Fruit rot of blueberry is a serious problem throughout the United States. Alternaria fruit rot is the most common and severe postharvest rot of blueberry, although it can be seen in the field on overripe fruit. Anthracnose (ripe rot) is a serious preharvest and postharvest disease. Botrytis fruit rot is typically a minor disease but can become severe. Other fruit rots are less common. Losses result from unmarketable fruit.

Symptoms

Damage caused by excessive handling or handling wet fruit, or injury caused by heat, cold, or chemicals may be confused with fruit rot symptoms. Excessive wet weather during harvest can also result in berry damage that can be confused with fruit rots. Fruit rot caused by Alternaria first results in sunken lesions on berries. Later, a gray-green mass of fungal mycelium and dark green spores may be seen on the surface of the berry (figure 1). Lesions may also develop on leaves as small (quarter-inch diameter), generally round necrotic spots with a reddish brown edge. Defoliation can occur if leaf infection is severe.

Anthracnose fruit rot causes the berries to decay rapidly and to ooze an orange mass of fungal spores (figure 2). If berries are stored at room temperature, symptoms can develop in as little as two days. Dark brown lesions may develop on twigs and become surrounded by reproductive structures (acervuli). Reddish brown lesions can also occur on infected leaves.

Symptoms of Botrytis fruit rot include fast growing gray-tan mycelium with a fluffy appearance and spore masses that are raised on branched stalks (conidiophores) (figure 3). Botrytis mycelium is grayer and less dense than the greener Alternaria mycelium. This disease can also cause blighted leaves, blossoms, and twigs. If spores of the fungus are absent on symptomatic shoots, this disease can be easily confused with the shoot blight stage of mummy berry or bacterial blight.
Causal Organisms and Disease Cycles

These three fruit rots are caused by fungi. Alternaria fruit rot is caused by *Alternaria tenuissima*, anthracnose (ripe rot) is caused by *Colletotrichum acutatum*, and Botrytis fruit rot is caused by *Botrytis cinerea*. *Alternaria tenuissima* overwinters as mycelium and spores in old dried-up berries and dead peduncles (berry stems) produced the previous year. Spores produced on infected tissues are spread from late bloom through fruit maturity by wind or rain splash. Lesions (leaf spots) on leaves infected early in the growing season may later produce spores that can infect berries. Infections resulting in postharvest rot typically occur through the stem scar after berries are harvested. The optimum temperature for disease development is 68°F. Spores produced on infected berries can spread the disease to healthy fruit in the same storage containers.

*Colletotrichum acutatum* survives winters in blighted twigs. Throughout the growing season, spores are released from blighted twigs during rainy periods and cause latent (inactive, symptomless) infections on immature green fruit. When green fruit are infected, the fungus remains latent within them until the fruit begin to mature. Once the berries begin to mature, the fungus becomes active and rots the fruit, resulting in typical symptoms. Spores produced on diseased berries may infect healthy fruits. Warm moist conditions are conducive to disease development.

*Botrytis cinerea* overwinters on infected plant material as hard dark fungal structures (sclerotia) or as mycelium in plant debris. Spores develop in the spring on infected tissues and are spread primarily by wind but may also be spread by rain. Young leaves, shoots, flowers, and fruit are most susceptible to infection by this fungus. Tips of branches killed by winter injury are very susceptible. Wet weather and temperatures between 59 and 68°F are most conducive to disease development. In the presence of free water, spores can germinate and start infection within a few hours. Spores produced on infected berries may infect healthy berries.

Control

1. Prune out and remove old and infected tissues in order to reduce inoculum. Reduce relative humidity in the planting through proper plant spacing and pruning.
2. Do not use excessive amounts of nitrogen during the spring in order to limit rapid succulent growth, which is more susceptible to infection.
3. The use of resistant cultivars can help control anthracnose of blueberry. Brigitta Blue, Elliot, Hannah's Choice, Legacy, Little Giant, Morrow, Murphy, and Reveille have some resistance to anthracnose. Avoid highly susceptible cultivars like Berkeley, Bluecrop, Bluetta, Blueray, Bounty, Chanticleer, Coville, Harrison, Jersey, and Spartan. Use of cultivars with dry stem scars, such as Bluehaven, will help control postharvest Alternaria fruit rot. If Botrytis fruit rot is a problem in your area, avoid cultivars with tight clusters.
4. Harvest berries often to prevent overripe fruit, and avoid handling berries when they are wet. Handle berries with care so as not to bruise or damage them.
5. Prompt postharvest cooling is very important in preventing fruit rots.
6. For the most current spray recommendations, commercial growers are referred to Bulletin 506-B2, *Midwest Commercial Small Fruit and Grape Spray Guide*, and backyard growers are referred to Bulletin 780, *Controlling Diseases and Insects in Home Fruit Plantings*. These publications can be obtained from your local OSU Extension office or OSU Extension’s online bookstore at [http://estore.osu-extension.org/](http://estore.osu-extension.org/).