

A REVIEW ON PANCHGAVYA IN MODERN AGRICULTURE: A SUSTAINABLE APPROACH TO ENHANCE CROP PRODUCTIVITY.

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Abstract:

Panchgavya, a traditional Indian preparation derived from cow-derived products, has gained prominence in modern agriculture due to its potential to improve soil health, enhance crop yields, and reduce reliance on chemical inputs. This review article provides an in-depth analysis of the role of Panchgavya in contemporary farming practices. It explores the science behind Panchgavya, its application in sustainable agriculture, and the implications for food security and environmental sustainability.

Introduction

Modern agriculture faces numerous challenges, from declining soil health to environmental concerns associated with chemical inputs. Panchgavya, an ancient agricultural formulation composed of cow-derived products—milk, curd, ghee, urine, and dung—has emerged as a promising solution to address these issues. In this review, we examine the scientific basis for Panchgavya in agriculture and its potential to transform modern farming practices. Panchgavya, an organic product has the potential to play the role of promoting growth and providing immunity in plant system. Panchgavya consists of nine products viz. cow dung, cow

urine, milk, curd, jaggery, ghee, banana, Tender coconut and water. When suitably mixed and used, these have miraculous effects.

Protocol for Panchagavya Preparation:

Mix thoroughly fresh cow dung (7kg) + Cow ghee (1 kg)

(Incubate for 2 days)

Add Cow urine (3 lit) + 10 lit of water

Stir properly (morning and evening, daily for 1 week)

Add Sugarcane juice (3 lit)

Add Cow milk (2 lit)

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Add Cow curd (2 lit)



Add coconut water (3lit)



Add yeast 100 gram and 12 ripened bananas

The whole mixture is to be incubated for two weeks and the preparation should be filtered through double layered muslin cloth and stored in bottle under refrigerator and used as and when required.

Beneficial Effects of Panchagavya:

Panchagavya is a component of crop production and it plays a crucial role in each and every component of crop management like integrated soil fertility management, integrated pest management, integrated disease management.

Effect of panchagavya on plants:

- Plants sprayed with Panchagavya habitually produce bigger leaves and develop denser canopy.
- Branching is relatively high.
- The rooting is prolific and intense.
- The roots spread and grow into deeper layers were also observed.

Effect of panchagavya on soil fertility:

- Panchagavya improves fertility status in soils by increasing macronutrients, micronutrients and beneficial microorganisms thus increase soil health.

- It improves water holding capacity of soils because it acts as a organic manure.
- It encourages growth and reproduction of beneficial soil microorganisms.
- It increases nutrient uptake in plants and enhances plant growth.

Effect of panchagavya on pest and diseases:

- It increases immunity power in plants thereby confers resistance against pest and diseases.
- Various beneficial metabolites produced by microorganisms such as organic acids, hydrogen peroxide and antibiotics, which are effective against various pathogenic microorganisms.

Effect of panchagavya in different crops:

Mango

- Induces dense flowering with more female flowers
- Irregular or alternate bearing habit is not experienced and continues to fruit regularly
- Enhances keeping quality by 12 days in room temperature
- Flavour and aroma are extraordinary

Acid lime

- Continuous flowering is ensured round the year
- Fruits are plumpy with strong aroma
- Shelf life is extended by 10 days



Guava

- Higher TSS
- Shelf life is extended by 5 days



Banana

In addition to adding with irrigation water and spraying, 3% solution (100 ml) was tied up at the naval end of the bunch after the male bud is removed. The bunch size becomes uniform. One month earlier harvest was witnessed. The size of the top and bottom hands was uniformly big



Conclusion:

Panchgavya offers a sustainable and eco-friendly approach to modern agriculture. Its ability to improve soil health, increase crop productivity, and reduce the reliance on chemical inputs makes it a valuable addition to the arsenal of agricultural practices. As we navigate the challenges of feeding a growing global population while preserving the environment, Panchgavya represents a promising solution for the future of agriculture.

References:

- [ORGANIC FARMING :: Panchakavya \(tnau.ac.in\)](http://tnau.ac.in)
- [\(PDF\) Panchagavya in Organic Crop Production \(researchgate.net\)](http://researchgate.net)

