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JEEVAMRUTHAM: BOON FOR MICRO-ORGANISMS AND SOIL

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INTRODUCTION

Jeevamrutham is a natural, fermented, reduced microbial preparation that nourishes the soil, promotes microorganism growth, and improves the soil mineralization. Organic liquid fertilizer is a fermentation product that contains effective living soil microbes and increases plant growth and productivity by delivering readily available nutrients. Such fertilizers are reduced, environmentally benign bioinoculants with a lot of potential to boost agricultural production in a long-term way. Biofertilizers are grouped into many varieties based on their functions, such as nitrogen fixation, phosphate solubilization, Neem leaves are work for insecticide and other plant growth-promoting biofertilizers.

Excessive use of the chemical fertilizer has disadvantage over the fertility of the soil. Jeevamrutham is the best alternative that we can use in place of chemical fertilizer. Jeevamrutham is completely organic and can be used in the organic farming. It is also reduced insecticide, fungicide cost. Jeevamrutham serves as the rich source of the microorganism that fix nitrogen, solubilize phosphorus, also it is the rich source of carbon, nitrogen, phosphorus, potassium and many micronutrients. Jeevamrutham is low cost improvised preparation that enriches the soil with indigenous microorganism required for mineralization from native cow dung, cow urine, horse gram and jaggery, neem leaves, soil. Jeevamrutham, in acidic soil when applied increases pH and in alkaline soil decreases pH, thus creates favorable condition for availability of maximum nutrients to plants, pH 6.5 to 7.8. This condition increases the crop yield, and cuts down an entire expenses of chemical fertilizer. The plant growth promoting Rhizobacteria, *Bacillus pumillus* and *B. licheniformis* produce high amount of physiologically active Gibberellins.

Jeevamrutha refers to fermented bacterial cultures. It offers nutrients, but it also functions as a catalytic agent, promoting soil microorganism activity and increasing earthworm activity. Aerobic and anaerobic bacteria found in cattle dung and urine grow during the 48-hour fermentation process as they consume organic material (like pulse flour). As an inoculum of biological bacteria and organisms, a handful of undisturbed soil is added to the mix. Jeevamrutha also helps to keep bacterial and fungal plant diseases at bay. Palekar claims that Jeevamrutha is only required for the first three years of the transition, after which the system will be self-sufficient.

METHOD FOR JEEWAMRUTHAM PREPARATION

Ingredients

Materials	Quantity
Local fresh cow dung	10 kg
Cow urine	10 lit.
Soil	02 kg
Gram flour	02 kg
Jaggery	02 kg
Neem leaves	10 kg
Water	200 lit.

For the preparation of Jeevamrutham traditional method was followed which is given by (Palekar, S. 2006).

Some modification was made in order to increase the fertility factor of the Jeevamrutham. Jeevamrutham was prepared First of all, take a drum, put 2 lit. water and 10 kg cow dung inside it and mix both of them. Formulation the 2 kg jaggery in 0.5 lit. water on the gas or stove until both is well formed into a mixture. Mix 2kg gram flour in 0.2 lit. Water and prepare a mixture. Boil the neem leaves in hot water on a gas or stove and boil it for 1 hour then add the boiled water to the mixture after some time.

Two handfuls of fertile soil taken from the roots of banyan tree. The above ingredients should be stored in a cool and dry place. The mixture needs to be stirred couple of time (10 min) for 4 days. The ingredients are fermented after 20 days Jeevamrutham is prepared for the use.

RESULTS

Jeevamrutham hastens the natural functions of the soil there by increasing the growth rate of plants and their yield. Earthworm, inevitable to the fertility of soil moves up towards the top as a result of this. The elements in the excreta of earth worm, is broken down into molecular form by the microbes in the jeevamrutham, so that, it can be easily absorbed by the roots. These microbes disintegrate wastes in the soil there by making soil more fertile. The upward and downward movement of the worms loosens up the soil. This creates a positive environment for the growth of the plants. It also helps plants to absorb nutrients from the soil. The amount and cost of pesticide were also reduced. Improve soil physical condition and increase microbial activity. This product is eco-friendly and has no harmful effect on human.

CONCLUSION

Jeevamrutham is rich in beneficial microorganisms including nitrogen-fixing and phosphate solubilizing bacteria. According the findings, Jeevamrutham is most effective between the 8th and 12th days of preparation. The addition of organic liquid manure would aid in the improvement of efficient microbial consortia, boosting NPK content and plant development promoting components. is an excellent substitute to artificial fertilizers, and our bio-enhancer could be a good way to improve soil fertility, rice production, and quality. This product is easily available in local areas and no technical knowledge is required to manufacture this product. Jeevamrutham is used as a biopesticides.



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