



homemade EM ?

Posted by [Paul Townsend](#)

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[Paul Townsend](#)

[homemade EM ?](#)

March 02, 2015 05:23AM

[\[www.hawaiihealingtree.org\]](http://www.hawaiihealingtree.org)

Registered: 10 years ago

Posts: 27

i came across this websight .. what do you think ?

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[David Maxwell](#)

[Re: homemade EM ?](#)

March 02, 2015 09:37PM

Registered: 11 years ago

Posts: 197

Undoubtedly "things" will grow in a broth of rice water exposed to the air, but there will be no control whatsoever as to just what organisms there will be. It may well be that the things which arise are beneficial, (or maybe not), but absent any evidence one way or another, it is impossible to determine whether they have any effect. If you want to find out I suggest you conduct a proper experiment (and then report it back to the group). You need a block of trees, divided preferably in a random allocation, with controls, rice water culture, and, ideally, branded EM culture, with a record of results predefined, (eg SG of leaf tissue [which hasn't proven to be terribly satisfactory to this point], percent of insect-damaged fruit, percent of scabby fruit, number of cankers, or any other criterion you care to dream up. But 1) it is scientifically more valid to set your criteria in advance. (Massaging your results after the fact to find some apparent correlation is considered poor science, albeit extremely common.) 2) If you can organise your data collection in a manner that you are blind to which trees were sprayed with what, this is best. (For me, this was easy - I sprayed my test trees, and noted which ones had been sprayed on a map. By the time I went back to tabulate the results of my spraying, I had (in my old age) totally forgotten what had been sprayed where - one tree looked just like any other.) Just don't mark your trees in a manner which allows you to identify them when evaluating results. Maintain your records of location separate from the results until the end of the season, then marry them, so as to maintain the "blinding". (And try not to lose your record of which trees you did spray - I have made this mistake myself.)

[Broomholm Orchard](#)

Zone 5b in Nova Scotia

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[Todd Parlo](#)

[Re: homemade EM ?](#)

March 03, 2015 12:08AM

Registered: 10 years ago

Posts: 301

Here here.

I find all too often there is an unneeded divide between the scientific method and non-conventional farming practices. Most of this scrutinizing we learned in grade school: control plots, methodology, blind review (those conducting the experiment were not permitted to review the results), repetition of results, or the ultimate, Heisenberg's uncertainty principle. (ok that last one I learned in college). Point is, it really is intuitive, and if we are careful some studies in this group can be very helpful to us all. David, perhaps you could find an example of a similar research project that addresses the protocol and upload it for us all to look at, as a template.

I would like to add, that a study is a piece of a puzzle in many cases. At the moment I am trying to wrap up an all too large piece of research, which has the shortcomings of most projects of this ilk. It is a slice of time in a particular location with god knows how many variables. I find myself questioning myself at every moment now. But, when paired with others like it, we will find new answers that it could not answer.

So, lets think about a day when this forum is filled with bite sized studies that make sense as a collective.

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[David Maxwell](#)

[Re: homemade EM ?](#)

March 03, 2015 02:05AM

Registered: 11 years ago

Posts: 197

I am not sure I understand the "un-needed divide". I fully agree that there is a divide between belief and science, but I am not sure that it is a false divide. The question posed by Paul was, I concede, not explicit, ("what do you think?") This could be interpreted as "What do you believe?", in which case you are perfectly entitled to believe that it is the discovery of the century and breaks the unwarranted stranglehold on the market exerted by Dr Shiga, (have I gotten the name correct??) (This is how our current Prime Minister in Canada conducts his business. But he has recognised that it is incompatible with objective truth and taken explicit measures to eliminate all evidence where

possible, and muzzle the scientists otherwise.)

Now, if one interprets the original question as I did - does a home-brewed mix of rice water and milk allowed to ferment in the air have a beneficial effect on plants?, then the only way to determine some evidence one way or another is to conduct an experiment, removing as much as possible all sources of bias and confounding. This is why I was suggesting conducting an explicit trial, in a uniform block of trees of the same cultivar, divided at random, in order to render as much as possible the only variable being the experimental treatment. (And I did expand it a bit to include a comparison group sprayed with "real" EMs. And if one wanted to take it even farther, one could organise the randomisation in Latin Squares, with 1/4 of the trees being sprayed with both mixtures.) One must then reduce all known sources of bias, hence the suggestion to collect the data without knowing the allocation of the tree being surveyed.

I am not against intuition, belief, holistic agriculture, or unconventional practices. All I am suggesting is that if you want to determine the objective reality of any of these notions, you have to apply a scientific method. A home-made brew may well be every bit as effective as the commercial mix, and I am not dismissing it automatically, (although I will admit a certain scepticism engendered by the fact that one has absolutely no idea what the bacteriologic mix in the home-made version is, and indeed whether it would be in any way comparable from one batch to another). All sorts of implausible ideas have proven to be absolutely valid, (sometimes even because of the Heisenberg Principle). But one can't determine the validity any other way than by trying it.

[Broomholm Orchard](#)

Zone 5b in Nova Scotia

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[Michael Phillips](#)

[Re: homemade EM ?](#)

March 03, 2015 05:39AM

Moderator

Registered: 11 years ago

Posts: 621

And meanwhile I would like to turn this conversation back to Paul's point. How brilliant it would be to be able to create an indigenous brew that matches the "effectiveness" of effective microbes! The key point being can we mere humans direct the diversity of species in a given brew? And thus not have to spend big bucks to get a "guaranteed" result? What follows is pure speculation.

I think growers could manage this ... but I don't yet know how. Obviously Dr. Higa did "it" originally. The use of milk in this referenced Hawaiian method obviously is what introduces lactobacillus. But the range of other species in em doesn't necessarily come from rice serum, it seems to me. I got to spend time with Steve Becker of [Tainio Technology](#) at a recent conference. Tainio is the company delivering specific microbes to many companies with proprietary biological formulations. These people use definite cultures and brewing methodologies to get desired results. The process is more involved than the man in Hawaii suggests. Yet with microscopic analysis we growers could zero in on the right range of species. Adding an aerated component to the process makes sense to fully promote reproduction of photosynthetic bacteria.

The point is this is an obtainable goal. Seemingly complicated but eventually basic. Let's chew on this nut more. Someone else out there has the next piece of the puzzle to share.

[Lost Nation Orchard](#)

Zone 4b in New Hampshire

Edited 2 time(s). Last edit at 03/03/2015 03:49PM by Michael Phillips.

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[Paul Townsend](#)

[Re: homemade EM ?](#)

March 03, 2015 06:45AM

Registered: 10 years ago

Posts: 27

thank you Michael.. my thoughts exactly .. I'm not a salesman or even that smart .. just thinking local ...simple biology.

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[Nick Segner](#)

[Re: homemade EM ?](#)

October 27, 2015 05:22AM

Registered: 9 years ago

Posts: 49

I'll throw in my 2 cents - why not go for AACT? Of course there's the expense of the equipment but you could feasibly use a 5 gallon pail or 55 gallon drum to brew in, buy a pump and diffuser with which you could develop a sufficient agitation/airation system, obtain a relatively simple 400x light microscope .. and then use your own woody compost and from there on out the cost of the brew is measured in cents rather than dollars. I have found people are available to help teach the brewing and microscopy method for free, myself included, though I'm just a beginner. Let's learn together!

Wildcat Valley Farm

Zone 8b

Olympic Peninsula Rainshadow

Port Angeles, Washington

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[Tim Bates](#)

[Re: homemade EM ?](#)

December 11, 2015 08:20PM

Registered: 11 years ago

Posts: 58

2 more cents. I have been using AACT for many years now (there is a paper in the library here--Scab Dancing). The money was spent--I make 240 gals at a time. I still use it with every holistic spray, since it is only a couple of bucks an acre. I also spent a lot of money sending tea to Soil Foodweb folks for analysis, with all kinds of extra inputs to make it jump into high fungal range (and getting cost up to 8-12 bucks an acre). It never happened--I got just as good results with just my compost, some crab shell (cheap) and a dab of fish hydrolysate. The two best results were the first tea with a rigged up 200 gal tote with 4-6 aquarium aeraters and some hand stirring. Then the nearly 3,000 dollar Geo Tea brewer and the results fell into the lower range for fungal activity. The other best (yet) was this last year 2015 when I added 8 gals of EM to the brewer! Not a surprise, actually. Above Range for active fungal at last. Back to my 2 cents--unless the cost of a brewer has dropped drastically (several other models out there I have not checked out) I would not spend the big bucks on it. Rig up your own for a couple of hundred. My intuitive feeling is that without the tea, but the EM of course, I would probably be getting the same results in the orchard following Michaels holistic programs. Making your own EM sounds very promising...it is pretty expensive, but definitely shows results.

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[Michael Phillips](#)

[Re: homemade EM ?](#)

May 02, 2016 08:04PM

Moderator

Registered: 11 years ago

Posts: 621

I found a recipe for making a beneficial organism culture that covers all the bases, I do believe. Check out "[HOW TO PREPARE A BENEFICIAL MICROORGANISM MIXTURE](#)" on the Permaculture Research Institute website. Add a couple quarts of pond water and you may even induce a photosynthetic bacteria faction. This is worth printing out to have on hand.

[Lost Nation Orchard](#)

Zone 4b in New Hampshire

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[Paul Weir](#)

[Re: homemade EM ?](#)

May 10, 2016 05:10AM

Registered: 11 years ago

Posts: 187

I like it! and I have the pond water on hand too!

Nice share Michael!

[Gopher Hill Apples](#)

Zone 8 in California

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