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Commentary

Disease Management of *Monilinia fructicola*: A Deadly Cherry Disease

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DESCRIPTION

Most cherry species are native to the northern hemisphere. About 10 to 12 species are known in North America and are similar in Europe. However, most of the species are found in East Asia. It is believed that the original home of the species where cherries were grown is in Western Asia and Eastern Europe from the Caspian Sea to the Balkans. Cherries grow in all regions of the world where the winter heat is not too bad and the summer is mild. It needs a cold winter to bloom in the spring. The trees bloom in early spring, just after peaches and before apples. The total world production for 2022 is 4,358,852 tons, an increase of 1.9 percent from 4,277,298 tons in 2021. Türkiye is the largest producer of cherries, with more than 19% of global employment.

Brown rot, caused by the fungus *Monilinia fructicola*, is the most common and deadly cherry disease in Connecticut and New England. The disease is particularly dangerous in wet and humid climates. Brown rot causes flower blight, branch fire, canker and fruit rot. Infected flowers wither, wither, die, and become covered with gray mold. The disease spreads to the branch causing a brown oval disease. These cankers can expand and eventually girdle the twig, causing the terminal growth to wither and die. On fruit, symptoms first appear as a small, circular brown spots that increase rapidly in size and eventually result in a soft rot of the entire fruit. Under wet, humid conditions, ash-gray, powdery tufts appear all over the surface of the fruit, a characteristic diagnostic symptom of this disease. Fruit decay is often not apparent on immature fruit but becomes obvious as fruit begin to ripen. Fruit which are wounded (by insects, mechanical injury, bird pecks, etc.) are more readily infected than unwounded fruit. Rotten fruits fall to the ground or remain mummified on the tree. This fungus overwinters in fruit mummies on trees or on the ground and branches. In the spring, the fungus produces two types of flowers. One type is made on the surface of the cloths and the mummified fruit on the tree, the other type is made in the mummified fruit on the ground. Both types of fungus can cause disease in hot and humid areas.

Disease cycle

- The source of disease in cherries is winter watering in the fruit mummies, stems and buds.
- Rain in the spring infects the flowers, depending on the length of the moisture and warmth.
- Fertility occurs through the skin layer. Or it is easy in openings and wounds. Rained cherries are good friends for brown rot.
- Disease intensity increases with inoculation level, so when brown rot starts to get wet, back off! or fungicidal spray.
- Any mummied fruit that remain on the tree should be removed and destroyed and all dead and/or cankered twigs should be pruned and removed from the vicinity of the tree or planting. In addition, all mummied fruit on the ground should be raked and removed and/or the ground beneath the tree cultivated to prevent spores from forming on the mummies in the spring.
- At harvest, care should be taken to avoid bruises, punctures, or tears in the skin of mature fruit to prevent sites for potential infection. Additionally, use only clean containers and cool fruit as soon as possible.

Management

- Sanitation-remove broad bands if possible. Keep the garden clean.
- Timing and frequency depends on whether/moisture and crop conditions, but in most years some fungicide sprays are required before harvest.
- Be sure to replace fungicides to prevent resistance. Otherwise, there is little difference in the garden diet

European brown rot (*Monolinia laxa*) has been found on cherries in New England, but has not been confirmed. It is common in the Midwest and spoken in New York. The main difference between American and European brown rot is European is far more aggressive infecting blossoms and spurs, resulting in blight/dieback of blossoms and spurs. It's not pretty. It can be confused with bacterial canker. Two sprays, one at popcorn bud stage and then another 7 days later are recommended on all tart cherry. Resistance may be an issue.

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