

FELS and Alternaria sprays, comparing Cueva vs. Sulfur vs. Lime Sulfur

Posted by [Josh Willis](#)

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[Josh Willis](#)

[FELS and Alternaria sprays, comparing Cueva vs. Sulfur vs. Lime Sulfur](#)

Registered: 6 years ago

Posts: 134

October 17, 2023 11:45PM

We are trying to figure out the best plan for dealing with our Frog Eye Leaf Spot (FELS) / Black Rot and Alternaria on our apple trees. These fungal pathogens are resulting in early leaf drop, which effects the fruit ripening and of course the tree health. We are using best sanitation methods, of course, but we would like to compliment that with some proper fungicide sprays for a year or two.

Specifically, we would like to use the best sanitizing dose for dormant sprays, and possibly lower rates for Pink through Petal Fall, perhaps 2-3 weeks after Petal Fall, to cover the primary infection period. Alternatively, I see Michael talked about 2-3 full-rate Sulfur sprays after Petal Fall, before returning to Holistic Sprays, for those needing to straddle both approaches. I would wonder about possibly more mineral fungicide sprays through the summer months, if someone tells me I should, although I am loathe to spray that much mineral fungicide. Ideally this is coming up with a plan for perhaps 1 or 2 years, and then relying on Holistic Sprays again.

Cueva is attractive with its soap-base and lower Cu rate. But it is not labeled for these specific fungal pathogens. I thought I saw somebody talk about Cueva being preferred for this purpose, though.

Sulfur was recommended by my extension agent. I had read about this mostly as a use for Scab, which fortunately does not seem to be a problem for us right now.

Lime Sulfur is of course another much more caustic option.

Does anyone have experience with one of these sprays for FELS or Alternaria leaf spot?

If you do prefer Sulfur, as per my extension agent, do you have a preferred product? If you prefer Lime Sulfur for clean up, either in Fall and/or Spring, do you have a preferred product? And how hard-core do I need to be about PPE for Lime Sulfur? The product warnings are not nice.

Here is a helpful description I found from the 2010 HON newsletter. Michael was writing in relation to Scab, but I am assuming the mechanisms can be generally used in the context of these other fungal pathogens, too.

"Copper works akin to a blunt barrier by unfavorably altering surface hospitality. Sulfur works as a protectant fungicide in altering solution pH thereby inhibiting the production of penetration enzymes. Lime sulfur brings an eradicant edge by actually penetrating the leaf tissue and thus whacking that hyphal start out of the ballpark if applied within the first 24 to 36 hours following successful wetting. All these mineral fungicides have significant impact on soil and arboreal organisms, return bloom, beneficials, yield, fruit finish, and perhaps even your happiness."

Right now I am pondering what clean up spray to use this fall, I had been planning on Cueva as a step up from usual FAK but I am given pause by the extension agent's recommendation for Sulfur. After that, of course, I am looking to plan next year's sprays.

Thank you!

Earthworks

Zone 7a in West-Central MD

Non-commercial, ~100 fruit trees, dwarf to MM106

Edited 3 time(s). Last edit at 10/17/2023 11:50PM by Josh Willis.

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[Craig Bickle](#)

Registered: 2 years ago

Posts: 82

[Re: FELS and Alternaria sprays, comparing Cueva vs. Sulfur vs. Lime Sulfur](#)

October 18, 2023 02:41PM

I have the same questions/concerns, Josh.

The Holistic method has so far helped me grow some healthy trees (except the Dabinetts 🙄winking smiley but I'm still grappling with fungal pathogens on the fruit, and leaves of some of the trees. So I've also been thinking it might be time for a dose, or several, of the "organic" mineral fungicides next spring to start the season with a clean(er) slate.

But which one, and how often, at what rate? When you've been following one regimen for so long, it can be daunting to switch gears, even if only temporarily.

Sorry I don't have any answers for you. But thought you might like to know you're not alone in looking for answers to the same questions.

Craig Bickle

Hap Woods

Zone 6a

East-Central Ohio

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[Mike Biltonen](#)

[Re: FELS and Alternaria sprays, comparing Cueva vs. Sulfur vs. Lime Sulfur](#)

October 19, 2023 03:03PM

Registered: 11 years ago

Posts: 298

Hi,

So here's a short answer to a deep question. I think some folks recommend sulfur as a default when no other known viable options exist. The problem I see with that approach is two-fold: 1 - we're still in an allopathic mindset when we spray sulfur "because" and 2 - we simply don't know. FELS/black rot is a very ubiquitous fungal organism that is opportunistic to damaged tissue such as pruning wounds. Same for Alternaria. It obviously infects foliage and fruit - but is that due to a susceptibility or wound or something else? To get away from the allopathic mindset I've chosen a path that is more focused on proper pruning techniques (leave no poor cuts or cuts that can't heal properly) and a competitive colonization. I am advancing on Michael's concepts of CC by using more diverse plant and compost teas (fresh and fermented) to take advantage of the indigenous endo- and ecto-microbiome that plant diversity and compost offers. So, nettles, horsetail, comfrey, plantain, dandelion teas were all used last year with great success (next year could be different, but I had very little MLB or FELS on leaves). I had no fruit so couldn't tell you about the fruit black rot. I also added microdoses (i.e., below label rate) of Cueva and Double Nickel - not true homeopathic, but somewhat analogous to homeopathic doses - in every spray. I also came across an article where [researchers in Oregon](#) discovered that much lower rates of sulfur (i.e., homeopathic analog rates) were just as effective as the higher rates with less phytotoxicity for powdery mildew in grapes. Can't say that the same would be true for apples, but..... Sulfur, lime sulfur are very phytotoxic at higher rates. So are neem and karanja when trees are fully leafed out and higher rates - not to mention adverse reactions when mixed with or sprayed closely to other products such as sulfur. An overuse of anything that causes phyto can likely increase the potential for foliar or fruit infections leading to more black rot/FELS and not less as we would hope. I would recommend use a 'nurturing' approach and build the plant's self-defenses and the endo/ecto-microbiome with frequent holistic sprays that include diverse plant and compost teas as well as microdoses of DN, Cueva, and sulfur (if warranted). I can't whether this will or won't solve your problems, but it can't hurt.

[Mike Biltonen, Know Your Roots](#)

Zone 5b in New York

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[Josh Willis](#)

[Re: FELS and Alternaria sprays, comparing Cueva vs. Sulfur vs. Lime Sulfur](#)

October 28, 2023 12:11AM

Registered: 6 years ago

Posts: 134

Thanks, Craig, glad to know there are others out there!

And thanks Mike, that makes sense. Our situation requires some stronger medicine this year, I think, so I've been trying to figure out the best medicine to give. I am going to stick with Cueva, i.e., copper, unless I hear otherwise, partly b/c that's just what's in my basement. We may look at lime sulphur in the future if the Cueva isn't cutting it. If there is no research about mineral fungicides for this, it may be just the most caustic wins the battle, re: a sanitizing spray.

In either case, hopefully just a fall clean up spray + spring delayed dormant clean up spray. Perhaps some small amounts alongside the holistic sprays through the Spring 1-4 + Comps, as you say. We've done holistic sprays the last few years, to good effect on our stone fruit, but our Apples are just too far behind the curve right now, the FELS and Alternaria are too endemic after a few decades of neglect, to the effect that the leaf drop due to fungal foliar infection is a self-fulfilling prophecy so far as holistic health, I think. I'm hoping we can just turn to FAK's after a year or two.

Earthworks

Zone 7a in West-Central MD

Non-commercial, ~100 fruit trees, dwarf to MM106

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