not the nymphs can survive on fruits; however, damage has been observed on many tree fruits, like peaches, plums, apples and pears. To date, no damage has been confirmed from their presence on grapes. These insects have piercing, sucking mouthparts and can cause extensive damage in some crops if the populations are great enough. Dimpling or deformity of the fruit will be a likely symptom of stink bug feeding. Although a number of insecticides will kill stink bugs on contact, providing residual control of new migrants is difficult. Treatments may have to be repeated as adults continue to be found.

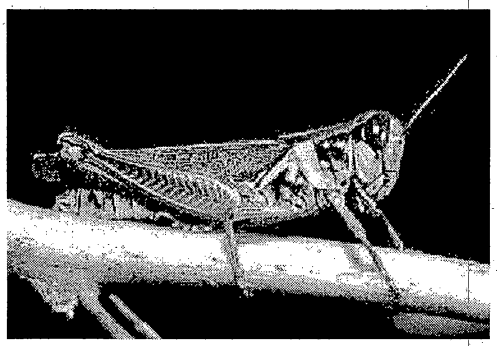
Table 1. Degree day totals and grape berry moth damage through first generation, Oklahoma, 2002.

Location	Degree days*	No. GBM larvae/ 100 clusters during first generation
Chandler	1192.6	2
Haskell	1084	3
Perkins	1205.2	0

* Degree days through 6-17-02.

Grasshopper Problems Continue to Raise Questions

Phil Mulder, Extension Entomologist



Now that the majority of the population of grasshoppers is reaching the adult stage, people are beginning to panic about how to manage the onslaught. Adult grasshoppers are difficult to control, first because they are somewhat more tolerant of the insecticides, but primarily because once they reach the adult stage they are highly mobile and it's much like hitting a moving target. This is why we have stressed the importance of controlling nymphal populations. As the roadside grasses and weeds begin to dry up over the summer, hoppers will look for other succulent food sources, usually in the form of some plant or crop that growers wish to salvage. In some crops, like alfalfa, soybeans, pecans and grapes there are still some good insecticides available for use.

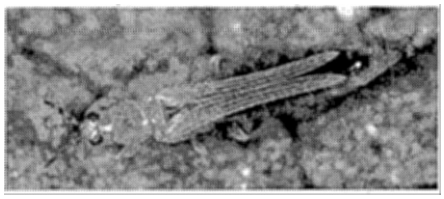
In alfalfa and soybeans Furadan and Dimethoate can effectively control grasshopper populations; however, depending on the formulation used, certain restrictions may apply. Growers should be encouraged to read the label before making these applications and be aware that the treatment will not control the problem for the entire season. Migrating grasshoppers from adjacent fields and other grassy areas will move in and begin to feed on the crop after the effectiveness of the application has passed. If used according to the label on alfalfa, Furadan application at ¼ to ½ pint per acre will provide effective control and only a 7 day waiting period till harvest. On soybeans, the same rate can be used but requires a 21 day pre-harvest interval. In addition, in soybean only two applications per season may be made and grazing a treated crop is not permitted. Dimethoate applications on alfalfa and soybean can also be effective for grasshopper control. See the label for specific rates and restrictions.

In pecan and grapes, Dimethoate is likely the best choice. In pecan use 1 pint per acre, while in grapes use ½ to 1 pint per 100 gallons (not to exceed 400 gallons/acre). When using dimethoate in pecans and grapes, there is a 21 and 28 day pre-harvest interval, respectively. Once again, it should be noted that this application may provide some residual control; however, the majority of effectiveness will be on those hoppers hit directly by the application.

Thrips Populations on the Rise Throughout the State

Phil Mulder, Extension Entomologist

Evidence of moderate to heavy thrips damage has begun to surface across the state this past week. Crops mentioned so far include alfalfa, soybeans, peanuts and cotton. The invasion is likely related to hot, dry conditions once the wheat crop begins to be harvested.



Thrips are small, active, cigarette-shaped, yellow-to-brown insects. They are only about the size of the comma in the previous sentence. Thrips are most commonly associated with furrow irrigated crops grown in close proximity to winter wheat. Infestations commonly occur as the wheat matures and the thrips disperse in search of new food sources. Thrips feeding results in

leaf cupping and distortion that is made severe by plant stress (low moisture and high temperature).

Thrips are a difficult problem to deal with for several reasons. First of all, on some crops, such as alfalfa, there is little if any information on thrips; secondly, thresholds for this pest are hard to establish.

Hot dry weather seems to increase problems by favoring the thrips and stressing the plants, while wet weather favors the plants which can then often outgrow the thrips problems. Much of the literature indicates that there are differences in susceptibility to insecticides among species. Thus, species identification becomes important. There are several species of thrips that could be present in the area including the onion thrips (*thrips tabci*) and the western flower thrips (*Franklinella occidentalis*). While the latter species is common sometimes in peanut and cotton, the majority of the populations in peanut are the tobacco thrips (*Franklinella fusca*).

While these insects are tiny they are known to be fairly difficult to control because of their ability to hide between leaf and other plant surfaces, and their high reproductive potential. Plants can tolerate a fairly significant amount of thrips feeding without suffering much injury; however, under extreme conditions treatment may be warranted. Deciding when to treat is going to be a real challenge. Keep in mind that you are likely to see thrips in most fields; it is only when they are present in high numbers that they may justify treatment. Also since they are moving out of wheat fields into surrounding crops there are probably going to be times where damage becomes noticeable only after the populations have moved on or crashed. So be sure to weigh these factors carefully before making a decision to treat

Soybeans

Thrips on soybeans generally feed on the underside of the leaves and usually reach maximum densities about a month after planting. According to information out of North Carolina on the soybean thrips (Seriothrips variabilis) 6 to 10 thrips per leaf may cause some yellowing but relative little economic damage, but populations of 30 to 60 thrips per leaf have been reported to cause substantial injury. Virginia recommends treatment when 75% of the leaflets are showing damage, the plants are under stress, and thrips average more than 8 per leaflet (note soybeans have leaves with three leaflets so this appears closer to the North Carolina data then maybe obvious at first glance). Early season drought may cause an ordinarily harmless thrips population to become a problem. Thrips damage occurs primarily during periods of vegetative growth and is difficult to distinguish that from a wide range of pests and diseases which cause yellowing and browning of leaves in late summer. Warrior, Sevin XLR Plus, and Penncap-M are labeled for thrips on soybeans.

Peanuts

Thirps on peanut feed primarily during the early vegetative stages and if the populations are heavy enough they can cause some dramatic stunting, cupping of leaves and even burning of leaf tips. Even in light of the more dramatic symptoms, we have never been able to show a consistent benefit from controlling thrips in peanut. For some reason, early-season stress in the peanut plant is compensated for later in the season with a resultant yield that is similar to treated plants. Once the peanut begins to bloom, the thrips move from the newly developing leaves to the blooms. The primary culprit in peanut is the tobacco thrips, which is also the primary vector associated with tomato spotted wilt virus. Although this disease has been noted in Oklahoma, it has not been widespread and most occurrence of the disease has been late enough in the season that it has not dramatically affected yields in those areas infected.

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