



fermented plant extracts

Posted by [Michael Phillips](#)

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

[Michael Phillips](#)

[fermented plant extracts](#)

January 07, 2016 04:45AM

Moderator

Registered: 11 years ago

Posts: 621

Exciting news for home brewers! You will find a paper in our library detailing the latest herbal tea insights for kick-ass foliar nutrition in the orchard. Check out [Fermented Plant Extracts](#) as this discussion begins there.

I'm incredibly pleased at the quality of my fruit with respect to summer disease and rots, keeping ability, and flavor. What's cool is the nutrition behind this comes from homegrown brews costing about \$1 a gallon. I'm laying out possible ingredients so others can riff on fermented plant extract possibilities in their own way. This past summer I undertook nutritional analysis of both the **calcium tea** and the **silica tea**. These revealed spectacular levels of calcium and silica, along with other nutrient levels, all of which I suspect are highly bioavailable because of the microbe action. The comparison ranges are for compost tea so not quite the same but at least a starting reference. I used five gallons of each tea per hundred gallons per acre. Three applications were made in the fruit sizing window followed by two summertime applications of just the calcium tea. Each tank mix included the appropriate combination of the holistic core ingredients (neem, seaweed, fish, and effective microbes) based on timing. I do not spray sulfur or other organic mineral fungicides.

I'll keep my fingers crossed that someone else has been intrigued to use fermented plant extracts in their orchard and/or simply has a counter opinion about foliar calcium and silica products being better (although costly) to make this a useful grower conversation.

[Lost Nation Orchard](#)

Zone 4b in New Hampshire

Edited 1 time(s). Last edit at 01/07/2016 02:04PM by Michael Phillips.

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

[Peter Fisher](#)

[Re: fermented plant extracts](#)

January 07, 2016 04:34PM

Registered: 10 years ago

Posts: 82

We have a small orchard (150 trees). I made a first attempt at using the fermented herbal teas this past season. Since the first three sprays according to your timetable combine the silica and calcium teas, I just made one brew combining the ingredients in the two teas to simplify the task. I purchased azomite, basalt dust, humic acids, and gypsum; plenty of nettles growing here, garlic scapes from the garden, comfrey growing around some of the fruit trees. Then I brewed compost tea and mixed a portion of the herbal teas with the compost tea, neem, liquid fish, and kelp, before spraying. For the summer sprays later on I brewed a batch of just the calcium tea.

Question for next time: Would I have been better off to brew the compost tea first and then add it to the silica and calcium teas at the start of the fermenting process, rather than brewing the compost tea just when I am ready to spray? I am using a fungal compost from Keep It Simple (which was also the source of most of the purchased ingredients for the herbal teas) in a little 5 gallon brewer; the recommendation is to use the tea soon after it has brewed. But doing it this way means I have no substitute for the Effective Microbes in the herbal tea brewing process. I don't know the consequences of doing it one way or the other. I suppose the solution is to use both: put EM in the herbal teas at the start, use freshly brewed compost tea in the spray.

Issues: I have been unable to find horsetail around here. Is there a good substitute? I also cannot get raw milk as it is illegal for a dairy to sell it in Iowa, and this isn't dairy county to begin with. Since we are after the calcium, I assume skim is as good as whole, if I have to use pasteurized milk. Does powdered milk work just as well?

Peter Fisher

Turkey Creek Orchard

Solon, Iowa

Turkey Creek Orchard

Solon, Iowa (zone 5A)

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

[Michael Phillips](#)
[Re: fermented plant extracts](#)

January 08, 2016 04:11PM

Moderator

Registered: 11 years ago

Posts: 621

Glad to hear you are giving fermented plant extracts a go, Peter. I began with straight herb teas some ten years ago and then upped the ante all the more in reading Jerry Brunetti's experience with nutritional brews in *Farm as Ecosystem*.

The advantage of using effective microbes in the brewing stage is that these are facultative organisms, meaning the lactic acid bacteria and so forth can live in an anaerobic environment as well as aerobic. Compost tea ups the ante with respect to aerobic organisms so using just-made compost tea on the day of a spray gives you an even wider range of microbes. Certainly there are microbes on the surfaces of the plants we ferment and that alone may be effective. I just happen to have activated em by the barrel, so adding it is simple enough. Some growers use worm castings as a source of both nutrients and microbes.

Bamboo is another source of silica as might be rice hulls. This paper speaks to the [silica content in grass and sedge plants](#) in marshy areas. Environmental variables affect all this. Horsetail, particularly *Equisetum arvense*, is a dependable source. Bottom line is we each must work with the plants available to us where we live.

Sometimes I use raw milk, sometimes I use whole milk from the grocery store without growth hormones. I've been using two gallons in my barrel batches of the calcium tea -- whereas Jerry was big on the five gallon rate -- and given no odor problems in this regard I expect I will up my rate as well. Grass-fed is an important distinction, as this makes the milk richer in omega-3 fats, vitamin E, beta-carotene, and CLA (a beneficial fatty acid named conjugated linoleic acid). This part of the recipe is about calcium content and fatty acids.

[Lost Nation Orchard](#)
Zone 4b in New Hampshire

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

[Russ Martin](#)
[Re: fermented plant extracts](#)

January 27, 2016 05:28AM

Registered: 8 years ago

Posts: 19

Last year I read on the Fedco Website that fermented chive tea has a insecticidal or an insect repellent quality. I have an abundant source of common chives and garlic chives so I tried it. I also used nettle tea, neem, fish (only at recommended holistic spray times), Bt and Spinosad. I was very happy with the resulting apples. Does anybody have any experience using a fermented chive tea? As chives are in the garlic family (Allium), would they be a substitute for garlic scapes? Chives are certainly available earlier in the season than garlic scapes. I will add fermented horse tail tea to the mix this next season. I will also add some EM culture to the teas after they cool too.

Russ Martin
Hager City, WI
Zone 4a

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

[Michael Phillips](#)
[Re: fermented plant extracts](#)

January 28, 2016 04:50PM

Moderator

Registered: 11 years ago

Posts: 621

Glad to hear you are working with fermented plant extractss, Russ! Let's take on this allium angle. The contribution of garlic scapes in the calcium tea is to help carry nutrients through a membrane. The organo-sulfur compounds in garlic are noted for this. Rub a cut clove of garlic on the bottom of an infant's foot and within several seconds you will smell garlic in the breath. I wrote about this in *Holistic Orchard* if you want more detail. What's being done in this regard has nothing to do with the product promises of "garlic barrier" and similar. On the other hand, I bet the fermented chive tea does have those sorts of insect repellent qualities. The real question is what insects? Soft-bodied aphids and mites, probably. Egg-laying moths, maybe. Curculio and sawfly, far less likely. These are the sorts of things we need to learn by observing.

The calcium and silica plant extracts are more aimed at inducing systemic resistance, and in particular the cuticle defense. I only wait to do these brews till the plants being brewed are in the right stages ... which happens to correspond nicely with the fruit sizing window and then on into summer. The underlying promise of balanced nutrition is healthy tree metabolism. And that will impact insect pests! I agree that we can learn more about using fermented plant extracts even earlier in the season though the underlying mechanism may be much deeper than merely "repelling" critters.

[Lost Nation Orchard](#)
Zone 4b in New Hampshire

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

[Joanne Patton](#)
[Re: fermented plant extracts](#)

January 28, 2016 06:10PM

Registered: 7 years ago

Posts: 62

Hmmm, I wonder, would it be useful to freeze fresh scapes, nettle, comfrey for use earlier in the **next** season to get a jump start on building and expanding (?) the benefits or would freezing fresh material destroy the plant material/cell walls too much....

Joanne Patton, Squire Oaks Farm
Zone 6A, Northern Virginia
[Reply](#) [Quote](#)

[Michael Phillips](#)

[Re: fermented plant extracts](#)

January 28, 2016 11:38PM

Moderator

Registered: 11 years ago

Posts: 621

One of my goals with this post was that people would look at the nutritional analysis of these extracts posted in the article on file in our Library. Please give [Fermented Plant Extracts](#) a read. The values given by the lab represent compost tea ranges ... and to date I have not found anything more applicable.

Calcium levels in the calcium tea is a tell-all ... it would be interesting to hear how this stacks up to foliar calcium products. The high levels of soluble salts must be from the dissolved rock dusts, I suspect, but there's been no worries foliage-wise. Boron is always useful. And I was pleasantly surprised by the nitrogen charge in both extracts.

The general chemistry report shows the silica tea sample contains 55.6 mg/L silica. I tried finding an interpretation on the internet and here's one bit of what I found that suggests this is useful:

Sodium silicate foliar sprays at 50 mg/L Si (right) increased flower diameter and height of Gerbera hybrid 'Acapella' compare to Si untreated plants.

The fact that these fermented plant extracts are biologically-active also makes a difference in several respects. Humates are said to chelate the minerals in bioavailable form. Microbes facilitate mineral absorption, particularly lacto-bacilli. Leaf surface action includes nutrient release when microbe eats microbe. This is far more advanced than straightforward absorption of soluble ions by stomates. Plus the focus is just as much on strengthening the cuticle as it is traditional foliar feeding.

[Lost Nation Orchard](#)

Zone 4b in New Hampshire

[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](#).