

## India's Traditional Wisdom: Exploring Indigenous Technical Knowledge

Girish K. S.

Ph.D. Scholar, Department of Agronomy, College of Agriculture, V. C. Farm, Mandya, University of Agricultural Sciences, Bangalore, Karnataka

### SUMMARY

Indigenous Technical Knowledge (ITK) in agriculture embodies centuries-old practices, innovations, and wisdom developed by indigenous communities worldwide. Rooted in local environments and cultural traditions, ITK offers sustainable solutions for agricultural challenges. Unlike formal scientific knowledge, ITK is primarily transmitted orally and experientially within indigenous communities, reflecting deep connections with nature and traditional lifestyles. ITK integrates ecological principles, biodiversity conservation, and community resilience into agricultural practices. Additionally, it highlights the role of ITK in promoting food security, climate resilience, and cultural heritage preservation. Despite facing challenges such as globalization and environmental degradation, ITK remains a vital resource for sustainable agriculture and rural development.

### INTRODUCTION

The utilization of Indigenous Technical Knowledge (ITK) in agriculture represents a convergence of ancient wisdom and contemporary agricultural practices. Rooted in centuries-old traditions, ITK encompasses a rich repository of knowledge developed and refined by indigenous communities worldwide. Indigenous Technical Knowledge (ITK) is the actual knowledge of a given population that reflects the experiences based on tradition and includes more recent experiences with modern technologies - (Haverkort, 1995). Across diverse landscapes and climates, indigenous peoples have honed agricultural techniques that prioritize sustainability, resilience, and community well-being. It is the basis for local-level decision making in agriculture, health care, food preparation, education natural resource management and a host of other activities in rural communities - (Warren 1991). The integration of ITK into modern agricultural systems offers profound insights into agroecology, biodiversity conservation, and soil health management. Moreover, ITK fosters cultural identity, strengthens social cohesion, and empowers marginalized communities within the agricultural sector.

### Some important ITKs:

#### Seed/Seedling Treatment:

##### Bijamrut

Ingredients required:

- Cow Dung- 5kg
- Cow urine- 5L
- Cow milk- 1L
- Lime- 250g
- Water- 20L



#### Procedure:

Take a 20-liter plastic water drum with you. Fill the drum with water, then add soil, urine, limestone, and cow dung. Make sure to thoroughly mix it with a wooden stick. For a whole day, keep this solution in the shade. Spread seeds on a cement floor or plastic sheet after a day. Spray the seeds with the prepared solution. Ensure that the fluid completely covers the seeds. Under shade, let the seeds air dry. You can plant the seeds in the early morning or late at night after they have air dried.

#### Benefits:

- Incredibly affordable as compared to inorganic compounds.
- Preparation takes relatively little time.
- Prevent diseases that are spread via seeds.
- Additionally, it increases the seeds' vitality during germination.
- This incredible all-natural remedy shields the roots from fungi and pests while accelerating their growth.

**Panchagavya**

Panchagavya is an organic product having the potential for promoting growth and providing immunity in plant system.

**Ingredients:**

- Cow ghee- 1kg
- Fresh cow dung- 1kg
- Cow urine- 3L
- Cow milk- 2L
- Curd- 2L

**Procedure:**

In the above set up, all of the above mentioned components can be added to a plastic can, concrete tank, or wide-mouthed mud pot. Keep the container open in a shaded area. The mixture should be shaken twice a day, in the morning and the evening. In thirty days, the Panchagavya stock solution will be available.

**Method of Application:** 3 L Panchagavya diluted in 100L water or 3% solution is used to soak both seeds and seedlings

**Uses:**

- Seed and seedling treatment enhances the yield up to 22 %
- As a soil fertility enhancer by applying through irrigation water

**Weed Management:**

- Corn gluten meal (pre-emergent herbicide) suppresses many common grasses and herbaceous weeds.
- Commonly based on vinegar or lemon juice or clove oil ingredients (post-emergent burndown herbicide) Perennials may require multiple applications.
- Post-emergent chemicals are phytotoxic (burn plant tissue); use caution when applying in crops Cost can be decreased by knowing pattern of weed distribution (spot treatment v. overall application Organic herbicide in an orchard)

**Pest and Disease Management****Brahmastra (broad spectrum botanical pesticide)**

- Crush 3 kg neem leaves in 10 L cow urine.
- Crush 2 kg custard apple leaves, 2 kg papaya leaves, 2 kg pomegranate leaves and 2 kg guava leaves in water.
- Mix the two and boil 5 times at same interval till it becomes half.
- Keep for 24 hours, then filter squeeze the extract. This can be stored in bottles for 6 months.
- Dilute 2-2.5 litre of this extract to litre to 100 litre for acre.



**Benefits:** Useful against **sucking pests, pod/fruit borers.**

**NEEMASTRA (broad spectrum botanical pesticide)**

- Crush 5 kg neem leaves in water
- Add 5lit cow urine and 2 kg cow dung
- Ferment for 24 hrs with intermittent stirring
- Filter squeeze the extract and dilute to 100 lit
- Use as foliar spray over one acre
- Useful against **sucking pests** and **mealy bugs**

**Agneyastra**

- Crush 1 kg Ipomea (besaram) leaves, 500 gm hot chilli, 500 gm garlic and 5 kg neem leaves in 10 lit cow urine.
- Boil the suspension 5 times till it becomes half
- Filter squeeze the extract.
- Store in glass or plastic bottles



- 2-3 lit extract diluted to 100 lit is used for one acre.
- Useful against leaf roller, stem/fruit/pod borer

### Control of Mahu (Aphids)

#### Ingredients

- Cow urine: 1L
- Fresh cow dung: 2kg
- Groundnut cake: 1 kg
- Fermented Jaggary: 250 g

**Method of application:** Mix all the ingredients in 5L of water and spray on crops.

### Fungal Disease Control

- A mixture of **ash (2-3 kg) and 1 liter of castor oil** is spread on a seed bed of a size of about 100 m<sup>2</sup>. The application is repeated **2-3 times at intervals of 7-10** days. This provides protection against **soil borne diseases in tobacco**.
- A mixture of **2 kg of turmeric powder and 8 kg wood ash** is used as dust over leaves for treatment against **powdery mildew**.
- **Ginger powder** at 20 gm/lit of water and sprayed **thrice at interval of 15 days** can also effectively check the incidence of **powdery mildew** and other fungal diseases.
- Handful of **slaked lime** applied at the base of tomato plant can combat **damping off disease**.
- Cattle and goat urine have fungicidal properties. Two cups of **cattle urine** with **5ml peppermint oil** and **10 lit of water** can be used to control **fungal diseases on grapes**.

### Growth Promoting And Soil Fertility Enhancer

#### Jivamruta

#### Ingredients:

- Cow dung- 10kg
- Cow urine- 10L
- Jaggary- 2kg
- Flour of gram (Tur, Moong, Cowpea, Urd) – 2kg
- Live soil (Healthy soil)- 1 kg
- Water- 200L

- Uses:** i. Promoting growth and flowering along with acting as a yield enhancer (@5-10% spray with water)  
ii. Soil fertility enhancer (applied along with irrigation water)



### Amrit Jal

#### Ingredients:

- Cow dung - 1 kg
- Cow urine - 1lt
- Jaggary - 50 g
- These are mixed in earthen pot then cover with a cloth and tied.
- Allow 3days to decompose, then, it will act as a bio-fertilizer.

**Dose:** 200ml in 20 lt water.

#### Benefits:

- Plants that receive a 30-minute root treatment prior to planting are more resistant to disease and grow stronger.
- Soaking seeds 24-hour with Amrit jal prior to sowing promotes a higher germination rate and a more robust plant.



### Sanjivak

#### Ingredients

- Cow urine-100L
- Cow dung-100-200kg



- Jaggery-500g
- Water-300L
- Kept for 10 days (Fermentation)

#### Method of Application

- Diluted 20 times before use
- Use along with drip irrigation
- Foliar spray @ 3% to 5% rate
- To enrich soil with microorganisms for quick residue decomposition.

#### Enriched Amrut Ghol

##### Ingredients

- Cow urine- 5L
- Cow dung- 1kg
- Decaying fruits (juice) - 1L
- Mixed and kept for 5 days

##### Method of application

- For 1 acre: 20-30 L spray

##### Uses:

- Soil fertility enhancer (60-100 ml per litre)
- Growth and flowering enhancer (Spray)



#### REFERENCE:

Beejamrit: Learn How to Prepare and Use Beejamrit - Aditya Abhishek

Haverkort, B., 1995. Agricultural Development with a Focus on Local Resources: ILEIA'S view on Indigenous Knowledge. In *The Cultural Dimensions of Development: Indigenous Knowledge Systems* (Eds. D. M. Warren, L. J. Slikkerveer and D. Brokensha). Intermediate Technology Publications Ltd., London, pp. 454-457.

Indigenous Technical Knowledge (ITKs) to promote organic farming- Booklet on Indigenous Technical knowledge (ITKS), 2018 - Dr. Ajay Singh Rajput.

Organic Farming: Organic Inputs and Techniques, TNAU

Warner, K., 1991. *Shifting Cultivators: Local Technical Knowledge and natural Resource management in the Humid Tropics*. FTP. Community Forestry Note 8. FAO. Rome.