



# Stone Fruit IPM for Beginners

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## Chapter 15

### Post-harvest rots

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#### Post-Harvest Rots – Rhizopus, Alternaria and Sour Rots

**Hosts** 🍑 🍎 🍒

Peaches, nectarines, apricots, plums and cherries.

#### Time of concern

Pre-harvest to storage.

#### Damage, symptoms, disease cycle

In addition to brown rot, several other fruit rot disorders can show up in storage. Rhizopus rot caused by the fungus *Rhizopus stolonifera* is responsible for overripe fruit rot in the orchard and can ruin fruit in storage. It is more commonly reported on peach and nectarine, but also occasionally on plum, cherry and apricot. Fruit infected by *R. stolonifera* develop a soft watery rot and “slip skin” due to the pectin enzyme activity of the pathogen. Infected fruit develop abundant white fungal growth followed by the massive production of black spores. *R. stolonifera* is common in orchards and can infect fruit through wounds. Fruit contaminated or infected with *R. stolonifera* can infect other fruit in storage.

Alternaria rot, caused by the fungus *Alternaria alternata*, is more common on fruit of sweet cherries and apricots than on other stone fruit. It is primarily a problem in cold storage, but can be seen on overripe or injured fruit in the orchard. *A. alternata* produces dark green to black growth on infected host material. The rot tends to be more superficial, darker and more compact than *Rhizopus*. *A. alternata* is a common contaminant in orchards and packing sheds.

Sour rot, caused by the fungus *Geotrichum candidum*, is an occasional post-harvest problem for peach and nectarine. Like Rhizopus rot, *G. candidum* is characterized by fine white mycelia, watery, soft fruit rot with some skin slippage. Sour rot has a distinctive vinegar smell, and does not develop the abundant white mycelium and black spore masses seen from *Rhizopus*.



Peach with Rhizopus peach rot showing loose skin.



Peach with Rhizopus peach rot showing abundant black sporulation.

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## IPM steps for beginners

Orchard, harvest and post-harvest sanitation and proper refrigeration conditions are important for managing these rot organisms. These three fungal pathogens and other less common fruit rots such as anthracnose (*Colletotrichum*) and gray mold (*Botrytis cinerea*) are favored by wounds, moisture and warm conditions. Fruit harvested mature and held at room temperature are prone to rot by these fungi.

- ▶ Avoid injury to fruit by insects during the growing season.
- ▶ Use fungicides effective against rot organisms during bloom and as fruit color near harvest.
- ▶ Avoid picking infected fruit during harvest.
- ▶ Maintain clean harvesting, packing and storage conditions.
- ▶ Cool fruit promptly following harvest, ideally below 40 degrees Fahrenheit, and consider pre- or post-harvest fungicide treatment and using treated water in packing operations.



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Peach showing sour rot infection.



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Sweet cherry fruit with alternaria rot symptoms.