

Indigenous Technical Knowledge (ITK)

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SUMMARY








Indigenous Technical Knowledge (ITK) is the actual knowledge of a particular group that incorporates more recent encounters with current technologies along with experiences based on tradition. The information pertaining to indigenous agricultural practices, or IAPs, is not documented. There isn't a structured documentation that explains who they are, what they do, how they do it, how to modify them, how they operate, where they stand, and what uses they have. It takes place in as many groups, cultures, and settings as there are in the world today, utilising a variety of minds, languages, and talents. India's population is therefore under tremendous pressure to gather, maintain, verify, and implement IAPs in order to lessen reliance on foreign inputs, lower cultivation costs, and promote environmentally friendly agriculture.







INTRODUCTION

Local knowledge, or indigenous technical knowledge, is knowledge specific to a particular culture or civilization. It is in opposition to the global knowledge system produced by academic institutions, commercial enterprises, and research centers. It serves as the foundation for local decision-making in a variety of rural communities' activities, including agriculture, healthcare, food preparation, education, and natural resource management. ITK serves as a society's information hub, promoting dialogue and informed decision-making. The introduction of the notion of sustainable agriculture to the Indian agricultural landscape in the late 1980s has stimulated interest in indigenous technical knowledge (ITK) that incorporates the use of natural products to address issues related to agriculture and related fields.

ITK Techniques followed for crops

ITK Techniques	Procedure	Plates
Hot water treatment for better germination of paddy seeds	Paddy seeds are soaked in boiling water by farmers for a full day. There are mounds of soaked seeds on the ground. For four days, tiny straw and neem leaves cover the entire mound. Over the course of these four days, the entire heap is frequently doused with water. Seeds are utilised for nursery sowing once they germinate after four days (Banaskantha).	
Improving germination of finger millet	In Dongar, goat penning is practiced shortly after finger millet is sown on ground that has been ploughed across a slope.	
Lime solution for better germination of groundnut	Before being sown, groundnut seeds are coated with a lime solution. It's thought to supply the heat required for groundnut seeds to germinate early (Junagarh, Gujarat)	

<p>Hot water for better germination of wheat and plant protection</p>	<p>The vessel used to store hot water has a broad, open neck that should remain exposed. The seeds are steeped for a while in the morning before being sown. This guarantees rapid seed germination and shields the crop from pests (Trichy, Tamil Nadu).</p>	
<p>Seed soaking in water/kerosene oil for better germination of cotton</p>	<p>Water is used to soak cotton seeds the night before they are to be sown. The soil that has been recovered from the termite burrow is used to treat the soaking seeds. According to Surendranagar, Gujarat, some farmers in the dry Banaskantha region submerge their seeds in kerosene oil to improve germination.</p>	
<p>Coated seed for better germination of pulse crop</p>	<p>The seeds are treated with locally available leaves to improve the nutrient content, drought tolerance, germination rate, and vigor of pulse seedlings produced in the same field after paddy crops. Pongam (<i>Pongamia pinnata</i>), neem, and Calotropis, karuvel (<i>Acacia nilotica</i>) leaves are crushed and dissolved in water. The leaf extract and pulse seeds are thoroughly combined. To ensure that the extracts coat the seeds evenly, they are left out overnight. The seeds are sun-dried for two hours after the solution is drained the following day. After that, these seeds are dispersed over the field (Pondichery).</p>	
<p>Soaking of chickpea for better germination</p>	<p>Farmers in Western Haryana believe that the wetness is inhibiting the germination of chickpea seeds, therefore they soak them in water for a night before planting. Early germination is facilitated by this method (Western Haryana).</p>	
<p>Enhancing germination of cotton seeds with castor</p>	<p>Cotton seeds typically do not germinate well in heavy, dark, and saline soil. The top layer of soil produces a hard crust after seeding if it rains, which prevents germination. Farmers think the seeds actually sprout in the ground, but they are unable to break through the compacted earth. Farmers plant one castor seed per hill and divide cotton seeds to get around this issue. Cotton germinates roughly at the same time as castor. To make room for the cotton seedlings to sprout, the castor seedlings break through the hard soil crust. The castor seedlings are manually pulled a few days after they germinate. During the initial phases of development, the castor seedlings have little effect on the growth of cotton plants, Gujarat.</p>	
<p>Protection of groundnut from salty air in coastal region</p>	<p>Sorghum and/or pearl millet are being grown by some farmers along the edge of peanut fields. According to the Saurashtra region of Gujarat, the goal appears to be to shield the groundnut crop from the saline air in coastal locations by acting as a windbreak.</p>	
<p>Pagadi planting in finger millet</p>	<p>In rainfed conditions, fingermillet seedlings are transplanted at equal intervals of 22.5 × 22.5 cm to guarantee robust growth and high yield. Additionally, this practice facilitates bidirectional intercultivation, conserves moisture, suppresses weeds, and improves tillering, which increases yields, particularly in drought-prone years (Karnataka).</p>	

<p>Cultivation of castor as a ratoon crop</p>	<p>By dibbling (manually drilling soil for planting) the seed at 240 cm × 240 cm in pits of 30 cm × 30 cm loaded with manure, castor cake, and diammonium phosphate, farmers are experimenting with growing castor as a ratoon crop (lopping off a plant but leaving enough foundation for regrowth). In Jangra, North Gujarat, farmers also cultivate lucerne (<i>Medicago sativa</i>) as an intercrop for seed production.</p>	
<p>Rotational farming with pulse crops for soil fertility and disease management</p>	<p>Rotational farming has long been used in the Western Himalayan cold deserts at comparatively lower elevations to increase productivity. Wheat, barley, and peas make up the typical rotation. This method prevents illnesses from spreading from one crop to another and regulates soil fertility. Following barley, pea cultivation aids in fixing nitrogen in the atmosphere. Barley farming also compacts the soil, which prevents wind erosion in the Himachal Pradesh and West Himalayan cold deserts.</p>	
<p>Intercropping of maize and groundnut</p>	<p>During the rainy season (kharif), farmers plant two rows of maize for every four rows of groundnuts. Because maize matures earlier, it is harvested earlier. Rainwater is collected in the furrows created after corn is harvested. It is sprayed on the groundnut's four adjacent lines. Additionally, farmers believe that this method makes groundnut harvesting easier. Depending on the local circumstances, there are many methods for harvesting and recycling. (Gujarat, Sabakantha)</p>	
<p>Niger and sesamum as border crops to protect sorghum against cattle grazing</p>	<p>Surrounding sorghum, farmers in Shidaganatia hamlet plant sesamum and niger as border crops. According to Dharwad in Karnataka, cattle and other livestock find both niger and sesamum bitter.</p>	
<p>Ratooning of rice</p>	<p>Farmers who are not well off harvest early paddy by decapitating the panicles and leaving the plant intact. They receive the second harvest from the tillers that haven't bloomed yet if there is a good late rain. And only straw is harvested when there isn't any rain. About 1.75–2 tonnes/ha of the first crop and 0.5-0.75 tonnes/ha of the second crop are harvested (Faizabad, Uttar Pradesh).</p>	
<p>Control of algal growth in paddy field by using twigs of pigeonpea</p>	<p>Because of the standing water in the fields, algal problems typically affect the paddy crop. Algae grows because of the stagnant water. The air circulation is stopped by the covering of algae. Pigeonpea (<i>Cajanus cajan</i>) twigs are used by farmers in Sandila to create bundles. These branches are designed to move with the water as it passes through the layer of algae (Uttar Pradesh).</p>	

CONCLUSION

Indigenous Technical Knowledge (ITK) focuses on the practical application of local people's ways of thinking in various agricultural and related operations. Indigenous knowledge is the distinct, customary, local knowledge that has grown up around the special circumstances of women and men who are indigenous to a given region. Using hot water treatment to improve paddy seed germination. Soaking seeds in water or kerosene oil to improve cotton germination coated seed to improve pulse crop germination. Castor is grown as a ratoon crop, using pulse crops in rotation to control illness and improve soil fertility. Intercropping border crops like sesamum, Niger and maize to shield sorghum from livestock grazing rice rationing. One common ITK technique in agriculture is the use of pigeon pea twigs to control algal growth in paddy fields.

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