



Inoculants (Skipping the Compost in Compost Tea)

Posted by [Harrison Van Meekeren](#)

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[Harrison Van Meekeren](#)

[Inoculants \(Skipping the Compost in Compost Tea\)](#)

August 09, 2018 05:13PM

Registered: 5 years ago

Posts: 2

Ever Since we started brewing compost tea on the farm it has been a real pleasure to watch how different brews can be from batch to batch based on ingredients of food, PH adjustment, time of brew, and sources of compost, be it worm or waste.

...then comes the application....

go 100ft, clogged nozzles, clean, 100ft, clogged nozzles, clean, on and on we go.

The whole process is a lot of work. We are brewing 900 gallons at a time and takes about 5 hours to apply using 2 turbo mist tower sprayers (foliar sprays).

Is there a better way to filter/screen the tea going from brewer to sprayer?

And after all this Im still unsure what exactly is in the brew. It would be great to start with an inoculant you know is beneficial to that time of the growing season

So my question is, can we skip the compost part of the compost tea? Are we able to take an innoculant that we know we want for certain diseases and grow it? Double Nickel/Serenade/Blossom Protect/Regalia/etc. as we all know these products are mucho dinero so if its possible to multiply these it would be much more cost effective.

What would the rate be?

Innoculant: food (what food?): Water Volume: PH

In the end you would have a population of microbiology that you intended and a clean product that dances through the sprayer and into the orchard.

I may be shooting for the stars here, but any opinions or constructive criticism will be taken

Thanks,

Harrison

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[Mike Biltonen](#)

[Re: Inoculants \(Skipping the Compost in Compost Tea\)](#)

August 10, 2018 01:16PM

Registered: 10 years ago

Posts: 298

The reason DN/Serenade/Blossom Protect/Etc are \$\$ is that the companies have developed methods of propagating stable mixtures of those compounds. To re-create that would require a microbiology lab to know what you are growing, to isolate it, propagate it further, and the re-create the final mixture. Apart from the legal questions, it would be enormously expensive and time consuming. So, this is where focusing on a nondescript (there may be some folks out there isolating and identifying specific organisms, but I suspect its very few, if any at all) mixture of nature derived IMO's has gained interest. **Now the concern, and my big question, is that when we capture natural IMO's and propagate that in a compost pile, what do we have? Are propagating bad microorganisms as well.** The answer is probably to some degree. We know there are plenty of pathogens in nature that can damage fruit trees if given the chance. I don't believe this is such a bad risk, but also feel we are flying blind in a sense and hoping that the good outweighs the bad. There are some fairly simple techniques where one with a trained eye and microscope can segregate the good ones from the bad ones and at least get a sense of proportionality. But re-creating those proprietary products - highly doubtful at a farm level. The end goal is to fight truly pathogenic diseases and induce ISR/ASR pathways in the plant through competitive colonization without doing harm (we need a holistic farmers Hippocratic oath, methinks).

As far as filtering/screening - if you are using a standard sprayer with standard TeeJet nozzles (ones with a small orifice) that in order to filter adequately, you're actually going to be filtering out the good stuff. Remember that all the larger particles are largely carbon and other

organic bits that are what retain/hold on to the good stuff (pardon, the generalizations). Instead, I think this is a question of sprayer type and nozzle size. I have always preferred an AgTec sprayer because it uses a large orifice delivery system with deflector plates to atomize the spray stream. You can also buy larger orifice TeeJet nozzles, but even those have limitations in terms of particle size. Or use a handgun with large nozzle tips.

I prefer to simply filter out the large bits and leave a fair amount of larger sediment (organic matter) in the mixture, and adjust the delivery system appropriately.

Lastly, Regalia is just plant extract of Japanese Knotweed, not a true biological per se - though I know there is some biology involved. This is probably easier than IMOs for accuracy, and you can harvest the roots (or tops - or the whole thing), decoct it, and then add back into the spray water at a certain concentration. What concentration though? Regalia is only 5% Reynoutria sachaliensis and 95% other stuff (inerts). What are the inerts and how do they impact the effectiveness of the 5%? This is always the big question and the companies always retain proprietary rights to the inerts - which in the case of big ag chemicals are usually the more harmful ingredients. But they are the ones that activate, stick, penetrate, etc. the product and get it to do what it needs to do. An AEA product - Rejuvenate - is largely Humic and Fulvic acids with the largest portion of the product being simple molasses. And while recreating Rejuvenate is probably not easy, it seems like a no brainer to create a relatively close analog by using rich compost + molasses. Add in your IMO mix (or even brand biological like Spectrum) and voila away you go. For Regalia, I am not sure what the inert ingredients are, but making the base compound seems pretty straightforward.

Anyway, my points are that 1) making homemade stuff is great, but without a lab you really don't know what you have specifically, in terms of biology. You're trusting in Mother Nature and hoping for the best. I plan on training myself this winter to identify good/bad organisms under a 'scope - without knowing the specific organisms. And 2) instead of filtering out the good stuff, adjust your delivery system to accommodate the material.

[Mike Biltonen, Know Your Roots](#)

Zone 5b in New York

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[Karn Piana](#)

[Re: Inoculants \(Skipping the Compost in Compost Tea\)](#)

August 18, 2018 08:45AM

Registered: 5 years ago

Posts: 77

One of the principles of Korean Natural Farming is "[The Nutritive Cycle Theory](#)", which describes 3 phases of plant chemical composition that are foliar fed from a regimen derived from fermentations and microbial cultures which are made from materials on your own land. This decades old method of probiotic agriculture has been most active in the US in Hawaii due to the extremely high cost of imported materials in an island economy, and it is now being widely adopted by cannabis growers due to its effectiveness. [Here is an article](#) about the KNF trails in Hawaii that includes research demonstrating the potential of these techniques in comparison to other methods.

Here is an excerpt from Dr. Han Kyu Cho's (the founder and main developer of KNF) from the Korean Natural Farming Handbook on [FPJ](#)

[Here is a video](#) of Chris Trump making Fermented Plant Juice (FPJ) on an industrial scale.

[Karn Piana](#)

Zone 7 Semi-Arid Steppe

Northern New Mexico

Edited 5 time(s). Last edit at 08/19/2018 06:46PM by [Karn Piana](#).

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[Karn Piana](#)

[Re: Inoculants \(Skipping the Compost in Compost Tea\)](#)

August 18, 2018 09:31AM

Registered: 5 years ago

Posts: 77

Hello Mike. I hope all is going well for you and your projects.

Regarding your reference to IMO: I am almost at the IMO2 stage with my rice and ready for IMO3. I just re-watched the tutorials and realized that the IMO2 is not incorporated into a compost pile, but rather with a "carbon and a carb". I was all ready to do the compost incorporation as well and had collected a large pile of green material for this stage, but after watching the video again, I realized my mistake. Chris Trump uses saw dust and macadamia hulls if I'm not mistaken. People often use rice bran or wheat mill run. I may try that or see if there's something I could use at our local feed store... The amount of IMO2 inoculum he uses for a 40 lb pile is also surprisingly small, a couple tablespoons is all... You make a liquid solution of IMO2 and other inputs if you have them in water (I only have FPJ & BRV from the KNF inputs at this juncture) mix it all together with the carbon and a carb, cover it with grass matting or a tarp of some kind, and turn it the next day no matter the temperature. It is important to not let it go anaerobic, and he says to monitor the heat and to turn it regularly until it cools down. Afterwards, he says it should smell pleasantly yeasty and bread-like. If it smells of ammonia, it's probably gone anaerobic and isn't ideal. [Here is the video](#) I'm referring to as I make my own first batch of IMO3.

I agree with you about the microscope and I probably won't be foliar feeding this until I get one. However, seeing the end result makes me pretty excited to have my own to regularly incorporate into our wood chips and soil spraying. I'm looking forward to having this prepared. The first IMO1 rice culture I attempted failed because I didn't fill my box at least halfway with the al dente rice and it dried out. I thought

the second culture had failed because there were a few small green and red spots in the white fuzz and I threw it into a compost tumbler. I subsequently realized this was probably a good collection as the contents of the tumbler began to be covered with white fuzz and after reference to the tutorials it seems that this kind of [minor variation is acceptable](#)...

Karn Piana
Zone 7 Semi-Arid Steppe
Northern New Mexico

Edited 1 time(s). Last edit at 08/18/2018 09:52AM by Karn Piana.

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

[Michael Phillips](#)

[Re: Inoculants \(Skipping the Compost in Compost Tea\)](#)

August 19, 2018 03:54PM

Moderator

Registered: 11 years ago

Posts: 621

The original question here pertains to an "organism ferment" to get microbial byproducts that in turn knock back pest populations and/or prove antifungal or antibacterial. I admittedly have not been able to get my head around the concept of *fermenting organisms* yet alone being able to recognize a specific Caribbean strain of *Saccharopolyspora spinosa* that results in the active bacterial metabolites (spinosad A and spinosad D) found in Entrust, for instance. But if anyone figures out an end-around from purchasing from Dow AgroScience, as in this product example, well, I'm all for it.

Meanwhile we have other threads going about [homegrown lactobacilli](#) and the like. There's potential overlap to be sure but it's also savvy to keep threads more or less to task. A **fermented plant extract** rich in nutrients is not the same as a **microbial brew** (like compost tea or effective microorganisms) for biological reinforcement which is not the same as an **organism ferment** offering specified orchard results. Hopefully this wee bit of categorization helps folks sort through what probably can seem somewhat repetitive if not downright evangelical.

[Lost Nation Orchard](#)

Zone 4b in New Hampshire

Edited 3 time(s). Last edit at 08/19/2018 05:51PM by Michael Phillips.

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

[Karen Brindle](#)

[Re: Inoculants \(Skipping the Compost in Compost Tea\)](#)

January 17, 2019 08:08AM

Harrison Van Meekeren Wrote:

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- > Ever Since we started brewing compost tea on the
 - > farm it has been a real pleasure to watch how
 - > different brews can be from batch to batch based
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 - >

Hi Harrison, I had the same clogging problem when spraying my ferment tea, then I started using a compost tea bag to pour my tea through before adding it to my spray tank. [Compost tea bag](#) Yes, there is a lot that is left behind, it just gets added to our compost. 900 gallons though, this bag might not be big enough to handle that volume. I did also increase the nozzle size.

[Vista Ridge Orchard](#)

Zone 8a in Washington

235 Cider and heritage apple trees, 72 varieties,

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