Jeevamruta: A Traditional Solution for Modern Agricultural Challenges

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ABSTRACT

Jeevamruta is a traditional organic bio-fertilizer used in natural and zero-budget farming to enhance soil fertility and promote sustainable agricultural practices. It is prepared using locally available ingredients, including cow dung, cow urine, jaggery, pulse flour, and soil, which undergo a fermentation process to create a nutrient-rich, microbe-packed solution. This organic stimulant is known to improve soil microbial activity, enhance nutrient availability, and boost plant growth and productivity. When applied to crops through soil drenching or foliar spraying, Jeevamruta enriches the soil with beneficial microorganisms such as nitrogen-fixing and phosphate-solubilizing bacteria, facilitating better nutrient uptake and strengthening plant resistance to diseases. It supports sustainable agriculture by reducing dependency on chemical fertilizers, improving soil structure, and fostering ecological balance.

INTRODUCTION

Jeevamruta is an organic bio-fertilizer widely used in **Zero Budget Natural Farming (ZBNF)**, a concept popularized by **Subhash Palekar**. It is a microbial culture prepared using natural, locally available resources such as cow dung, cow urine, jaggery, and pulse flour. Jeevamruta promotes sustainable agriculture by enhancing **soil health**, improving **plant growth**, and reducing dependency on chemical fertilizers. This

organic preparation introduces **beneficial microorganisms** into the soil, stimulating plant growth and improving soil fertility without harming the environment (Palekar, 2006).

COMPOSITION OF JEEVAMRUTA

Jeevamruta is prepared using locally available, natural ingredients. The standard formulation includes:

1. **Cow Dung (10 kg)** – A rich source of essential microbes and nutrients.
2. **Cow Urine (5-10 liters)** – Contains nitrogen, minerals, and antimicrobial properties.
3. **Jaggery (1 kg)** – Provides energy for microbial growth.
4. **Pulse Flour (1 kg)** – A source of nitrogen and microbial nutrition.
5. **Soil (Handful)** – Introduces local soil microflora.
6. **Water (200 liters)** – The base for fermentation and nutrient dissolution.

MECHANISMS OF ACTION

Jeevamruta enhances plant growth and soil health through multiple mechanisms:

1. **Microbial Enrichment:** Introduces beneficial microbes such as nitrogen-fixing bacteria and phosphate-solubilizing microorganisms (Desai, 2014).
2. **Nutrient Mobilization:** Facilitates the breakdown of organic matter, making nutrients bioavailable to plants.
3. **Plant Growth Promotion:** Stimulates the production of plant growth hormones like auxins and gibberellins.
4. **Disease Suppression:** Competes with harmful pathogens, reducing the incidence of soil-borne diseases.

Benefits of Jeevamruta:

1. Effect on Seed Germination

- **Enhanced Germination Rate:** Jeevamruta improves the speed and uniformity of seed germination due to the presence of beneficial microorganisms that break down seed dormancy.
- **Seed Vigor:** It strengthens seedling vigor by providing essential nutrients and growth-promoting substances.
- **Disease Resistance:** Treating seeds with Jeevamruta reduces seed-borne diseases and protects against fungal pathogens.

2. Effect on Root Development

- **Improved Root Length and Density:** Jeevamruta promotes the development of longer and denser roots, increasing the plant's ability to absorb water and nutrients.
- **Stronger Root Systems:** The presence of phosphate-solubilizing bacteria enhances phosphorus availability, promoting stronger roots.

3. Effect on Vegetative Growth

- **Enhanced Biomass Production:** Jeevamruta accelerates leaf, stem, and shoot growth by providing essential macro and micronutrients.
- **Chlorophyll Content:** It increases chlorophyll synthesis, leading to greener, healthier leaves and improved photosynthesis.
- **Plant Height:** Regular applications promote faster plant growth, resulting in

increased height and foliage density (Patil, 2020).

4. **Effect on Flowering and Fruiting**

- **Early Flowering:** Jeevamruta stimulates the production of plant growth hormones (auxins, gibberellins) that induce earlier flowering.
- **Increased Flowering Intensity:** Treated plants produce a higher number of flowers with improved size and quality.
- **Fruit Set and Quality:** Jeevamruta enhances fruit set by improving pollen viability and ensuring better nutrient flow to developing fruits.

5. **Effect on Crop Yield**

- **Higher Productivity:** Jeevamruta significantly increases crop yields due to better nutrient availability and improved plant health.
- **Improved Quality:** It enhances the size, color, and taste of fruits and vegetables, improving market value.

6. **Microbial Activity and Soil Health**

- **Microbial Diversity:** Jeevamruta introduces and supports the growth of beneficial microbes such as nitrogen-fixing and phosphate-solubilizing bacteria (Subhashini & Ramesh, 2018).
- **Soil Fertility:** It enriches soil with organic carbon, improving soil texture and water retention.
- **Nutrient Cycling:** The microbes in Jeevamruta facilitate the conversion of organic matter into plant-available nutrients (Reddy, 2010).

CONCLUSION

Jeevamruta is a powerful **organic bio-fertilizer** that plays a crucial role in promoting **sustainable agriculture**. Its natural composition, derived from locally available materials like **cow dung, cow urine, jaggery, and pulse flour**, makes it a **cost-effective** and **eco-friendly** alternative to chemical fertilizers. By enriching the soil with **beneficial microorganisms**, Jeevamruta enhances **nutrient availability**, improves **soil health**, and boosts **plant growth** across all developmental stages. The regular application of Jeevamruta leads to **improved seed germination, stronger root systems**, **enhanced vegetative growth, early flowering**, and **higher crop yields**. Furthermore, it promotes **soil microbial diversity**, ensuring **long-term fertility** and **sustainable productivity**. Adopting Jeevamruta as a **bio-enhancer** supports the vision of **sustainable, organic, and regenerative** farming systems. Its proven benefits make it a **viable solution** for enhancing **crop productivity**, **soil conservation**, and **agricultural sustainability** for future generations.

REFERENCES

Desai, A. (2014). Role of Bio-Inoculants in Organic Farming. *Indian Journal of Agricultural Sciences*, 84(7), 890-895.

Palekar, S. (2006). *The Philosophy of Spiritual Farming.* Maharashtra, India: Zero Budget Natural Farming (ZBNF).

Patil, S. (2020). A Study on the Effect of Jeevamruta on Growth Parameters of Tomato (Solanum lycopersicum). *International Journal of Agricultural Research*, 9(2), 78-84.

Reddy, G.P. (2010). *Organic Farming: Theory and Practice.* Kalyani Publishers.

Subhashini, D., & Ramesh, P. (2018). Impact of Jeevamruta on Soil Microbial Activity and Crop Yield. *Journal of Organic Agriculture*, 15(3), 145-152.