



early season copper

Posted by [Roger Pellegrini](#)

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[Roger Pellegrini](#)

[early season copper](#)

March 23, 2014 03:24PM

Registered: 9 years ago

Posts: 1

Is copper hydroxide in dormant oil considered a safe practice?

Edited 1 time(s). Last edit at 03/23/2014 03:27PM by Michael Phillips.

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[Mike Biltonen](#)

[Re: early season copper](#)

April 01, 2014 01:37AM

Registered: 11 years ago

Posts: 298

Okay, I'll bite. I think that early copper sprays play a huge role and have tremendous benefit....when applied early....before "things" get growing in the soil. In addition to controlling any fireblight inoculum that might be out there, they play a great role just as a general fungi/bactericide. Unfortunately, they've taken a hit because of all the reasons we're already aware--mainly overuse in the veg crop world. Fortunately, there are a wide range of really good low ppm formulations (OMRI approved) that can give great results without the toxicity higher doses bring. But they need to be applied with regard for environmental and worker safety. Simply applying gallons and gallons of spray laced with copper so you can turn everything blue all year long doesn't really help or comply with the basics tenets of good stewardship (not saying you would do that, just sayin'). Properly calibrated sprayers with appropriate levels of coppers applied at the right time (you need complete coverage on the TREE) can be very beneficial. As well, copper is necessary plant micronutrient -- I don't know your orchard and don't know what its needs are, but can say I've been reviewing some soil and leaf samples today and know that low pH soils and other nutrient imbalances can bring on cropping and quality issues associated with copper and other micros.

So, my humble recommendations are that unless you know that you have sufficient copper nutrient levels in the soil and the tree....and that you have no disease problems (yeah, right!), then you need to probably consider some early (as in, dormant to -better yet- 1/4" green) applications of a low ppm copper (like Cueva or MagnaBon). The copper situation is just like sulfur...good in limited doses.

DISCLAIMER: I don't know you' re orchards. Take soil and leaf samples on a regular basis to know the nutritional status of your trees and land. After that, make a reasoned determination about whether you need to or even want to apply cooper. My guess is that you'll be better off for it, but that's just me. Also, avoid ANY copper applications with or near oil applications (and this applies to NEEM, too) once green tissue has appeared.

[Mike Biltonen, Know Your Roots](#)

Zone 5b in New York

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[Peter Fisher](#)

[Re: early season copper](#)

April 01, 2014 05:29AM

Registered: 10 years ago

Posts: 82

If the topic is early copper spraying in general, I spray my peaches and apricots with copper when dormant (in fact a couple of weeks ago) because I have had a problem with peach leaf curl and with brown rot in the apricots. One application in the fall and one in late winter/early spring has been enough to control the peach leaf curl. Perhaps I could eliminate one of those sprays, but I have not experimented with that.

As for the brown rot, this is the first time I have tried to deal with it (last year was our first apricot crop and brown rot destroyed it all). What I have been able to find about it is a recommendation to spray about four more times, through petal fall. Seems a bit extreme. Also, this will complicate application of holistic sprays on the apricots if as Mike says I have to avoid neem oil sprayed close to copper during this period--- not sure what that means exactly in terms of time.

I did not spray apples or pears with copper because it wasn't clear that there was any reason to, except for fireblight. I have not had any fireblight in the orchard yet (this will be the sixth growing season) and I hate to spray a lot of copper for a problem I may not have. My apple problems have been mostly with insects rather than diseases. I had a little cedar apple rust last season so I suppose copper might be advisable for that on the few trees where it appeared.

Turkey Creek Orchard
Solon, Iowa (zone 5A)

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[Michael Phillips](#)

[Re: early season copper](#)

April 01, 2014 03:22PM

Moderator

Registered: 11 years ago

Posts: 621

Copper's mode of action is not unlike a piano being dropped from a four-story building and landing on you. Applying fixed copper early gets this mineral into bud scales and twig lesions where pathogens might be lingering. Of course, so are benign microbes, and that's why it's important to understand the specifics of the disease(s) at your site if playing this card:

Apple Scab - Copper can be useful in a "dirty orchard" to protect green tissue as buds unfurl. Conidia overwinter in the buds in warmer zones and must be dealt with. Further north, it's residual copper spreading into tissue moisture pockets that undoes the first round of spores. These earliest potential infections are not so much a concern for growers enhancing leaf decomposition. **Pear scab** is a little different, however, as twig lesions in the tree are an "up high" source of inoculum.

Peach Leaf Curl - A fixed copper application made in fall when leaves come off the tree and again in late winter is a proven allopathic approach to knocking back these fungi. Same goes for **Bacterial Spot**. Different microbe but same overwintering haven.

Brown Rot - These fungal pathogens of stone fruit build in number over the course of several years. The primary overwintering sites are mummified fruit both in the tree and on the ground, along with cankers at the base of buds. Copper plays a role in regaining the upper hand where rot has become severe. The primary window (as I understand it) is definitely a dormant application, and here spray the ground beneath the tree as well, followed with one or two additional copper soap apps up till pink (think peach pink) but not beyond. This applies to the "blossom blight" phase which in turn sets up the fruit rot phase. This is not something to do every year but rather to get back to square one.

Cedar Apple Rust - Copper has no relevance whatsoever. The spores-to-come are on an entirely different tree (the eastern red cedar) at quarter-inch-green on the apple. Plus this fungal disease is a couple beats behind scab so even residual copper will be gone when the primary infection period for rust begins.

Fire Blight - Copper's role here is to literally capture all staging areas throughout the orchard on both well trees and susceptible trees. The bacterium that causes fire blight spreads from cankers early in the season but can't infect until conditions are right during bloom and beyond. The heavy metal strategy in this case is preemptive.

Mike makes great points about knowing copper levels in your soil and the interaction between one strategy and the next. I have not sprayed copper for 20 years now for disease purpose but would certainly consider it if an overwhelming situation develops. Otherwise, that "blue piano" is also wiping out the very microbes that work in the fruit grower's favor on the competitive colonization front.

And just because Roger started all this ... use of dormant oil at a 2% concentration with a fixed copper as a dormant application helps spread the mineral deeper into those bud scales and crevices. There are different formulations of "safe copper" once the growing season has begun.

[Lost Nation Orchard](#)

Zone 4b in New Hampshire

Edited 1 time(s). Last edit at 04/10/2014 04:56PM by Michael Phillips.

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