



PLANT DISEASE AND INSECT ADVISORY

Entomology and Plant Pathology
Oklahoma State University
127 Noble Research Center
Stillwater, OK 74078



Vol. 6, No. 20

<http://entoplp.okstate.edu/Pddl/>

July 6, 2007

Potato Leafhopper Economic Considerations in Alfalfa and Peanut Phillip Mulder, OSU Extension Entomologist

After a brisk round of southerly winds and rains, some insects that not year-round residents find their way to Oklahoma. Normally, potato leafhoppers are year-round resident of the Gulf Coast states and will gradually migrate northward with spring winds. Because of wind dispersal, potato leafhoppers are likely to be a pest of alfalfa from June to October. Generally, the potato leafhopper poses the greatest threat (if any) in higher rainfall and humidity areas of the state, but this year that description fits many areas. In western Oklahoma, potato leafhopper populations decline as hot, dry conditions prevail unless they can find a suitable host and adequate rain or irrigation. This is where crops like peanut, alfalfa and even horticultural crops such as pecan can serve as viable hosts for these insects.



The potato leafhopper adult is a light green, wedge-shaped insect about 1/8 inch in length. The nymphs closely resemble adults; however, they are smaller, yellow and wingless. Both adults and nymphs are very active; they can move sideways and backward as rapidly as forward when they are disturbed.



Both adults and nymphs use their piercing-sucking mouthparts to feed on alfalfa; however, the most serious damage is caused by the nymphs. Initial feeding is characterized by a wedge-shaped yellow area formed on the leaf tip known as "hopperburn". This type of damage is already noticeable in peanut in the Ft. Cobb area. Heavy feeding causes the entire leaf to turn yellow and heavily infested fields take on a yellow color, even from a distance. Usually, damage is greatest along field margins. Although the chlorotic symptoms may be accompanied by some leaf drop and reduction in quality of forage, a more serious problem is stunting of plant growth and significant yield

loss. Mowing ditches next to alfalfa fields can increase the chance of sustaining leafhopper damage because the leafhoppers move (fly) from the mower noise into adjacent alfalfa.

Due to their minute size, the best means of detecting leafhoppers in alfalfa before damage is apparent is a standard 15 inch sweep net. Sample at least five spots across each field. In each spot take at least 20 sweeps before counting the number of adults and nymphs recovered.

Treatment is generally justified at these combinations of alfalfa height and leafhopper numbers:

| Alfalfa Height (inches) | Leafhoppers per sweep |
|--------------------------------|------------------------------|
| 3 | 0.2 |
| 6 | 0.5 |
| 12 or taller | 1.0 |

Besides height and leafhopper density, yield potential and stand age should also be considered in the treatment decision. For recommendations on insecticide choices in alfalfa consult OSU Fact Sheet #7150.

Thresholds for potato leafhopper in peanut are not well defined and generally don't become a serious problem until later in the season (late July to mid September); however, this year hopperburn is already evident in peanut fields and the rows have not even started to lap. This year will mark the earliest that damage from potato leafhopper has been evident on peanut in Oklahoma. Peanut growers should use caution when deciding to treat for this problem, particularly where leafhoppers are not easily seen. If the insects are common when walking through the peanuts and 25-30% of the plants show hopperburn then treatment can be justified. Unnecessary applications of insecticides during hot weather can lead to mite flare ups, so please be certain that control of leafhoppers in peanut is justified. Chemical recommendations on peanut can be obtained in OSU Fact Sheet # 7174.

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Issued in furtherance of Cooperative Extension work, acts of May 8 and June 30, 1914, in cooperation with the U.S. Department of Agriculture, Robert E. Whitson, VP, Dean, and Director for Agricultural Programs, Oklahoma State University, Stillwater, Oklahoma. This publication is printed and issued by Oklahoma State University as authorized by the Dean of Agricultural Sciences and Natural Resources.