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Stone Fruit Disease - Rhizopus Rot

Rhizopus rot, caused by *Rhizopus nigricans*, can be very destructive to harvested fruit.

 ARTICLES | UPDATED: JUNE 18, 2018



Tiny, black, spherical structures are produced on stalks above the white mold. Each of these contains thousands of spores that are released to float in the air. Photo by K. Peter.

skin of brown rotted areas is tough and leathery. At normal temperatures, the small spots of Rhizopus rot enlarge rapidly and can involve the entire fruit in 24 to 48 hours. A white, whiskery mold appears on the surface of infected fruits, spreading to nearby fruit and the walls of the container. By this time the fruit tends to leak and to smell like vinegar. Finally, tiny, black, spherical structures are produced on stalks above the white mold. Each of these contains thousands of spores (sporangiospores) that are released to float in the air. At this stage the mold looks mostly black.

While it can develop in hail-injured or cracked fruit on the tree, it most commonly affects fruit in storage, during transit, and at the marketplace.

Peaches, nectarines, sweet cherries, and plums are most susceptible.

Symptoms

Rhizopus rot begins much like brown rot--as a small, brown, circular spot--but with a detectable difference. The skin of Rhizopus rot-infected fruit slips readily from the underlying flesh, while the

Disease cycle

Rhizopus rot occurs on all decaying vegetation, including ripe fruits and vegetables. When environmental conditions are not favorable, it produces thick-walled zygospores that can withstand long periods of cold and drying. These are present on dead vegetation, in used fruit containers, and in packhouses and storages. Thus, some type of spore of the Rhizopus rot fungus is always present where fruit is handled.

An injury through the skin of fruit must be present for the first infections to occur, and injuries as tiny as the prick of a pin are sufficient. In packed fruit or clustered ripe fruit on trees, the fungus can spread over the uninjured skin from an infected fruit nearby and eventually cause a rot. High temperatures and humidities favor the rapid growth of the fungus and decay of fruit.

Disease management

Preharvest fungicides for mitigating brown rot should include at least one fungicide application that is a FRAC group 11. This class of fungicide is the most effective for preventing Rhizopus rot. More importantly, preventing skin cuts and punctures during harvest and packing is prime in controlling Rhizopus rot. Clean containers and good housekeeping in the packing shed and storage will aid greatly in reducing the spore population. Quickly removing field heat drastically slows decay, as does refrigerating fruit until it is sold to the consumer or is processed.