International Journal of Innovative Research and Advanced Studies (IJIRAS)
Volume 3 Issue 7, June 2016

ISSN: 2394-4404

# Practice Of Traditional Knowledge In Agriculture – A Study On Moran Community Of Assam

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***Abstract:*** ***The study was conducted in Tinsukia district of Assam in order to document traditional knowledge in the field of agriculture. In Tinsukia district farmers have been practicing single cropping particularly in respect of rice crop and all farm activities were based on locally available resources. The farmers follow different traditional methods during close interactions with nature and natural resources for their livelihood to mitigate immediate crop environmental situation with the objective of maintaining productivity and sustainability. Present study [2014-2016] was undertaken different pockets of Tinsukia district, domiciled by Moran community. A multistage purposive and random sampling design was followed in the study. From the study different traditional practices are identified and documented under Agronomy, pest control, weed control, seed processing, preservation, etc.***

***Keyword: Tinsukia, Moran, Bihlongoni, Nagarbera, Bor gos, Soil Fitness Test, Traditional Knowledge, ITK***



## I. INTRODUCTION

Traditional knowledge is the knowledge, innovation and practices of indigenous and local communities around the world. It is repository to ancient wisdom, has evolved from huge stock of folklore. Traditional knowledge being culturally oriented is important symbol of cultural distinctiveness of particular social group where it evolves operated and get conserved. Traditional knowledge is vital component of indigenous communities influence their social and physical environment. The knowledge practiced by indigenous and local people is valuable not only to those who depend on their daily lives, but modern industry and agriculture and also for sustainable development. ITK is based on experience, often tested over long period of use, adapted to local culture and environment, dynamic and changing and emphasis on minimizing risk rather than maximizing profit.

The local communities of Tinsukia district of Assam (India) are also applying their respective traditional knowledge especially in the field of agriculture. The local communities of Tinsukia district are Moran, Mottok, Sonowal Kochari, Ahom, Deori, Tea tribes etc. In this paper we are attempting to highlight some ITKs in the field of agriculture adopted by the Moran community .The Morans are belonging to great Mongoloid stock and are considered to be the original inhabitant of Assam. Their main cultivation is paddy but they make an orchard for plantation of orange, battle nut and various types of fruits etc. in their campus. They make kitchen garden for various types of vegetable and medicinal plants. This type of traditional plantation plays an important role in biodiversity conservation and pest management. But biodiversity has been destroyed by encouragement of tea plantation over the past one to two decades. The villagers lured by high economic returns, converted their agro-forest into small tea garden.

## II. METHODOLOGY

The study (2014-2015) was undertaken different pockets of ten villages of Tinsukia district where population are dominated by Moran people. The survey was based on interview and observation on several predetermined variables of agronomical concept focusing soil fertility, cropping

method, weed control, pest control, seed preservation etc. The sampling included the person of different age group of above and below sixty years (both man and woman) belonging to Moran community.

## III. DISCUSSION AND FINDING

The present study serves to highlight different Traditional Knowledge about agronomy, pest management, seed processing, seed preservation of rice cultivation practiced by Moran Community of Tinsukia District, Assam. Table - 1 shows the indigenous traditional knowledge with objective.

| Discipline | Traditional Practices (ITK) | Objectives |
|---|---|---|
| 1.Cropping System | a) Ploughing the land by bullock or buffalo by 5 times. Ploughing the land with standing water and plant like Bihlongoni (Polygonum barbatum).The density of seedbed made closer. After fifth ploughing soil fitness test has done. | ✓ After first ploughing the stubbles and weeds starts to decompose and increase the fertility of soil. Soil become gradually fit for sowing crops. Cow dung and cow urine mix at the time of ploughing which serve as bio-control agent .It consists of micronutrient and has antiseptic property. Cow dung with urine is rich in bacteria which compete with pathogen; beneficial to Rhizobium and Azotobactor. |
| 2.Soil fitness test | a) A handful of mud is taken into and pressed.<br>b) Ejecting spit by chewing battle nut and pan with lime and tobacco. | ✓ The seedbeds reduce deep percolation loss of water and help in weed control.<br>✓ If the mud flows freely through fingers the soil is fit for sowing seeds. |
| 3.Propagation | a) Seeds are put in pitcher shaped sac made up of straw, locally called Tung and kept immerged for three days in water mixed with dung.<br>b) After seed sowing the seeds are covered by hay of the seed. | ✓ If the colour of the mud turns blackish the soil is fit for sowing.<br>✓ The Tung provides seeds sufficient room to swell up inside, after three days shoots appear and ready for sowing. The straws provide aeration and protect seed from pathogen besides providing nutrients to germinating seeds. |
| 4.Weed control | a) Ploughing the land with Polygonum barbatum.<br>a) Using cow dung on standing water. | ✓ It protects from rain and controls moisture and heat for germination and also prevents contamination with another variety. |
| 5.Pest control | b) Spraying fresh cow dung solution<br>c) Peeled rinds of citrus species (Bor Tenga-*Citrus megaloxycarpe*, *P*hophola Tenga etc.) are placed sporadically in the field after transplantation.<br>d) Broadcasting goats excreta on standing crop.<br>e) When infestation severe, Eri Silkworm *Phylosamia ricini* dropping and goats excreta mixed and diluted and sprayed over the plants.<br>f) Cow dung is mixed with kerosene and water and sprayed over the crop plant.<br>g) Dead toad *Bufo* melanostictus pierced by bamboo sticks and placed in the field.<br>h) Crabs are killed and hung from bamboo sticks erected in the crop field in | ✓ Abundance of Polygonum barbatum suppresses the growth of weeds.<br>✓ Cow dung disturbs the crabs in movement and produces unbearable odor to them.<br>✓ Cow dung solution act as repellent to cattle because the cattle do not like to graze on cow dung treated crop. It has antibacterial property to some extent.<br>✓ Attracts insects like stem borer which are killed in contact with citrus rinds.<br>✓ It controls Hispa because pests fly away due to disagreeable odor of goats excreta.<br>✓ It has some repellent and toxic action and act as bio-insecticide.<br>✓ The intolerable odor of the solution act as repellent for pests specially rice |

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|---|---|---|
| | different places.<br>i) Burks of Gendheli puma *Dysoxylum hamiltonii* are sprayed over the rice field.<br>j) Twigs of Nagarbera *Chromolaena odorata,Dol bon Leucas plukenetii* are planted in haphazard way inside the crop field.<br>k) Branches or top of bamboo are erected in the crop field.<br>l) Gum of Bor gos *Ficus bengaaaaalen sis* after extractionis mixed with musterd oil for softening to make balls and hanged to nearby tree of paddy field with a burning light at night.<br>m) Burning of firewood, straw around the rice field at night.<br>n) Seeds are put inside jute bag and hanged from roof of the kitchen which is locally known as dhua chang.<br>o) Storing grains are locally made structure called "Bharal" which is | caseworm.<br>✓ Rice bug are always attracted towards decaying animal. The dead animal act as trapping device to Gandhi-bugs, they are collected in bulk and killed.<br>✓ The barks emit pungent odor and act as repellent.<br>✓ Birds perch on bunches of these trees and act as predator of stem borer and leaf hopper.<br>✓ It serves as resting places for predators.<br>✓ The light attracts the pest and the ball is highly sticky. It acts as adhesive.<br>✓ It acts as attractant. The Gandhi bug and other pests jump down on the fire and |
| 6.Grain preservation | made by bamboo on wooden post or bolder of 3-4 feet height. The inner walls are plastered with mud and cow dung mixture.<br>p) The grains are stored in Duli also. It is round bamboo made structure and plastered with mud and cow dung mixture. The grains are covered with a thin layer of paddy husk.<br>q) Seeds are put in pitcher shaped sac made up of straw locally called Tung. | get destroyed.<br>✓ Smoke from kitchen Chula keeps the pest away and prevents pest infection.<br>✓ Good aeration process of bharal prevents the stored grain from damage Attack of rodents is less due to height of bharal.<br>✓ The pests get difficulty to enter the duli due to plaster and layer paddy husk.<br>✓ The pests get difficulty to enter into tung, so the seed are stored safely. |

*Table 1*

## IV. CONCLUSION

Different traditional farming practices that have evolved through several generations are appropriate to Indian socio agronomic conditions. As traditional methods are stored in farmers memories and if different indigenous technical knowledge are not recognize in time these will be lost forever. So it is necessary to identify, validate and documentation. The

ISSN: 2394-4404

study will be helpful in technology blending programme to generate eco-friendly, location specific, economically viable socially acceptable technology. It will help in production of bio-pesticide and of biodiversity. The ITK used by the farmers need detail research and validation to provide acceptable scientific evidence to support traditional methods which are presumably eco -friendly and subsequent adoption modern agricultural technology and road towards sustainable agriculture.

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