

Problem: Brown Rot of Fruit Trees - *Monilinia fructicola*



Host Plants: Peach, Nectarines, Apricots, Plums, Cherries, Apples

Description: The disease may affect blossoms, twigs, and fruit. Generally, there are two major infection periods of the brown rot fungus. They occur during blossom and beginning several weeks before harvest.

The blossom blight phase occurs in early spring during bloom. Young petals first develop brown spots, but the blossoms quickly turn brown or black and die. Small tufts of dusty brown to gray fungal growth can be seen growing on the dead blossoms. The loss of some blossoms in the spring is not serious in itself; however, inoculum produced on the rotting blossoms serves to infect developing fruit later in the season. The fungus also may move from blighted blossoms into the twigs, causing small, elliptical cankers. In some cases, these cankers will girdle and kill twigs. Bleeding or gum production often is associated with twig cankers.

The second phase of the disease occurs as fruit begins to mature. Inoculum produced on blighted blossoms, twig cankers, or from nearby wild plums infects maturing fruit. Affected fruit develops light brown spots that enlarge rapidly. The fruit may be completely rotted within a day or two. The fungus sporulates profusely on the rotting fruit, giving the peaches a dusty brown appearance. The rotting fruit shrivels to form a structure called a mummy, which is completely colonized by the brown rot fungus. These mummies may remain attached to the tree or drop to the orchard floor. Fruits thinned at or after pit hardening also provide a good medium for the fungus and are an important source of inoculum for mature fruit infection.

The fungus overwinters primarily in dried fruit called mummies. Primary spores are produced from mummies on the ground or on those still attached to the tree and are dispersed by wind. Infection of blossoms may occur at temperatures as low as 41°F, but the optimal infection temperature is 77°F. The presence of free water on the petal or fruit surface is necessary for infection. Secondary spore production on blighted blossom serves as inoculum for infection of maturing fruits later in the season.

Recommendations: Sanitation is very important in the overall management of brown rot. Fruit thinned after pit hardening should be removed from the orchard during thinning operations. After harvest, remove all rotted fruit and mummies from the trees and ground. Prune out twig cankers during the summer months. Avoid pruning in fall because this can increase the incidence of Cytospora canker. Wild plum thickets are an important source of primary and secondary spores and should be eradicated adjacent to peach orchards. Trashy cultivation at early bloom will help destroy developing fruiting structures on the mummies, but do not disc the orchard because this will increase the likelihood of Cytospora canker.

Several fungicide applications are required during the critical infection periods of bloom and fruit ripening. Early sprays should be applied at pink, bloom, and petal fall. Control of the fruit rot stage should begin about one month before harvest and continue on a 7- to 10- day schedule. Homeowners can apply myclobutanil (Immunox, F-Stop Lawn & Garden Fungicide, Monterey Fungi-Max) or Captan (may cause inking on fruit) for control. Commercial apple growers or other large-scale growers should consult the current Midwest Fruit Pest Management Guide at the following website:

<https://store.extension.iastate.edu/product/14488>

References:

1. [Brown Rot on Tree Fruit in the Home Orchard](#), Purdue Extension, BP-45-W
2. [Brown Rot of Stone Fruit](#), Ohio State University Extension, Fact Sheet HYG-3009-08

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