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# **Module 10: ITKs IN ORGANIC FARMING**



**Session 1: ITK RELATED TO NUTRIENT MANAGEMENT . ITK RELATED TO WEED MANAGEMENT**



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# Introduction:

- The Indigenous Technical Knowledge (ITK) is regarded as the information gained over a period of time passed on from generation to generation by the word of mouth. ITK is the information base for a society, which facilitates communication and decision making. Indigenous information systems are dynamic, and are continually influenced by internal creativity and experimentation as well as by contact with external systems. ITK is stored in people's memories and activities, and is expressed in the form of stories, songs, folklore, proverbs, dances, myths, cultural values, beliefs, rituals, community laws, local language and taxonomy, agricultural practices, equipment, materials, plant species and animal breeds.



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- The term indigenous technical knowledge may be denoted mainly as a tacit type of knowledge that has evolved within the local (grassroots) community and has been passed on from one generation to another, encompasses not only local or indigenous knowledge, but also scientific and other knowledge gained from outsiders.





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- Out of the losses due to various biotic stresses, weeds are known to account for nearly one third. Weeds not only cause huge reductions in yields but also increase cost of cultivation, reduce input efficiency, interfere with agricultural operations, impair quality, act as alternate hosts for several insect pests, diseases, they affect aesthetic look of the ecosystem as well as native biodiversity, affect human and cattle health. To manage the weeds organically, cultural, mechanical and biological methods are adopted. Besides, some age old indigenous technological knowledges (ITKs) are there in practice which has a vital role in sustainability crop-weed management.



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## Examples of ITK related to nutrient management:

- **ITKs used for nutrient management in paddy**
- In jute–rice rotation system of Orissa and West Bengal, farmers hardly use any fertilizer, only as basal dose to rice. After harvesting jute, farmers usually keep plants on their fields for about a week for their partial drying and shedding off all leaves on the ground. At the time of land preparation detached fallen leaves are incorporated into the soil and the field is kept as such for a week before transplanting rice seedlings. Decomposed jute leaves contribute at least 10-20 kg of N per hectare depending upon the yield of jute crop.



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## ITKs used for nutrient management in other crops or general recommendation:

- Farmers of Kinnaur, Himachal Pradesh primarily keep their animals to meet the need of manure. It is collected from cow sheds either inside or outside the house. The dung is put outside the house in a heap in lower areas, whereas in upper areas it is directly put in heaps in the fields and covered with a thin layer of soil to avoid its dispersion by wind.
- On an average 125-250 q/acre of manure is used by the farmers throughout the region. Cowdung is preferred mostly farmyard manure compared to goat and sheep manure because the latter in large quantities leads to burning of crops due to the toxic effects of high levels of N (3%), P (1%) and K (2%).



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- For *in situ* manuring, weeds were allowed to grow on rice fields and then trampled at appropriate time. In large parts of Tamil Nadu, the spreading of wild shrub such as wild indigo (*Wrightia tinctoria*) and leaves of *Pongamia pinnata* and other trees are much used on wet lands, principally on rice fields. The fresh shrubs and leaves were spread on the fields and then trodden by feet.
- Sheep and Goat are penned in fields prior to ploughing, to enrich fertility status of the soil.
- Intercropping *Sesbania* with Tomato during summer is found to enhance the yield of Tomato crop.



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- Crop rotation is followed since Aryan civilization for restoration of soil fertility.
- Intercropping with legumes is beneficial to restore soil fertility.
- FYM was used to add nutrient into the soil and to maintain the organic matter content.
- Ash is applied in seedbeds and in the field of onion before sowing and planting for development and improvement of quality of bulbs.
- Cotton seeds are dipped in cow dung slurry and shade dried before sowing to facilitate better germination.



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