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SAPTHADHANYANKURA KASHAYAM: AN ITK BIO-ENHANCER FOR ORGANIC FARMING

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ABSTRACT

Sapthadhanyankura Kashayam is a cost-effective, eco-friendly, bio-enhancer formulation. Prepared from the fermentation of sprouted seeds of seven legumes, cereal grains, and desi cow urine, it's rich in essential nutrients and boosts crop growth, improves yield, quality, and soil health. It helps in promoting microbial activity and strengthening plant immunity, thereby developing resistance against biotic and abiotic stress factors. Being very easy to prepare and apply, it reduces the dependency on hazardous chemicals, preventing soil and water pollution. Its use aligns with key Sustainable Development Goals (SDGs) and paves the way for a sustainable approach for low-input organic farming in field and horticultural crops.

KEYWORDS: Bio-enhancer, Eco friendly, Indigenous Technical Knowledge, Organic farming, Organic nutrient source, Sustainable Agriculture

INTRODUCTION

In the last few decades, the rapidly increasing world's population figures have increased demand for food resources. This has resulted in the widespread adoption and growing acceptance of farming techniques based on chemicals in an attempt to increase yield (Mateo-Sagasta *et al.*, 2018). While the application of these chemical inputs initially enhances crop yields by temporarily, readily boosting soil fertility. Their prolonged and excessive use has been shown to degrade soil health, disrupt the natural balance of soil microbial population, leads to nutrient imbalances, reduces organic matter content, and contributes to soil acidification and salinization of soil resulting in an unhealthy ecosystem (Mateo-Sagasta *et al.*, 2017). The uncontrollable usage of fertilizers, soil conditioning substances, pesticides, and herbicides is one of the leading factors for soil and water pollution across the worldwide. Contaminated water has

significantly impacted aquatic ecosystems, reduced biodiversity and poses a serious health risk for human beings, especially women and children as polluted water and tampered food chains are linked to chronic diseases. The accumulated impact has been a surge in water related diseases and increasing the threat for public health and environmental degeneration (Zahoor & Mushtaq, 2023).

Amidst this growing concern, there has been a shift to revive the ancient indigenous technical knowledge system (ITK) as a way of pursuing sustainable and eco-friendly agriculture (Barman *et al.*, 2024). One such traditional practice is *Sapthadhanyankura Kashayam*, most beneficial bio-enhancer prepared from sprouted seeds of seven sprouted grains. This fluid mixture was traditionally used in various aspects of organic farming to enhance soil fertility, stimulates beneficial microbial activity, and strengthens plant resistance for environmental stress (Loura *et al.*, 2022). The adoption of *Sapthadhanyankura Kashayam* is aligns to achieving several of the United Nations Sustainable Development Goals (SDGs), namely SDG 2 (Zero Hunger), SDG 12 (Responsible Consumption and Production), and SDG 15 (Life on Land).Since it encourages sustainable agriculture, food security, and biodiversity conservation by reducing the use of synthetic agrochemicals, it further caters to SDG 3 (Good Health and Well-being), providing opportunities for zero chemical food production and reduction of health hazards due to toxin residues.

WHAT IS THE *SAPTHADHANYANKURA KASHAYAM*

Sapthadhanyankura Kashayam is a Sanskrit-derived term, where *'sapta'* means *seven*, *'dhanya'* refers to *grains*, and *'ankura'* means *sprout*. thus, translating as "sprouts of seven grains This is a term often referenced in Ayurveda, organic farming, and Indigenous Technical Knowledge (ITK) systems. *Sapthadhanyankura Kashayam* is a type of liquid bioformulation made through the fermentation process, using the sprouts of seven grains mixed with urine from desi cows. The grains are soaked in water, and once they sprout, the sprouts are crushed into a pulp, then mixed with cow urine and water. The resultant mixture undergoes fermentation to form a nutritious solution that can be used as a plant tonic or foliar spray. In organic farming systems, where the availability of immediately soluble nutrients is inherently limited, the foliar application of *Sapthadhanyankura Kashayam* plays a crucial role.

It is best used during the flowering and grain-filling stages which are critical periods for nutrient demand. It readily provides primary nutrients, boosts plant immunity and crop quality, beneficially stimulates microbial interactions in the rhizosphere, and increased the productivity. (Sharan, 2018)

Table 1. Ingredients required to prepare *Sapthadhanyankura Kashayam*

Material	Quantity
1. Sesame Seed (*Sesamum indicum*)	100 g
2. Wheat Grain (*Triticum aestivum*)	100 g
3. Green gram (*Vigna radiata*)	100 g
4. Black gram (*Vigna mungo*)	100 g
5. Cowpea (*Vigna unguiculata*)	100 g
6. Chickpea (*Cicer arietinum*)	100 g
7. Moth Bean (*Phaseolus aconitifolius*)	100 g
8. Desi Cow urine	10 litter
9. Water	200 litter

Fig. 1 Different crops for preparing *Sapthadhanyankura Kashayam*

PROCEDURE FOR PREPARING *SAPTHADHANYANKURA KASHAYAM*:

1. **Soak the Grains:**

Take 100 grams of sesame seeds and soak them in water for 24 hours. After that, combine the soaked sesame seeds and the other dry grains in a large bowl, add enough water to cover them, and soak everything together for another 24 hours.

2. **Prepare the Sprouts:**

Allow the grains to soak until they start sprouting.

Once the grains sprout, drain the water (do not discard the water; save it for later use).

Place the sprouted grains in a porous cotton cloth, tie it into a bundle, and hang it in a well-ventilated area to encourage further sprouting.

Wait until the sprouts grow to a length of 2–3 cm.

3. **Prepare the Pulp:**

Once the sprouts reach the desired length, use a stone mortar and pestle to crush the sprouted seeds into a fine pulp. Avoid using a grinder as it may generate heat, which can reduce the potency of the mixture.

4. **Mix the Solution:**

In a container with 200 liters of water, add the prepared pulp from the sprouted seeds.

Add the extra water saved from the earlier soaking process.

Pour 10 liters of desi cow urine into the mixture.

5. **Stir and Ferment:**

Using a wooden stick, stir the mixture thoroughly in a clockwise direction.

Allow the solution to ferment for 48 hours.

6. **Filter and Use:**

After fermentation, filter the solution through a cloth to remove solid particles.

Use the filtered liquid as a spray for standing crops of fruits or vegetables.

APPLICATION OF *SAPTHADHANYANKURA KASHAYAM*

The *Sapthadhanyankura Kashayam* formulation can be applied through soil drenching, foliar spray, or fertigation. However, for higher efficiency, it is primarily recommended as a foliar spray. Depending upon the crop, 1-2 sprays of it can be applied at 30-day intervals. This formulation is suitable for both field crops and horticultural crops.

If prepared as per standard procedure no further dilution is needed. Approximately 200–210 liters (with 200 L water + 10 L cow urine + sprouted grain paste) of the prepared solution can be filtered and sprayed on one acre of field using either a knapsack or power sprayer. Applying the solution at the vegetative stage and again at 50% heading stage will give the best results.

STORAGE OF *SAPTHADHANYANKURA KASHAYAM*

Prepared *Sapthadhanyankura Kashayam* should be stored for 2–3 days in a shaded place, away from rain, and covered with breathable cloth. After this time period, the solution may begin to spoil and develop an unpleasant odor. Avoid storing it in airtight containers, as this can accelerate spoilage due to lack of aeration.

BENEFITS OF *SAPTHADHANYANKURA KASHAYAM*

1. **Natural Bio-enhancer:** *Sapthadhanyankura Kashayam* acts as a natural growth stimulant, supplies enzymes, amino acids and micronutrients. The application of *Saptdhanyankura kashyam* fulfill the crop nutrient demand, supplying readily available forms of nitrogen (1.89%), phosphorus (1.32%), and potassium (0.75%) (Loura *et al.*, 2022).
2. **Improves Soil Health:** *Sapthadhanyankura Kashayam* enriches the rhizosphere microbiome, promoting microbial populations such as Azotobacter, PSB, and KSB, thereby enhancing nutrient solubilization and uptake by plants (Loura *et al.*, 2022).
3. **Boosts Crop Growth:** Early-stage spraying enhances vegetative growth and crop establishment due to the readily available primary and micronutrients. This contributes to higher biomass production and stronger, healthier plants.
4. **Improves Crop Yield & Quality:** Spraying of *Sapthadhanyankura Kashayam* at the flowering and heading stages helps meet the nutrient demands of late plant growth. It enhances nutrient density, taste, and shelf life of the produce, contributing to higher yields and improved crop quality.

5. **Eco-friendly Sustainable & Reduces Chemical Dependency:** It is a natural bio-enhancer that provides nutrients to standing crops, thereby reducing dependence on synthetic chemical fertilizers. Being eco-friendly and sustainable, it does not have adverse effects on the environment. This approach aligns with the Sustainable Development Goals (SDGs), particularly SDG 2: Zero Hunger, SDG 12: Responsible Consumption and Production, and SDG 15: Life on Land.
6. **Enhances Biotic and Abiotic Stress Resistance:** *Sapthadhanyankura Kashayam* a good concentration of phosphorus, potassium, and micronutrients that actively participate in various physiological reactions. These nutrients strengthen plant immunity and improve resistance against both biotic and abiotic stresses.
7. **Prevents Soil & Water Pollution:** By minimizing the use of chemical fertilizers, it helps prevent the leaching of harmful agrochemicals into groundwater and surface water. This reduces soil pollution, protects aquatic ecosystems, and prevents the toxic buildup of residues in the soil.
8. ***Cost-Effectiveness****: Sapthadhanyankura Kashayam* is a cost-effective solution that is easy to prepare and apply, with no one harmful side effects.

CONCLUSION

Sapthadhanyankura Kashayam stands out as a powerful, indigenous, and eco-friendly bio-enhancer that supports sustainable agriculture. Prepared from the sprouted seeds of seven different grains and desi cow urine, it offers a rich source of essential macro- and micronutrients. This amazing concoction not only boosts plant growth, immunity, and yield but also enhances the quality, flavor, and shelf life of crops. By fostering beneficial microbial activity in the soil, it increases nutrients availability and uptake. It's a cost-effective, easy-to-prepare, and safe option that cuts down on the need for synthetic fertilizers, helping to reduce environmental pollution. Suitable for both field and horticultural crops, it aligns perfectly with global sustainability goals (SDGs 2, 12, and 15). Its effectiveness through foliar spray, fertigation, or soil drenching—especially at key crop stages—makes it a promising solution for low-input, high-efficiency farming systems. In short, *Sapthadhanyankura Kashayam* paves the way for healthier crops, cleaner environments, and a more sustainable future in agriculture.

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