



# Pest e-alerts



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## Notice

Jen Olson will be on vacation and then at a professional meeting from August 2 through August 16. During this time period, there will be no Plant Disease Diagnostician in the PDIDL to examine samples. If possible, please hold off on collecting and submitting samples until she returns from vacation. All plant disease samples will be placed in cold storage as they arrive and Jen will examine them in the order received upon her return. If you have an emergency, please contact Dr. Rick Grantham at 405-744-9417 or [entoman@okstate.edu](mailto:entoman@okstate.edu).

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### Vegetable Crop Disease Update

John Damicone, Extension Plant Pathologist



The rainy summer experienced this year has been more interesting on the vegetable disease front compared to the last two summers where spider mites pretty much destroyed what the drought did not. Below is a summary of vegetable diseases that have been observed during some recent farm visits or that have been submitted to the OSU Plant Disease and Insect diagnostic laboratory. Most of these diseases are the same old suspects we have observed in past years.

#### Bacterial spot of tomato and pepper

Bacterial spot is the most common foliar disease of peppers and one of the most common on tomatoes in the state. Small brown spots 1/8 in in diameter (Figs 1 and 2) often appear oily on the underside of leaves. Severely spotted leaves yellow and die, generally beginning on the lower leaves and progressing upward. This disease takes off in hot humid weather. The bacteria that cause this disease survive on crop debris, seed, and can be present on transplants with or without symptoms. The disease is best controlled on peppers with resistant (X3R)

varieties. On susceptible pepper varieties and tomatoes, a preventive spray program with copper fungicide or with mixtures of copper and conventional fungicides is required. A spray program should begin at first bloom, before symptoms become severe.



**Fig. 1.** Bacterial spot on tomato.



**Fig. 2.** Bacterial spot on pepper.



**Fig. 3.** Leaf scorch phase of bacterial canker of tomato.

### **Bacterial canker of tomato**

This disease causes a leaf scorch (marginal leaf burn) (Fig. 3) and progresses inward causing dieback anywhere on the plant. This disease is mostly a problem in commercial tomato production where it can become a persistent problem. Management relies on sanitation, use of clean seed and transplants, and residue management.

### **Early blight of tomato**

Early blight is probably the most common foliar disease of tomato world-wide. Leaf spots are large brown spots up to ½ inch in diameter. Spots often have a target-like appearance with dark rings within the spots (Fig. 4). The disease causes defoliation of plants from the bottom up. Management relies on a preventive spray program with the fungicides chlorothalonil or mancozeb. Many other fungicides are effective for commercial production. Early blight is unusually prevalent this year.



**Fig. 4.** Early blight of tomato.



### Physiological leaf roll of tomato

Leaves roll inward and become tough and leathery (Fig. 5). This is an abiotic disease associated with certain varieties and environmental conditions such as heavy rainfall and high humidity. Leaf roll has been particularly heavy this year. Leaf roll is not thought to cause yield loss but severely affected plants may have higher levels of culled fruit from sunscald.

**Fig. 5.** Physiological leaf roll of tomato.

### Watermelon anthracnose

This is the most common foliar disease of watermelons in Oklahoma. It causes brown angular leaf spots (Fig. 6) on leaves, and lesions on stems and fruit. The disease is splash dispersed and requires frequent rains or sporadic rains and irrigation to trigger the disease. The disease is controlled by residue management, crop rotation, and a preventive fungicide program.



**Fig. 6.** Anthracnose on watermelon.

## Cucurbit powdery mildew

I recently received a report of powdery mildew on watermelon in western Oklahoma. The disease is easy to diagnose. It causes a white powdery growth on upper and lower leaf surfaces (Fig. 7) that can completely engulf leaves causing them to turn brown and die. Powdery mildew is a common disease of susceptible cucurbit varieties. Powdery mildew is favored by moderate temperatures, cloudy weather, and high humidity. The disease is best controlled by planting resistant varieties (cucumbers, cantaloupe, pumpkin, and squash). Where susceptible varieties are planted, a spray program with sulfur or another fungicide recommended for control of powdery mildew is recommended to maintain vine productivity.

Consult the latest edition of the OSU Extension Agents Handbook (Circular E-832) for more information of fungicides and bactericides registered for use of vegetable crops.



**Fig. 7.** Powdery mildew on watermelon.

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**Director, Plant Disease and Insect Diagnostic Laboratory**

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