

Plant Disease Notes

Bitter Rot of Apple

ANR-1180

Bitter rot, caused by the fungus *Colletotrichum spp.*, is the most important summer fruit rot disease of apples in the Southeast. In some seasons, it can cause losses approaching 100 percent in a few days. All cultivars of apple grown in the Southeast are susceptible to bitter rot. The fungus that causes bitter rot can also infect leaves and cause cankers on the tree; however, these phases of the disease are not as important as fruit infections.

Symptoms. Fruit infections can occur soon after bloom and appear as small, gray to brown flecks that may not enlarge until later in the summer. The most damaging fruit infections occur more than a month after petal fall. Small, sunken brown lesions, sometimes surrounded by a red halo, will form. The halo is especially visible on green or yellow fruit. When lesions are about 1 inch in diameter, the fungus forms small, black fruiting structures about the size of a pinhead around the infected area. In wet weather, masses of cream to salmon-pink colored spores are produced on the surface of the lesions. As the lesions enlarge, the rot progresses to the core of the fruit in a V-shaped pattern. This pattern differs from Bot rot that forms a cylindrical rot pattern extending to the core. Leaf spots, which are uncommon, start as

small, red flecks that enlarge to irregular brown spots about $\frac{1}{16}$ inch. Infected leaves usually drop prematurely.

Persistence and Transmission.

The bitter rot fungus survives the winter in dead wood on the ground and in the tree and in mummified fruit that hangs on the tree. Spores are produced during rainy periods in the spring and summer. The optimum temperature for spore germination is about 80 degrees F. The amount of infection increases with increasing length of the wetting period. Fruit infection can occur from bloom through harvest; however, most infection occurs from midseason to harvest. The disease is frequently more severe on early maturing cultivars. Epidemics occur during prolonged periods of wet, warm weather. The most severe epidemics occur in seasons with warm, wet periods early in the season, followed by similar weather patterns later in the year.

Control. Bitter rot control is dependent on good orchard or tree sanitation. Dead wood, including the current season's "fire blight" strikes, needs to be removed from the tree and ground and either burned or buried. Chopping the wood with a flail-type mower removes the bark, eliminating potential overwintering sites. All fruit mummies hanging on the tree must also be re-

moved. If practical, remove diseased fruit from the tree to reduce the rate of spread of the disease. Fungicides applied from first cover until harvest on a 2-week schedule are effective if a good sanitation program is followed. See Extension publication ANR-500-A, *Alabama Pest Management Handbook, Volume 1*, for a list of recommended fungicides and spray schedules.



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Edward J. Sikora, *Extension Plant Pathologist*, Professor, Entomology and Plant Pathology, Auburn University

For more information, call your county Extension office. Look in your telephone directory under your county's name to find the number.

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