



Stone Fruit IPM for Beginners

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Chapter 6

American Brown Rot

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American Brown Rot

Monilinia fructicola

Hosts 

Nectarine, peach, plum, prune, sweet cherry, tart cherry

Time of Concern

Bloom to petal fall; preharvest

Damage, symptoms and disease cycle

The American brown rot fungus infects nectarines, peaches, plums, prunes, sweet cherries, tart cherries and other stone fruit. American brown rot infection is typically a preharvest concern as fruit begin to ripen and increase in sugar content. Under ideal conditions, American brown rot infection can also be a concern at pre-bloom (white or pink bud stage) through bloom, causing blossom blight and infecting spurs and woody tissue.

The American brown rot fungus overwinters in mummified fruit, spurs and twig cankers. Mummies are fruit that were infected the previous season, shriveled up and either remained on the tree or fell to the ground in the orchard. These mummies serve as the initial inoculum source in the subsequent spring.

Fungal spores develop on mummies left hanging in trees or other infected woody tissue in the spring when temperatures reach 55-77 degrees Fahrenheit. Wind and rain disseminate spores onto flowers where infection can occur. Although the fungus more readily infects open flowers, infection at the white bud stage is possible in optimal temperatures between 68-86 F during long periods of wet conditions of a minimum of five to 10 hours; more severe infections can occur if wet periods last for 24 hours or longer. The optimal temperature range for blossom blight development is 72-77 F, but temperatures between 68-71 F are also conducive for infection. During long wetting periods and when high inoculum levels are present, infection can occur at temperatures that are lower and higher than this optimal range.



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Sporulating fungi of the American brown rot pathogen on June drop sweet cherry (above) and on a cluster of ripening sweet cherries (below).



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Fungal spores (conidia) from overwintering mummies, cankers and blighted blossoms also infect fruit. Damaged fruit are particularly susceptible to infection when conditions favor this disease. A few hours of wet weather and temperatures between 68-77 F are optimal conditions for infection. During the preharvest period, infected fruit lesions produce conidia that can spread quickly causing outbreaks of fruit rot.

IPM steps for beginners

Unlike European brown rot (*Monolinia laxa*) that is favored by cool and wet conditions, warm and wet weather is ideal for American brown rot development. The risk for infection is directly related to the amount of overwintering inoculum. Typically, sustained relative humidity values of 90 percent or above for 24 hours or more following wet periods are associated with optimal infection events; infections are less likely if relative humidity drops below 60 percent for an extended period following rain.

The key to managing American brown rot is using well-timed fungicide applications when weather is expected to be ideal for disease development.

- ▶ Prune to remove mummies and cankers from trees before bloom.
- ▶ This disease is particularly concerning in years with heavy crop load or if fruit become damaged. Effective insect management will help to prevent rot development.
- ▶ Possible fungicide options for managing this disease include the sterol inhibitors and succinate dehydrogenase inhibitors. American brown rot is becoming resistant to sterol inhibitor fungicides (documented in Michigan). Therefore, in areas with fungicide resistance, alternative modes of action should be used.
- ▶ Review all fungicide labels and supplemental labels prior to application for additional information on permitted uses.