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Opinion

Preparation of Enhanced Beneficial Effective Microorganism concentrate

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In Biodynamic organic agriculture the use of EM mixtures is known worldwide with cultures of effective microbes. These microbes due to their symbiotic relationships with each other can cause benefits to the ecosystem in agriculture soils, composting yards, orchard farms, estates and toilets. Effective micro organisms are known for boosting and speeding up the yield and quickening the composting process.

It is not a single microbial culture but a combination of three or more types of microbial life that join together to form the EM mixture. Hence we cannot attribute the key to one certain strain of microbes, but rather the combination of many groups that performs the positive beneficial effects that are expected from the application of this EM on the soil and on the foliar. To name a few microbes that predominantly present in the EM are: Bacteria: Phototrophic bacteria (this bacteria does photosynthesis for energy production), Lactic acid bacteria and Yeast: baking yeast, unicellular fungi etc.

On par with Japanese EM the EM we prepared is completely indigenous and enhanced. It is prepared using what is available in the local Indian markets. The fruits and vegetables commonly available and cheap sometimes over ripe rotting vegetables are procured in this EM preparation. We learnt this recipe from the local farmers who wanted to be indigenous farmers and cultivate native crops using native manure, native EM, native earthworms and so on. The recipe is used successfully with some modifications for sustained effect on the crop.

Recipe for 25 liters of EM concentrate

- 2.5 kg of papaya (Crushed) wasted fruit is also fine. Seed and skin removed.
- 2.5 kg well ripened bananas(Crushed)
- 2.5 kg of sweet pumpkin (Crushed) skin and seed removed.
- 2 nos. of country chicken eggs
- 2.5 kg of Jaggery (non-refined sweetener)
- 2.5 litres of 7day fermented butter milk for yeast and lactic acid
- 12.5 litres of Water - (chlorine free).
- Any five verities of herbal roots are collected dried and powdered (25grams each)

In a fifty litres container the crushed fruits are first added with jaggery and eggs. Then the buttermilk and herbal roots are added and mixed well with hands. After this the 12.5 litres of water is added and mixed well once again. Now this solution is closed tight with a lid which has a small vent for the gas to escape. Allow the mixture to ferment in the container with a wide opening and a tight lid. This container is placed under a shade for 21days. In between, after every five days the solution is given a gentle shake by opening the lid. At the 21st day the EM concentrate is ready for soil and foliar applications. When the container is opened a pleasant fermented fruit mix smell indicates the maturity of the EM.

Directions for use

We can use the mixture right away, as it is, by diluting it 1:10 in water for foliar spray and 3:10 in water for soil application. This enhances the culture multiplication in the soil. Spraying it on the foliar of vegetables and fruit trees when they are in flowering and it helps the plant to resist the spreading of microbial diseases and stimulates the growth. Adding a spoonful to our compost toilet after each visit reduces bad smells, speeds up the composting process and balances nitrogen access. Mixing it into our agriculture soil creates a good microorganism environment before planting the

fruit trees and vegetables. Adding to our mulch basin every once in a while increase the composting speed. Spraying it on the dried leaves and garden waste speeds up the composting and increases the nutritious upper soil formation.

Uses

This enhanced indigenous EM acts as a very effective biodynamic plant growth promoter, increases flowering and foliage when applied before flowering. Resists and repels the pest and disease attack by increasing plants' immunity power. It increases the beneficial micro organism content in the soil for sustained organic soil health. It decomposes the dry leaves and sticks faster.

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