Controlling Bitter Rot in Apple

Win Cowgill
Professor Emeritus Rutgers, Win Enterprises International, LLC

Bitter rot is showing up a lot this season/recently, with regular rainfall in NJ and hot temperatures across the Northeast. Bitter rot is caused by the fungi, *Colletotrichum gloeosporiodes, C. acutatum* and *Glomerella cingulata. Colletotrichum gloeosporioides* and *C. acutatum* are the same pathogenic fungi that cause anthracnose fruit rot on strawberry and blueberry, ripe rot on grape, and anthracnose disease on peach. Note that on apple, the skin does not need to be broken for the fungi to enter; however, it often occurs on the fruit exposed to the sun, and is linked to some level of sunburn that has occurred. Honeycrisp is the most susceptible cultivar, followed by Empire. Other varieties susceptible to sunburn are at risk as well.

The fungus *Glomerella cingulata* can also cause a leaf spot/leaf crop and canker on apple, which was an issue in some north Jersey orchards last year, particularly on cultivars with golden delicious parentage, i.e. Golden Delicious, Pink Lady, Pristine. See Horticulture News (http://www.horticulturalnews.org/99-2/a4.pdf) or Fruit Notes (http://umassfruitnotes.com/v84n2/a4.pdf), Spring, 2019.

Control. The best controls are to prevent fruit sunburn with one of the protectant sunburn materials; Raynox is best, but the calcium carbonate materials like Pure Shade can help. A regular fungicide program including a protectant like Captan or Ziram + pyraclostrobin has been the most effective. Captan 80WDG should be applied at at least 2.5 lbs./A, with 3-5 lbs./A being better. Watch out for temperatures over 85F with higher Captan rates. Combine with pyraclostrobin (Merivon or Pristine) and phosphoric acid (ProPhyte or others). In the early season, start with Mancozeb at 3lbs./A + phosphoric acid, Merivon, or Pristine. Then switch to Captan, or use Ziram closer to harvest if Captan residue is a concern. See Also: New Considerations for Controlling Bitter Rot on Apples by Dave Rosenberger (http://blogs.cornell.edu/

Photo 1. Bitter Rot with some bitter pit.

Photo 2. Bitter rot on apple.

Photo 3. Pruned twigs harboring decay fungi.

plantpathhvl/2017/01/20/). This article (http://blogs.cornell.edu/plantpathhvl/2020/03/29/spring-clean-up-for-orchards/) was published July 10, 2017 in Scaffolds Fruit Journal.

Post-harvest/Early-season Control of Bitter Rot. This information is from Scaffolds Fruit Journal, March 23, 2020. In blocks where bitter rot was a problem last year, remove all fallen fruit, fruit mummies, and pruned twigs from beneath trees and either dispose of them away from the orchard or flail- chop them in row middles to break them down for more rapid decay. Rotted fruit left on the orchard floor over winter have been recognized as inoculum sources since 1903 (Schrenk and Spaulding 1903; also see http://blogs.cornell.edu/plantpathhvl/apple-diseases/summer-diseases/bitter-rot/). Twigs pruned from trees last summer or this spring can be colonized by the bitter rot pathogens. Those colonized twigs may produce inoculum for fruit decay in summer.