

PLANT DISEASE AND INSECT ADVISORY



Entomology and Plant Pathology
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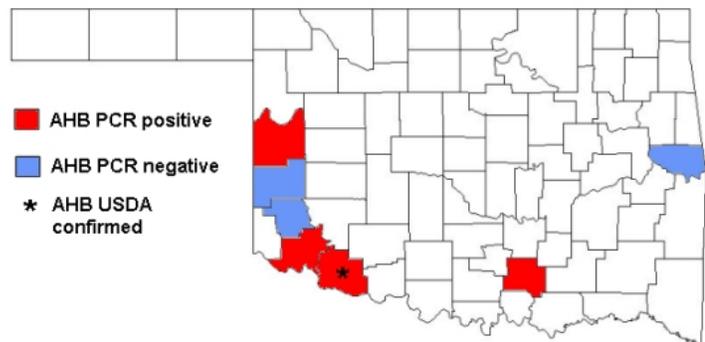
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Website: <http://entopl.okstate.edu/Pddl/advisory.htm>

Sep 20, 2004

Africanized Honey Bee Update Richard Grantham, Entomologist-Dir., PDIDL and Phil Mulder, Extension Entomologist

The Plant Disease and Insect Diagnostic Lab received three new samples from ODAFF to test for AHB. It appears southwest Oklahoma is the current "hotspot" for suspect bees (see map at right). Samples from Sweetwater (Beckham County) and Brinkman (Greer County) tested negative but a sample from Cheyenne (Roger Mills County) tested positive and has been submitted to USDA for confirmation.



The AHB website is now up and running at <http://entopl.okstate.edu/ahb/index.html>. We will continue to update the map as new samples are analyzed.

Remember, to contact Doug Dear at (405) 205-2699 for assistance in collecting and eradicating suspect colonies. Oklahoma Department of Agriculture, Food, and Forestry and Entomology and Plant Pathology/Oklahoma Cooperative Extension service will be conducting AHB certification training in Altus on October 6 and Durant on October 7. Although these training sessions are designed primarily for pest control operators, extensions educators would be welcome to attend. Please contact us for more information.

Downy Mildew Outbreak in Late-Season Watermelon John Damicone, Extension Plant Pathologist

Watermelon harvest is winding down over most of the state. However, some growers have late-season fields planted for the post-Labor Day market. A few weeks ago, Jim Shreffler indicated that downy mildew was becoming a problem in southeastern Oklahoma at the WWAREC in Lane. Since then, I have observed downy mildew in several areas of the state. At the Oklahoma vegetable research Station in Bixby, downy mildew completely defoliated areas of the field where fungicide coverage was poor. At the Agronomy Research Station in Perkins, downy mildew defoliated abandoned plots

of watermelon where no fungicide was applied. I have also seen several small-low input patches of watermelon defoliated by downy mildew in recent trips around the state. The disease is probably a state-wide problem.



Downy mildew appears as large, circular to irregular, dark brown spots on the older leaves around the crown of the plant (left). Young spots are usually surrounded by a yellow border. The spots are larger and rounder than those caused by anthracnose. Affected leaves curl inward and die, and affected fields appear scorched (below). Unlike anthracnose, the disease does not attack stems and fruit. Fields become rapidly defoliated under favorable conditions of moderate temperatures, and prolonged periods of leaf wetness from rain or dew.

Downy mildew is a sporadic disease that occurs every 2 to 3 years in Oklahoma. It generally occurs late in the season, but it has been observed as early as June. As cucurbit planting extends northward each year, the downy mildew fungus produces airborne spores that move with wind currents from diseased fields in Mexico and Texas prior to their arrival in Oklahoma. The spores are thought to be rained out of the air currents and deposited onto fields where they cause disease if conditions are favorable. There are five known biotypes of the pathogen. All biotypes attack cucumber and cantaloupe. Biotype 4 also attacks watermelon while Biotype 5 also attacks watermelon, pumpkin and squash. In the eastern US, biotype 5 is a severe problem on pumpkin and squash in addition to watermelon. In Oklahoma, downy mildew has not been observed on pumpkin or squash. Because of the sporadic nature of downy mildew outbreaks in Oklahoma, we have been trying to use the downy mildew forecast system developed at NCSU to better anticipate disease outbreaks. However, forecasts were not posted in 2004 because of budget and labor restraints.



In late-season plots of watermelon at Perkins, fungicide programs with Bravo, Dithane+Topsin, and Cabrio are providing excellent disease control. In a few plots where the disease was present at low levels prior to the first fungicide application, some

defoliation has occurred. There is currently no disease in plots that were clean at the first application. This is why I have recommended preventive fungicide applications on watermelon. A minimum program would be three applications of a broad-spectrum treatment (Bravo, Dithane, etc.) on 14-day intervals beginning at flowering. If disease is detected or weather is very favorable, intervals can be shortened to 7-day.

Tomato Spotted Wilt Virus on Tomato **John Damicone, Extension Plant Pathologist**

Tomato spotted wilt is a thrips-vectored virus disease that attacks tomatoes, peppers, and numerous other crop and ornamental plant species. Spotted wilt was recently identified as a problem in a tomato operation in southeastern Oklahoma. Apparently the majority of the plants were producing fruit with ring spots (right). Foliage from the plants that tested positive had the typical brown flecking or “bronzing” symptom (below). In Oklahoma, spotted wilt has been more of a problem in greenhouses than in the field. It is thought that the virus is imported into greenhouses in infected bedding plant stock. Thrips then spread the virus to other plants in the greenhouse including vegetable transplants.



Over the years we have encountered greenhouse operations in which nearly all of the plants are infected. We felt that most cases of spotted wilt in vegetable crops in the field were a result of greenhouse contamination of transplants. Some late-season spotted wilt was seen in peanuts along the Red River during the late 90's, but the disease has not been found in peanuts for several years.



In the southeastern US, tomato spotted wilt virus has become established in the field where it survives in weedy vegetation and in overwintering thrips. Tomato production has been severely reduced or eliminated in some areas. The virus has most recently impacted tomato production in Arkansas. The source of the virus in this recent case is not known, but this disease is worth watching out for in the future. Tomato and peppers transplants are best purchased and produced in greenhouses dedicated to that purpose. Insecticide programs for control of thrips are beneficial in the greenhouse, but not in the field. There is only one tomato variety (BHN 444) that I know of that is reported to be resistant to spotted wilt.

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