



"JEEVAMRUTHAM: FOSTERING SOIL MICROORGANISMS IN NATURAL FARMING"

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Introduction:

Jeevamrutham, also known as Jeevamrutha or Jeevamruth, is a natural liquid fertilizer and alternative to chemical fertilizer. It is a microorganism-rich biofertilizer that helps to improve the soil fertility and productivity of crop. Jeevamruth is derived from two words Jeevan means life and Amrit means medicine stands for "elixir of life" for the soil. Moreover, it is a rich source of numerous micronutrients, potassium, phosphorus, nitrogen, and carbon. It provides nutrients, but most importantly, acts as a catalytic agent that promotes the activity of microorganisms in the soil and also increases population of native earthworms. It includes important microorganisms like rhizobacteria, cyanobacteria, mycorrhizal fungi, and nitrogen-fixing bacteria. This product catalyzes nutrient conversion and helps fight plant diseases. Moreover, it was found that Jeevamrutham is efficiently used between 8th and 12th days of preparation. The addition of such organic liquid manure would help to improve efficient microbial consortia thereby

increasing NPK content and plant growth promoting factors.

When we apply Jeevamrita to the soil, we add 500 crore micro-organisms to the soil. All these are beneficial effective microbes. Our soil is saturated with all the nutrients. But these are in the non-available form to the roots of the plants. These micro-organisms convert these non-available form nutrients into available form, when we add Jeevamrita to the soil. These micro-organisms available all the nutrients (Nitrogen, Phosphate, Potash, Iron, Sulphur, Calcium etc.) to the roots of the plant. After applying Jeevamrita to the soil, the local earthworms start their work. These earthworms bring the nutrients from 15 feet deeper soil to the upper surface and get available to the roots.

Types of Jeevamrutham

- ✓ The liquid state of Jeevamrutham
- ✓ The semi-solid state of Jeevamrutham
- ✓ Dry Jeevamrutham (Ghana jeevamrutham)

The average nutrients content

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Microbial load in Jeevamrutham	
Parameter	Jeevamrutha (cfu/ml)
Bacteria	14 x 10 ⁵
Fungi	17 x 10 ³
Actinomycetes	2 x 10 ³
Azospirillum	8 x 10 ³
Azotobacter	15 x 10 ⁶
P solubilizer	3 x 10 ⁴
K solubilizer	0
Pseudomonas	11 x 10 ⁵
Rhizobium	7 x 10 ⁶
Parameter	Jeevamrutha
pH	4.92
N (%)	1.05
P (%)	0.122
K (%)	0.081
Mn (ppm)	46
Fe (ppm)	318
IAA (µg/ml)	6.02
GA (µg/ml)	36.22
Cytokinin (µg/ml)	2.86

1. Liquid state of Jeevamrutham

Requirements

Water 200 liters, Jaggery 2 kg, Cow dung 10 kg, Pulse flour 2 kg, Cow urine 10 l, Handful of soil from farm/forest/bund.

Method of Preparation

Take a container of 200 liters capacity. Add 200 liters water into it. Then add 10kg desi cow dung and mix it thoroughly in water. Mix it well with a stick. Add 10 liters of desi cow urine into it. Mix powdered organic jaggery 2 kg along with pulse flour 2 kg mix it well without forming any clumps. Finally add 1 hand full of bund/forest soil into the container and mix it well with a stick in clockwise direction. Cover the container with a gunny bag. The mixture should be stirred thoroughly daily in the morning and evening in clockwise direction. Incubate the prepared solution for 9 to 12 days. After the completion of the fermentation process Jeevamruth is ready for use. A golden-brown colored layer can be observed on the top of the jeevamruth solution.

During the fermentation process, the aerobic and anaerobic bacteria present in the cow dung and urine multiply as they eat up organic ingredients (like pulse flour and jaggery). A handful of undisturbed soil acts as inoculate of native species of microbes and organisms. Jeevamrutha also helps to prevent fungal and bacterial plant diseases.

Application

If Jeevamrutham is given by irrigation utilize complete 200 liters.

First spray – One month after seed sowing or transplanting of seedling. Take 100-

liter water to add 5 liters of filtered Jeevamurtham.

Second spray – 21 days after the first spray. Here 150 liters of water plus 10 liters of filtered Jeevamrutham.

Third spray – 21 days after the second spray, take the third spray. 200 liters of water plus 20 liters of filtered Jeevamrutham.

Fourth spray – When fruits are beginning to show up. 200 liters of water plus 6 liters sour buttermilk can be sprayed for one acre.

2. Semi-solid state Jeevamrutham

Requirements - 100kg desi cow dung, 5 litre urine, 1kg jaggery, 1kg pulse, one handful of soil from the same land.

Method of Preparation:

Mix all of them with a small amount of water. Make the small balls out of the mixture.

Keep these balls in full sunlight to dry them.

Now, these dried balls can be kept near the mouth of a dripper or near the sprinkler. When the waterfalls on the semi-solid Jeevamrutham, the microbes get activated again.

3. Dry Jeevamrutham (Ghana Jeevamrutham)

Ghana Jeevamrutha is an organic fertilizer which enriches the soil and plant and provides all the nutrients required for the growth of the plant. It is a rich source of Nitrogen and valuable micro-organisms which naturally enhances soil fertility. This is used

instead of DAP and urea which are chemical input.

Method of Preparation

Spread 200 kg of cow dung evenly across the ground in a layer, then top it up with 20 liters of liquid jeevamrutham and stir. Make a pile of the prepared cow dung, cover it with a jute bag and leave it for 48 hours to ferment before spreading it out and letting it dry in the sun. Once it has finished drying, keep it in the room in jute bags. Ghana jeevamrutham can be used for six months.

Application

Use 200kg of Ghana Jeevamrutham per acre during the sowing phase. Add 50 kg of Ghana Jeevamrutham to the soil per acre again during the crop's blossoming stage, in the space between two crop lines. Incredible yields will be produced.

Benefits of Jeevamrutham

- 1. Enhance soil fertility-** Jeevamrutham enriches the soil with essential nutrients and organic matter, improving its fertility and overall health.
- 2. Promotes Microbial Activity-** It stimulates the growth of beneficial microorganisms in the soil, which helps in decomposing organic matter and releasing nutrients in a form that plants can easily absorb.
- 3. Increases Crop Yield-** The use of Jeevamrutham has been shown to increase

crop yield by improving nutrient availability and promoting healthier plant growth.

4. **Cost-Effective-** It is a low-cost alternative to chemical fertilizers, as it can be prepared using locally available materials like cow dung, cow urine, jaggery, and pulses flour.
5. **Enhances Plant Growth-** The growth-promoting hormones and enzymes in Jeevamrutham contribute to better root development, flowering, and fruiting in plants.
6. **Improves Soil Structure-** The organic matter in Jeevamrutham improves soil texture and structure, enhancing water retention and aeration.
7. **Disease Resistance-** Regular application of Jeevamrutham can enhance the plant resistance to pests and diseases by improving their overall health and vigor.

