Ongoing Experimentation with Indigenous Microorganisms (IMO) and Effective Microorganisms (EM) at ECHO

ECHO Inc.

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Andy Cotarelo shared, "Recently we obtained some recipes of EM and IMO from network members in Thailand and in the US, all of whom are using the soil organisms and have seen positive results in their gardens and farms. Some network members are using EM, a purchased product, while others are creating their own versions of IMO. We are now experimenting with these recipes of IMO and testing them against the EM purchased product to see if they perform worse, as well or better. We have been able to set up a protocol for making EME and having it available to interns to use in their garden. The Activated EM will last for up to four months, so it can be used as needed. The other problem we have solved is how to apply the EM. We recently purchased a mist blower that will blow a fine liquid mist onto plants [EM can be applied to soil or leaves; as a foliar application, the benefit to plants is said to come from plant photosynthetic bacteria in EM that produce sugars/substances beneficial to plant health]. This allows interns to cover a large area quickly. We are in the process of setting up a 35-gallon sprayer that interns can use to spray larger amounts of EM in their areas with fewer refills, thus saving time. [In addition,] a donor offered to supply us with an inline dosing pump that would allow us to use EM in our drip tape. This would be a very simple process that would allow us to drench large amounts of soil with EM, with very little effort.

"Intern Brandon Lingbeek has been instrumental in the introduction of EM here at ECHO due to his research and application of it. Right now he and Brian Dant are conducting an experiment testing the effectiveness of EM vs. FPJ vs. Control. Brandon and Brian have also made the process and recipes much easier for staff to utilize.

"How EM is used at ECHO varies from intern to intern. Some use the EM very faithfully on certain plants to see if there is any difference in growth or health. Some will use it to remediate soil when pathogens or pests are dominating and [the soil needs] to be brought back into balance. Some will use it as a pre-planting and post-planting drench for new plants. Right now, [ECHO is seeking to further our knowledge and experience with EM and IMO through more focused research.] Joel Wildasin has been experimenting with… a fermented feed for animals….Joel's experiments have focused on silage for our ruminants. I have experimented with making bokashi (wheat bran, molasses, EM) at home and pickling my compost scraps so that I can bury them in my garden and have accelerated compost. This may be something useful to our network members that cannot deal with scraps in a timely manner. We are just starting to get data in on how to make the feed successfully. We are trying to find recipes that work for us and our food sources.

In December we made a fermented feed with pounded rice hull, moringa, wheat bran, molasses and EM. [This is a modified recipe from Keith Mikkelson's book A Natural Farming System for Sustainable Agriculture in the Tropics] After the first of the year we will crack it open and see how the chickens like it. We have two different sets of ratios [for ingredients] to see which works best.

"We have some fermented feed made from napier and are seeing if the goats will eat it. This spring we will bury some of the fermented kitchen compost and see how it does as a soil amendment and fertilizer. The experimentation is in the infant stages and will probably slow down as Joel leaves in April.

"[Our experience at ECHO with] the propagation of soil organisms is at an infant stage, but is quickly maturing as we gain more experience and because we have staff and interns that want to learn and experiment with EM/IMO. Most of this research and experience has happened within the last year. As this topic becomes more widely discussed and more information becomes available, EM/IMO will become easier to research at ECHO."

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