



This bulletin from the Cooperative Extension Plant Health Clinic (Plant Disease Clinic) is an electronic update about diseases and other problems observed in our lab each month. Input from everybody interested in plants is welcome and appreciated.

Corn

Symptoms of bacterial stalk rot generally appear in midseason when plants suddenly lodge. One to several internodes above the soil line appear water-soaked, tan-to-dark-brown colored, and slimy. The stalk tissue will have a chewed-on appearance and a bad odor. When environmental conditions are right, a top rot can also develop where corn is sprinkler irrigated. Tips of upper leaves wilt, and a slimy-soft rot occurs at the base of the whorl. The rot spreads rapidly downward until the entire plant collapses. *Erwinia chrysanthemi* pv. *zea* is the causal agent. It survives only in above-ground residue. Fields most at risk are those prone to flooding and those sprinkler irrigated with impounded water. Fortunately, the disease is not common. The best control is achieved by fall plowing to incorporate crop debris and good management practices to avoid flooding.



Bacterial rot at node

Sherrie Smith/University of Arkansas Cooperative Extension

Strawberry

Crown rot caused by *Phytophthora cactorum* can cause serious losses when environmental conditions are right for disease development. First symptoms are the youngest leaves turning blue-green and suddenly wilting. The plant quickly collapses and dies as the wilting

spreads to the entire plant. Typically, the upper portions of the plant break off at the top of the crown when pulled on. Dissection of the crown reveals extensive brown necrosis and disintegration. Sometimes a plant will wilt on only one side, depending on the number of crowns affected. *Phytophthora* requires a warm period with prolonged soil wetness for infection. Plants with wounds are particularly susceptible. Control consists primarily of planting resistant cultivars, ensuring adequate drainage, and avoiding planting in low, wet spots. Once wilting has occurred, plants can't be saved. Ridomil Gold and Aliette are labeled for *Phytophthora* diseases in strawberries.



Phytophthora crown rot

Sherrie Smith/University of Arkansas Cooperative Extension

Watermelon

Honeydew, musk melons, cantaloupe, pumpkin, citron, and squash are all susceptible to bacterial fruit blotch. However, watermelon is the primary host for this disease caused by *Acidovorax avenae* subsp. *citrulli*. The bacterium is seedborne in most cucurbit species and can be present upon seedling germination. The cotyledons develop irregularly shaped, water-soaked lesions that



become red-brown with age. Young seedlings can collapse and die. On leaves, spots are small, water-soaked to brown, irregularly shaped, and with angular edges. Rain and irrigation splash spread the bacterium from plant to plant. The most damage occurs to fruit, with the young fruit being the most susceptible. The upper parts of the fruit develop small, irregularly shaped, water-soaked lesions—dull gray-green to dark green—that rapidly enlarge to large blotches that can cover most of the fruit. Older lesions may turn brown to red-brown, necrotic, and with amber-colored exudates oozing out of the center of the blotch. These lesions may eventually turn black as secondary decay organisms enter the fruit. The use of clean seed and a three-year crop rotation are the best ways of avoiding bacterial fruit blotch. Cucurbit weeds and volunteer hosts should be removed. Overhead irrigation should be avoided if at all possible. Copper-based sprays can provide some control but does no good once the fruit is already infected.



Bacterial fruit blotch

Sherrie Smith/University of Arkansas Cooperative Extension

Roses

Roses are arguably the most popular flowering shrub grown. The best roses have delightful scents, color, and form. There is a rose to fit any space, whether a miniature is needed or a scrambler that will grow 30 feet or more up a support. The downside of roses is their susceptibility to a number of diseases. Stem canker of roses can be a persistent problem. Canker disease is caused primarily by the fungus *Cryptosporella umbrina*, or by *Coniothyrium* spp. Symptoms start as small,

red-to-purple spots on the current year's canes; with time, these spots usually develop into gray-white lesions. A whitish patch can be seen as the small spots are massed together. In time, the white lesions continue to enlarge, and brown or black cankers (several inches long) form, girdling the stem and resulting in death. The cankers may extend down into the crown of the plant and kill the entire plant. Canker spores enter the canes through wounds made by pruning, insect feeding, or natural breakage. The very best control is achieved through good sanitation. All dead and dying canes should be removed from the plant whenever they are discovered. Pruning out canes that rub each other, causing rubbing wounds, is also helpful. A spray program using rose sprays or Daconil helps prevent the establishment of canker diseases.



Sherrie Smith/University of Arkansas Cooperative Extension



Cotton by Terry Kirkpatrick and Scott Monfort

Fusarium wilt (FW) is showing up in fields this year about a month earlier than normal. Over the last two weeks, we have identified this problem statewide with confirmed FW in fields in Greene and Mississippi counties in NE Arkansas and in Lonoke and Desha counties in the central and southern areas. In all cases, wilted plants and poor areas in the fields were associated with severe root-knot nematode infection. FW symptoms are pretty obvious with stunted, chlorotic plants showing symptoms that can be confused with acute nutrient deficiency or post-emergence seedling disease caused by *Rhizoctonia* (Fig. 1 A & B). *Fusarium oxysporum* f. sp. *vasinfectum* infects the roots and then grows in the vascular tissues of the cotton plant, ultimately plugging the xylem vessels and shutting the water off to the plant. A diagnostic feature of FW is a discoloration of the vascular cylinder that is easily seen if the stem is sliced (Fig 2). Unfortunately, this symptom, while indicative of a vascular wilt, is not sufficient to distinguish FW from *Verticillium* wilt that is caused by a different organism and may also occur in Arkansas.

Laboratory culture is necessary to determine which one of the two organisms is the cause of the problem. Once infected by FW, most plants never recover. If FW (or *Verticillium* wilt) is suspected, collect 6–8 plants, remove the tops, and submit the lower stems (3–4 inches) with the root system attached to the Plant Disease Diagnostic Clinic in Lonoke.



Fusarium wilt

Photo taken in Desha Co., June 11, 2007. Courtesy of A.J. Fordice, Dow AgroScience.

Herbicide Damage by Bob Scott

Herbicide symptomology quiz!

This herbicide is used in burndown applications made prior to planting soybeans. However, there is at least a 14-day plant-back interval following this application before beans can be planted safely. Can you name this member of the phenoxy herbicide group. Be the first to email me at bscott@uaex.edu with the correct answer.

Bob



Fusarium wilt

Vascular discoloration and root galls. Courtesy of A.J. Fordice, Dow AgroScience.

