



Nectria

Posted by [Brittany Kordick](#)[Forum List](#) [Message List](#) [New Topic](#)[Brittany Kordick](#)[Nectria](#)

June 30, 2023 01:52AM

Registered: 4 years ago

Posts: 209

I'm guessing that nectria has not been a particular issue for anyone in this group since I don't ever remember nectria being mentioned on the forum and nothing came up during a search. A few years ago we started doubting whether all of our fireblight incidence was, in fact, fireblight, and we lighted upon nectria as a possibility. We mentioned this to an apple extension agent in our state and she said she had not seen much nectria in the Southeast. It's stayed in the back of our minds, but since nectria damage exhibits similarly to fireblight, and we knew that much or most of our seasonal damage was fireblight, we didn't take it any further. We knew that nectria is an opportunistic saprophytic fungus that often colonizes the dead wood left behind by shoot blight, but we didn't notice any of the coloration associated with the so-called "coral fungus."

Fast forward to this year. For us, the middle of June typically marks the end of shoot blight season and we can finally move on from fireblight for a while. But rather than abating, our shoot damage, relatively minor for most of May and June, has ramped up precipitously in the last two weeks. Trees that were completely clean started dying back drastically, not just a shoot here and there. We just couldn't wrap our minds around it and something nagged at us that this just wasn't presenting like the fireblight we know and loathe. We hit the research and no doubt about it; this is a serious nectria outbreak. Now that we're not trying to make it fit fireblight presentation, it seems so obvious. The dieback doesn't start at the tip, but rather where the twig connects to the limb. The twigs wilt, but do not shrivel rapidly as if burnt. Most obvious is the pink to orange sporodochia blooming on the cankers and dead wood. Also, the cankers are much larger than what we typically see in-season from fireblight. Frankly, we're feeling nostalgic for *Erwinia* at the moment, since besides dormant copper, there's not much actively recommended for nectria and not a ton of info about it since it's considered a minor apple pathogen. Furthermore, it's often associated with leaving stem tips on the tree when harvesting, and it is shocking to see even tiny pieces of dead wood on our trees, no bigger than stem tips, exhibiting orange sporulation.

A couple weeks ago, we were subjected to almost a solid week of rain and warm, not hot, temps. This seems to be what spurred this outbreak associated with fungal fruiting and new canker formation (typically, existing cankers develop in winter months). We have never seen anything like this before. We have things that we know to do or experiment with for fireblight, but no known summer treatments for nectria. The dieback is dramatic, and the rapidity of the new canker formation is scary. The ascospores are obviously maturing ahead of release, which we certainly wish to prevent. We will plan to apply dormant copper (we have foregone dormant copper for the last couple of years and wondering if that has led to a flourishing of existing nectria ahead of ideal conditions this past month) this winter, but we really feel the need to do something aside from hack the orchard back for the next few weeks.

Lime sulfur appears to be our best option, as copper applications in the summer are typically reserved for pathogenic bacteria. Just wondering if anyone out there has wrangled with nectria before and has any advice. If not, I'll try to update this thread as we learn more about it. One of the insidious aspects of nectria is that it sort of has a give and take relationship with the trees it infects -- cankers that grow in the winter may be subsequently contained by an in-tissue callous response by the tree fighting off the infection, so that symptoms of infection do not manifest in every given year. However, when optimal conditions arise, the nectria lurking in existing cankers is able to take advantage, and while damage is still usually minor within orchards, outbreaks can occasionally be devastating, as we are seeing. If you're not familiar with nectria, it might be a good idea to familiarize yourself with some of the markers in case you ever find yourself with inexplicable shoot blight damage in your orchard that just doesn't line up with fireblight.

[Kordick Family Farm](#)

Westfield, NC

Zone 7a

Edited 1 time(s). Last edit at 06/30/2023 01:58AM by Brittany Kordick.

[Reply](#) [Quote](#)[Mike Biltonen](#)[Re: Nectria](#)

June 30, 2023 02:47PM

Registered: 10 years ago

Posts: 298

Brittany, Thanks for this thread. And yes I have had issues with nectria in the past. My initial experience was probably 10-12 years ago. I was scouting some orchards in the Hudson Valley (NY) and noticed, as you did, shoots collapsing on trees that were fireblight susceptible, but the timing was wrong. That said, the symptoms (shoot dieback) was very similar to fireblight, but different. I can't remember what clued me in to look deeper, but I did and reached out the HVRL tree fruit pathologists at the time (Srdjan's predecessor), Dr. Dave Rosenberger. Long story short, there are some very subtle but distinct ways that nectria presents differently from firelight. As well, the infections start at a totally different time and don't appear until....you guessed it, the following year. Anyway, these are my observations and conclusions.

1. While fireblight shoot blight starts from the tip back, nectria caused shoots to die from the base up.
2. You don't always get the classic "shepard's crook" with nectria like you do in fireblight.

3. Infections are not systemic like fireblight.
4. You won't get multiple infection periods in a year (they only happen in the fall or spring and even then under certain conditions).
5. The coral fungus fruiting bodies don't always appear in year 2 (they may, and/or are very indistinct).
6. You won't see classic fireblight ooze.
7. Infections usually start the previous fall after i) fruit harvest/drop and ii) fall pruning when there are small but important open wounds in the trees.
8. Save pruning for when it's colder and the humidity is lower. You won't spread through pruning, but you can create opportunities for infection by leaving small wounds.

As far as symptom development, don't assume what you are seeing is fireblight. Look at the subtleties of how the shoots are dying. Look at the base of the shoot for the coral fungus fruiting bodies. Also with necrotia you will not see the classic FB ooze. If you are largely certain that it is NOT fireblight, then don't waste your time cutting it out. It won't spread, at least not right away. What you are seeing started last year, not during last week's rain event or yesterday's hail storm.

What you do need to be aware of are treatments (copper and/or lime sulfur, as Brittany said) at the commencement of harvest (if you can get in right away all the better, but for mixed variety or PYO orchards this is not always an option). However, spraying at 50% leaf drop while the leaf petiole scars are still relatively fresh can reduce infections into "open wounds." Avoid fall pruning when temperatures are cool and moist - open wound + cool temperature + moisture (i.e., heavy dew or humidity) will also reduce infection potential. Save your pruning out of infected wood until the winter, but be complete and remove all wood. Any leftover infected tissue can simply serve to reinfect down the line. It also had hundreds of alternate hosts (many more than fireblight) and so your ability to reduce infection potential by removing infected tissue will never be 100%. Black rot is a very similar organism as is Marssonina leaf spot in terms of having many alternate hosts.

From Cornell: "Other species in the *Nectria* genus vary in terms of pathogenicity and aggressiveness, but as a whole, they are capable of colonizing the tissues of hundreds of species of woody perennials. In particular, *N. cinnabarina* can be found on apple, pears, crabapple, and even maple and currants. In this regard, surrounding woodlands can be a source of inoculum for the pathogen."

My suggestion for dealing with necrotia when and if you think your trees have it: don't freak out. Ask yourself whether the situation as it's presenting makes sense. By this I mean the timing of the symptoms, the conditions under which they arose, the disease development, etc. Do you see any coral fungus? Do you see fireblight ooze? If it's not fireblight, then prepare to go after it in the fall post-harvest + 50% leaf fall. Spray with a combo of copper and lime sulfur (nasty I know, but effective). Avoid fall pruning during cool, humid conditions. Spray again, this time maybe just copper, as buds start to break. In many ways, the control tactics are like peach leaf curl - something where infections begin in the fall and "wake up" in the spring...and once the season is underway and especially after symptoms appear there really isn't anything to do. Pruning out infected shoots is a waste of time.

Anyway, that's my story and I'm sticking to it.

[Mike Biltonen, Know Your Roots](#)

Zone 5b in New York

[Reply](#), [Quote](#)

[Brittany Kordick](#)

[Re: Nectria](#)

June 30, 2023 05:56PM

Registered: 4 years ago

Posts: 209

Mike, I really appreciate your thorough response and concise summarization of what is known about necrotia twig blight/canker. I guess it came through loud and clear that I was, indeed, freaking out! After a day of solid research, my mother was counseling to do as you suggest: refrain from pruning right now and start tackling this in the fall, so she's feeling more confident about her assessment now that you have concurred. I just can't get beyond the fruiting bodies popping up everywhere, and feeling like if there's anything I can do now to interrupt the reproduction cycle and prevent these spores from spreading throughout the orchard now, it wouldn't hurt to try. Unfortunately, the weather for the next few days here seems conducive to further development, extremely high humidity, potential showers and thunderstorms, plus warm temps. We wouldn't mind doing a lime sulfur spray now for some other summer issues, so will probably go ahead with one, or at the very least, do some test applications on a few limbs, targeting the colorful sporodochia, to see what discernible effects it has.

An unfortunate side effect of this necrotia business for us is that it has called into question yet again how to handle fireblight shoot blight. Years ago, we diligently patrolled the orchard during late spring months, cutting out shoot blight as it occurred. Once we began using AgriPhage, however, we concluded that we were taking care of active infection in the orchard that way and any necrotic tissue we saw was effectively dead and in no danger of spreading further. And in any case, we really could not afford to take so much time at this point in the season, just cutting on trees and we've never liked the idea of creating new open wounds on the tree at a time of the year when new fireblight infection is still possible, even though you're protecting against the current infection in theory.

Boning up on fireblight research these past few weeks, however, I was struck by Srdjan's studies documenting canker expansion during the growing season and have surmised that, while much of the necrotic tissue we see this time of the year may be dead as a doornail, and while any live *Erwinia* it could be harboring may not all survive the winter months, we shouldn't be so cavalier as to assume that it looks dead, it sounds dead, it must be dead. We're hoping that trunk injection of AgriPhage post shoot blight infection may be one way to prevent overwintering cankers going forward, targeting any *Erwinia* that are surviving in the tissue and forming cankers this time of the year. In the meantime, however, we decided to go back to cutting out shoot blight. We were in the midst of this when necrotia struck, and noted that the necrotia is taking full advantage of our recent cuts in relation to shoot blight. Back to the drawing board. Whether it turns out to be right or wrong (and I suspect that the vagaries of weather will always dictate in a given year whether it is helpful or harmful to cut out shoot blight), I'm glad for any reason to quit cutting exhaustively on trees right now.

Really appreciate your input -- thanks again!

[Kordick Family Farm](#)

Westfield, NC

Zone 7a

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