Supporting Fruit Production

OHIO FRUIT NEWS

Research and Recommendations from Experts at The Ohio State University

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Southern Blight of Apple- A New Disease for Pennsylvania

By Dr. Melanie Lewis Ivey- Associate Professor, Extension Fruit Pathologist, Department of Plant Pathology

Southern blight is a notoriously difficult fungal disease to control in many fruit and vegetable crops. The fungus (*Sclerotinia delphinii*) is a soilborne pathogen that spreads by the movement of soil or diseased plants. The disease was first reported in Pennsylvania in 2018 and Dr. Kari Peter from Penn State University recently said that the disease is here to stay (see Fruit Grower News, August 26, 2021; fruitgrowernews.com).

The disease is most common on young apple trees but can affect apple trees of all ages when conditions are ideal. Hot temperatures and high levels of soil moisture favor disease development. Under these conditions the fungus can be seen growing on the base of the tree and along the soil surface. The fungus produces copious numbers of overwintering structures called sclerotia. The sclerotia are about the size of mustard seed and are tan to yellow in color (Figure 1).

Figure 1. Southern blight fungus on a 4-year-old apple trunk. Photo credit: Kari Peter, Penn State University

Management of Southern Blight is extremely difficult. There are currently no fungicides labeled for Southern Blight on apples. Tree removal, good sanitation practices, and planting clean stock are the main means of control. Since the fungus has a wide host range land previously planted with tomato, soybean, clover or cantaloupe should be avoided.

Fortunately, **the disease has not been observed in Ohio**....yet. If you suspect that you have Southern Blight, please contact me or your county Extension Educator. Early detection and mitigation is essential to controlling this pesky fungus!

Inside This Issue:

Handling and Harvesting Chestnuts in Ohio

By Amy Miller- Graduate Research Assistant, Department of Plant Pathology

With the fall season approaching, the harvest transitions from summer fruits and vegetables to apples and nuts. Chestnuts, though not abundant in Ohio, enjoy a loyal and enthusiastic consumer base, and any farm market selling chestnuts finds they can't keep them in stock. Marketers may be tempted to purchase and re-sell any chestnuts they can get their hands on, but caution must be taken to ensure that the supplier has grown and handled the crop properly. Many poor quality chestnuts are available not only in farm markets, but also in large retail grocery stores, leading to consumer disappointment and complaints. So, what are the best ways to handle and market chestnuts to ensure highest consumer satisfaction?

Many backyard and small-scale chestnut growers are under the impression that chestnut trees will produce a salable crop without pest and disease management. This may be rooted in the legends of the American chestnut where people would collect nuts from the forest and sell them without any tree care and maintenance.

Figure 1. An adult chestnut weevil drills a hole in a chestnut before laying eggs. Photo credit: Amy Miller, The Ohio State University

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Grower's Corner

When is the best time to spray for peach leaf curl disease?

Although peach leaf curl is considered a springtime disease, the best time to control the disease is in late autumn when the leaves fall. However, control can be achieved any time before bud swell. The fungus that causes peach leaf curl, *Taphrina deformans*, survives the winter on the surface of twigs and buds. In the early spring, the fungus infects new leaves as they emerge from the buds. As the leaves mature, they become resistant to new infections. Leaf curl is actually very easy to control and requires only a single yearly application of fungicide. If you apply the fungicide before bud swell and you get good coverage peach leaf curl will not be a problem in your orchard or home garden!

Peach leaf curl. Photo credit: Joe Boggs, Ohio State University Extension

Regardless of how accurate those legends may be, modern chestnuts growing in Ohio, of any chestnut species, are subject to several pests and disease, including chestnut weevils, chestnut anthracnose, other minor rots, and post-harvest storage molds.

Weevils: The lesser chestnut weevil (*Curculio sayi*) (Figure 1) is a native North American weevil species which formerly occupied the range of the American chestnut. Its range has now expanded to include many areas east of the Rocky Mountains where chestnut trees have been planted. These weevils occur throughout Ohio. Female weevils lay eggs through chestnut burs into developing chestnut kernels in late August-early September. After nuts ripen and fall from the tree, the weevil eggs hatch and the larvae tunnel through the fresh chestnut kernels, eventually chewing exit holes through the shells and burrowing into the soil (Figure 2).

If weevil infested nuts are harvested and not treated, the larvae will emerge in the nut display at the market or after customers have taken nuts home. Either way it can be an unpleasant surprise.

Weevil management is critical to quality chestnut production in Ohio. Orchard sanitation is very important and can be the primary weevil control mechanism for a few backyard trees that are diligently harvested. All nuts should be harvested daily and immediately treated with either a specialized hot water bath or soaked for a week in ambient-temperature water. For larger commercial orchards, or situations where thorough daily harvest is not feasible, adult weevils can be sprayed at the time when they are actively laying eggs, typically in late August. Carbaryl is currently the only chemical labelled for chestnut weevils and must be applied with an air blast sprayer to coat the chestnut burs, which are found all around the top and edges of the tree crown.

Figure 2. A chestnut weevil larva emerges from a chestnut shell. Photo credit: Jerry Payne, USDA Agricultural Research Service

Chestnut Anthracnose (aka Blossom End Rot): Chestnut anthracnose is a disease caused by the fungus *Colletotrichum.* The fungus causes cankers on chestnut twigs and black lesions on chestnut kernels (Figure 3). The lesions on the kernels are often called “blossom end rot” because they often occur on the blossom end of the chestnut. This has been economically important in the eastern U.S. since around 2010, and little is known about the management of this disease. Anecdotal evidence suggests that disease is worse during hot, humid harvest seasons and is less severe when harvest season weather is dry and/or cool.

Figure 3. Chestnut anthracnose in nut and twig. Photo credit: Amy Miller, The Ohio State University

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Handling chestnuts from page 3

Growers are encouraged to plant trees at wide spacing to allow maximum sunlight penetration and maximum air flow in the canopy to reduce fungal diseases. If chestnut anthracnose is detected immediately in fresh harvested chestnuts, these nuts can be dried and turned into processed products like chestnut flour and brewers' mash. However, fresh nuts with anthracnose are highly sensitive to post-harvest storage molds and should not be used for processed products if they have any mold beyond the original black lesion.

Other minor nut rots: There are numerous other rots that can affect chestnuts, most of which are minor or incidental problems in Ohio. Nuts that split open are subject to pre-harvest rots. Internal kernel breakdown and brown rot are similar-looking issues that can turn the inside of the kernel brown and negatively affect the flavor. Any fresh nuts that are soft when squeezed have internal rots and should be discarded. There are no active management recommendations for these rots at this time, but nuts should be carefully inspected and anything showing visible signs of rot or tactile softness should be discarded.

Post-harvest Storage Issues: Optimal post-harvest handling and storage of chestnuts is different than for other nut crops. Chestnuts should be handled more like carrots than like hazelnuts. Nuts should be harvested from the ground as fresh as possible, shortly after dropping from the tree. Chestnuts will have the longest shelf life if they are kept moist and cool. The most frequent cause of low quality nuts in retail markets is that nuts are allowed to partially dry, which subjects them to many post-harvest storage molds (especially "green" molds). Fresh chestnuts on display in markets should be kept in a vegetable crisper, or if on a featured display in the middle of the room, should be put away nightly in a cooler.

With the proper care, grading, and storage handling, chestnuts can be a delightful product in farm markets, and even a few backyard trees can produce a profitable yield. Enjoy this seasonal favorite!

Figure 4. Fresh, healthy chestnuts are a delight for consumers! Photo credit: Amy Miller, The Ohio State University.

How to Roast Chestnuts

Roasting chestnuts is easy and one of the best ways to enjoy them.

- Start with ½ pound of raw, unpeeled chestnuts.
- Preheat oven to 475 F.
- Using a sharp knife cut an X-shape onto the round side of the nut. If you forget this step the chestnuts will explode in the oven!
- Arrange chestnuts evenly on a baking rack or sheet.
- Cook the nuts until the skins peel back and the nutmeat is soft. Depending on the size of the nuts this will take 15-20 minutes.
- Place the roasted nuts in a clean towel and squeeze them until you hear them crackle.
- Once cooled, peel and enjoy!

Sooty blotch and flyspeck appear in August and September and are referred to as summer diseases. Sooty blotch causes black smudges on the fruit surface as can be easily seen in this image. Fly speck, as you might guess, causes black specks on the fruit surface. Both diseases are superficial and don't cause rot or affect the flavor of the fruit. In commercial orchards these diseases are an indication that the fruit were not sprayed with fungicides (I.e., organically produced) or that there was a problem with the spray program (timing and/or choice of fungicide). Fungicide recommendations begin on page 35 of the 2021 – 2022 Midwest Fruit Pest Management Guide.

Grower Resources:

- OSU Fruit Pathology website (u.osu.edu/fruitpathology)
- OSU Fruit and Vegetable Safety website (https://producesafety.osu.edu)
- OSU Fruit and Vegetable Pest Management website (entomology.osu.edu)
- OSU Fruit and Vegetable Diagnostic Laboratory (u.osu.edu/vegetablediseasefacts/)
- OSU Bramble: Production Management and Marketing Guide (Bulletin 782) (extensionpubs.osu.edu)

OSU Upcoming Events-2021-2022

September 17-19 – 23rd Annual Ohio Pawpaw Festival; Link here
September 21-23 – Farm Science Review; Link here
October 13 – New Commercial Applicator Training; Link here
October 24 – Thinking Inside the Box: Growing CSA's Across the Tri-State Conference; Link here
2022 Ohio Produce Network – January 17-18
2022 Ohio Grape and Wine Conference – February 21-22

For a list of CFAES events and schedule changes go to the CFAE Events Page

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