



Serenade and Effective Microbes

Posted by [Chad Armentrout](#)

[Forum List](#) [Message List](#) [New Topic](#)

[Chad Armentrout](#)

[Serenade and Effective Microbes](#)

April 02, 2018 04:11PM

Registered: 5 years ago

Posts: 11

Has anyone ever mixed, or have an educated opinion on the efficacy of combining Serenade and Effective Microbes to spray tank. Would the synergy of the two be more effective colonizing leaf surface so scab and cedar apple rust can be kept at bay?

Chad Armentrout

Stillwater Valley Orchard and Apiary

Zone 6

Southwest Ohio

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

[Josh Willis](#)

[Re: Serenade and Effective Microbes](#)

April 05, 2023 07:42PM

Registered: 6 years ago

Posts: 134

I just wanted to up this post. Although it probably should be posted in Spray Nuance, I think?

Chad, I assume that generally speaking combining Serenade and EM-1 to the spray tank decreases the efficacy of EM-1, given that Serenade kills bacteria and fungus. As Michael posted elsewhere, these are two sprays pulling in opposite directions. But I think your question may have the assumption that Serenade is more targeted in its effect, leaving EM-1 generally unharmed. That I don't know, and I realized I have a similar assumption.

Do we know how harmful Serenade is to our applied microbial populations, i.e., EM-1, Spectrum, MicroLeaf, etc.? Is the guidance to not mix these based on general principle, or do we know that Serenade is generally broad spectrum, and not just targeted to the bacteria and fungus on its label? I thought I had read that Serenade is more targeted than mineral applications such as copper or sulfur. But again, that may have just been an assumption on my part.

For those of us who generally spray less frequently, the practical question here is whether it is worth combining Serenade with EM-1, etc. microbials, or if that completely gets rid of the competitive colonization effect. For example, it would be great to piggyback a CCB spray on our peaches with Serenade to reduce brown rot infection.

As a related question, if these approaches are very much not compatible, what is the window suggested between sprays? i.e., how long after a Serenade can we introduce some CCB type spray, or vice versa?

Earthworks

Zone 7a in West-Central MD

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

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

[Josh Willis](#)

[Re: Serenade and Effective Microbes](#)

May 19, 2023 08:09AM

Registered: 6 years ago

Posts: 134

I just wanted to follow up on this post with more info about Serenade, which many of you probably already know. But I didn't see it posted on the forum, so here it is in case others are curious.

I'd first seen Serenade described as a fungicide and, later, as a bacteria with competitive colonization properties. That latter bit made me scratch my head, and wonder if I'd misunderstood the former. It seems that they are both true, if I understand correctly.

I found this video from Bayer, the company that sells Serenade.

[\[www.youtube.com\]](http://www.youtube.com)

I'll summarize it for those who don't want to watch all the fancy graphics. Bayer says that Serenade is a fermented *Bacillus Subtilis* strain QT 713. It has 3 mechanisms. (1) Fungicide, which works via lipopeptides, (2) Bactericide, which works via the inhibition of cell division and blocking protein production, and (3) colonization in soil and roots.

It's that 2nd mechanism that is the tricky bit for combining with an holistic spray. The question would be how long EM-1, or Spectrum, or MicroLeaf, etc. cell division and colonization lasts after spray, or when does it diminish to a point that a Serenade spray might not totally get rid of the beneficial microbial effect of the holistic spray.

So far as colonization, it's interesting that they only describe it in terms of soil and root health. I'm not sure if it is just not listed for leaves or what. Interestingly, Bayer does sell a version of Serenade listed for leaves called "Opti" instead of "ASO", the difference being about 20x as much % of TQ 713. Not sure where I'd get it, and not sure if it is 20x as expensive.

EDIT: I emailed a Bayer rep this spring, and he sent the technical bulletin for Serenade, which gives a bit more detail, for those interested. Here is the pertinent info.

"The active ingredient in Serenade ASO fungicide, Bacillus subtilis strain QST 713, is a beneficial bacterium. The beneficial bacteria in Serenade ASO act as small factories, producing bioactive compounds in addition to those in the product. These bioactive compounds provide three different effects important for healthy, high-yielding plants.

First, the lipopeptides destroy fungi on contact, while other compounds attack bacteria. Second, Bacillus subtilis QST 713 induces systemic resistance which primes plants to defend themselves against pathogens as they grow. Third, Serenade ASO has an important biological chemistry that combats plant stressors like salinity, drought and heat."

The key bit here is they claim Serenade acts to promote holistic health of the plant. How does its effectiveness compare to other, lower cost beneficials that we use, such as EM-1 or Spectrum or MicroLeaf? And do Serenade's lipopeptides act more effectiveness than the fatty acids we spray with fish and neem? And does Serenade block bacteria cell division in ways superior to our other beneficials' mechanisms we usually describe as competitive colonization? I'm guessing we don't have data on head to head trials. So it may come down to grower trial and error to see what works best for our particular orchards.

I also asked about off label use of Serenade for Pome rots such as Botryosphaeria sp. and Alternaria sp., which are labeled for other plant types. It sounded like Serenade was probably not effective enough to be labeled for these rots on Pome plants. So unless you're very desperate for a solution, the vague benefits on Pome don't seem worth the trade off with the established beneficial microbials HON growers tend to use.

FWIW, we had a mostly successful stone fruit crop with lower levels of brown rot than usual. This was our first year using Serenade. Of course, we were adjusting other elements in the soil and foliar sprays. And this was an incredibly dry spring and summer in central Maryland, which was a challenge in many respects, but a real help for reducing rot. But I am inclined to use Serenade next year for stone fruit. It's handy to have around for the strawberry and raspberry rows, too, with any extra spray in the tank. Similarly, I may add a spray or two of Serenade on the Pome, just for diversity, if there is extra available.

Earthworks
Zone 7a in West-Central MD
Non-commercial, ~100 fruit trees, dwarf to MM106

Edited 1 time(s). Last edit at 10/17/2023 06:27PM by Josh Willis.

[Reply Quote](#)

[Newer Topic Older Topic](#)

[Print View RSS](#)

Sorry, only registered users may post in this forum.

[Click here to login](#)

This [forum](#) is powered by [Phorum](#).