UNIVERSITY OF ARKANSAS DIVISION OF AGRICULTURE
Cooperative Extension Service

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PLANT HEALTH CLINIC NEWS

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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.

Tomato

Timber rot, also known as Sclerotinia stem rot and White mold, is a problem during cool, moist, growing conditions. We are only seeing it now on plants that were killed earlier in the season. The disease can be confused with Southern blight which has similar symptoms. However, we see Timber rot primarily earlier in the year at flowering time. Also, the sclerotia of the Timber rot pathogen are black and irregular instead of the small spherical tan to brown sclerotia found in Southern blight. Symptoms are water soaked areas that develop in leaf axils or in stem joints where fallen flower petals have lodged. The stems become soft and mushy and eventually die. The entire plant may wilt. Infected stems turn a distinctive bleached, light gray. White cottony mycelium is often present on the stems during cool, moist weather. Black sclerotia of variable size and shape form on the mycelial mats and inside stems. Infected fruit turns gray and breaks down rapidly in a soft rot. In closely planted fields, circular patterns of dead and dying plants can occur. Timber rot is caused by two species of Sclerotinia, *S. sclerotiorum* and *S. minor.* These fungi cause disease on more than 360 species of plants, including tomatoes, peppers, celery, beans, cabbage, potato, lettuce, and sunflower. Tomatoes should be planted in well –drained soils and rotated with non-host crops such as corn. Sanitation is very important in controlling the disease in commercial fields. All crop debris should be removed. Endura and Quadris are labeled for control of Timber rot. Note that the disease is not active during hot weather. Fungicides should be used early in fields where there is a history of Timber rot.

Timber rot

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Timber rot sclerotia

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Bean

Cucumber mosaic virus (CMV) affects some 775 plant species world-wide. Tomato, pepper, potato, eggplant, cucumber, melon, and bean are just a few species that are susceptible to Cucumber mosaic virus. Foliar symptoms on beans are prominent leaf epinasty (downward bending), leaf curling, green or chlorotic mottle, blisters, green vein-banding, and a zipper-like rugosity, (rough and wrinkled), along main veins. Pods will be mostly curved, mottled, and smaller in size than normal. Cucumber mosaic virus is transmissible through infected seed, and in a non-persistent manner by many species of aphid. Infections can persist on overwintering weed hosts. Virus is not curable. Management consists of using virus free seed, eradication of weed hosts, aphid control, and the use of resistant cultivars.

Bean yellow mosaic virus (BYMV) is an aphid transmitted virus. It is of world-wide distribution, occurring wherever beans and other legumes are grown. Cultivars, plant age, strains of the virus, vectors, and environmental conditions determine the severity of the disease. Foliar symptoms consist of contrasting dark and yellowish green areas, usually with bright yellow spots. Rugosity, malformation, and stunting may also occur. Necrotic spots, veinal and apical necrosis, wilting, and premature death can afflict some cultivars. Although insecticides to control aphids is an option, the use of resistant cultivars is the most economical and efficient method of control. There is no treatment or cure for plants that already have virus. Pull them up and destroy them.

CMV on bean

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CMV on bean

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Bean yellow mosaic virus

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Blackberry

Crown gall, caused by *Agrobacterium tumefaciens*, is a common and serious disease of blackberry. It is caused by a soilborne bacterium that produces root and crown galls on woody plants in at least 93 families. Galls are often located at the crown of the plant at or near the soil line, and on roots and canes. Galls initially are soft, spongy, and whitish in color. With age they blacken, and become hard and warty looking. The galls disrupt water and nutrient uptake and transport in the plant. Plants with large numbers of galls are weakened, stunted, and unproductive. Foliar chlorosis, small and seedy fruit, wilting, and death can result from infections from crown gall. The bacterium requires a wound to enter the plant. Wounds from pruning, cultivation, harvesting, insect feeding, frost damage, leaf scars, or lateral root formation can allow access points for infection. It is critical to establish plantings in uninfested soil, using pathogen-free plants. Fields with a history of crown gall should be avoided for 2-3 years. Fields with a history of grains, vegetables, or pastures are relatively safe as these crops are non-hosts. Insect and nematode control reduces wounding of the roots. Pruning during the dormant season is safer than pruning during the growing season when the bacterium is most active. Dipping the roots and crowns of new plants in Galltrol, a competing non-pathogenic strain of Agrobacterium helps prevent crown gall.

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Rice by Bob Scott

Glyphosate damage on rice; Note flags stuck at the boot stage and pinched stems.

Roundup damage on rice

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