Northern Michigan FruitNet 2014
Northwest Michigan Horticultural Research Center

Special Update

May 16, 2014

SPORE LEVELS OF EUROPEAN BROWN ROT FUNGUS ARE HIGH IN NW MICHIGAN TART CHERRY ORCHARDS WITH CARRYOVER INOCULUM

George Sundin, Dept. of Plant, Soil, and Microbial Sciences, MSU
Tyre Proffer, Dept. of Plant, Soil, and Microbial Sciences, MSU
Nikki Rothwell, Northwest Michigan Horticultural Research Center

We examined European brown rot strikes from Balaton and Montmorency trees samples on 5 May 2014. Extensive sporulation was observed, particularly at the base of dead flowers infected last year. Initiate EBR control sprays at popcorn this year.

The European brown rot fungus overwinters in infected shoot strikes and flowers from the previous season. These strikes could be completely killed by European brown rot (Photo 1), or European brown rot-killed tissue could be present on shoots with live buds (Photo 2).

Photo 1. Shoot strike on Montmorency killed by European brown rot highlighting flower tissue with heavy sporulation of the *M. laxa*fungus.

Photo 2. Shoot with buds breaking dormancy and European brown rot-infected flower tissue with heavy sporulation of the *M. laxa*fungus.

We sampled shoot strikes from Balaton and Montmorency tart cherry trees from the Northwest Michigan Horticultural Research Center on May 5 and brought them to the lab for microscopic observation. Large, easily visible tufts of fungal growth and spores were observed at the base and on pedicels of last season's infected flower tissue (Photos 3-5). While the trees were just breaking dormancy on May 5 and not susceptible to infection, spore production and release will continue throughout bloom.

Photo 3. Profuse sporulation of the *M. laxa* fungus on dead Montmorency flower tissue infected last season.

Photo 4. Profuse sporulation of the *M. laxa* fungus (visible as gray fungal tufts) on dead Montmorency flower tissue infected last season.

Photo 5. Profuse sporulation of the *M. laxa* fungus (visible as gray fungal tufts) on dead Montmorency flower pedicels infected last season.

Thus, any orchard blocks containing overwintered European brown rot strikes, and especially shoot strikes with intact dead flower tissue, are at an extreme high risk for European brown rot infection this season.**There are enough spores being released from the dead flowers from a single strike to infect all of the flowers on a tree.** As we near the popcorn developmental stage, this developing flower tissue will be highly susceptible to European brown rot infection, particularly if cool to cold, wet conditions predominate.

European brown rot infection is favored by colder weather prior to and during bloom (high temperatures in the 30s to 40s) with extended wetting events, or rain followed by at least 18-24 hours with relative humidity above 90 percent. Infection potential is also affected by cultivar; one possible reason for the susceptibility of Balaton is that *M. laxa* infects Balaton flower tissue more easily and thus does not require as long of a wetting period for infection.

Fungicide sprays targeting European brown rot must be initiated at the white bud stage prior to a rain event. A second application follows usually one week later during bloom. Fungicide application, particularly on Montmorency, can be delayed if we are experiencing prolonged dry weather during bloom. There is currently only one fungicide available with confirmed efficacy against European brown rot and that is Indar 2F, used at a rate of 6 fluid ounces per acre. While there is a Section 24(c) label available allowing the use of up to 12 fluid ounces per acre per Indar application, the lower rate should be used at this time as our current analyses indicate that *M. laxa* isolates are sensitive to sterol inhibitor fungicides.

APPLE SCAB UPDATE

Emily Pochubay and Nikki Rothwell, Extension Educators

Dispersal of apple scab spores is ongoing during this primary infection period at our apple scab monitoring field site. Following this week's rain that began the morning of 12 May and ended mid-afternoon on 13 May, the average number of spores collected on spore rods made another jump up to 1,855 spores per rod. Moderate temperatures (an average of 58.6 F), 0.52" of rainfall, and a long period of wet, humid conditions resulted in the potential for heavy apple scab infection, which is reflected in the number of spores that we collected on this date. At this time, the recent mixed rain/snow conditions that began yesterday and continued into the morning have not been conducive for an apple scab infection.

Although recent cool temperatures may have slowed apple growth, keep in mind that new green tissue that has not been protected with a fungicide is susceptible to apple scab infection. Additionally, fungicides may need to be reapplied to green tissue after rain because rain may wash fungicides off of that tissue. At this time, it is important to continue spray to prevent apple scab infection. Scala or Vangard mixed with a protectant are two fungicides with good efficacy at cooler temperatures below 70 F.

Date	Avg # apple scab spores per rod
5/1/14	50.75
5/2/14	18.5
5/3/14	258.75
5/8/14	368
5/9/14	1,443
5/13/14	1,855