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RESEARCH ARTICLE

INDIGENOUS TECHNICAL KNOWLEDGE AMONG THE TRIBAL FARMERS OF VISAKHAPATNAM.DT

***Dr. D. Uma Maheswara Rao**

Scientist, Agril Extension, Regional Agricultural Research Station, Chintapalli-531111, Visakhapatnam District, Andhra Pradesh

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ABSTRACT

The High Altitude and Tribal area is situated in Eastern Ghats of Andhra Pradesh, which are a series of broken hills and ridges raising up to an altitude of 50 to 1680 m above mean sea level. There are 33 scheduled tribes inhabited in the area and the major groups are being savara, bhagata, jatapu, valmiki, konda dora, koya, kondu etc. This study presents a list of Indigenous Technical Knowledge (ITKs) of the tribal farmers adopted in their farm operations. The study gives a strategy for higher adoption of ITKs and their blended technologies.

Key words:

ITKs, Indigenous Technical Knowledge, Visakhapatnam District, Tribal Farmers, High Altitude and Tribal Zone.

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INTRODUCTION

District Profile

Visakhapatnam District is one of the North Eastern Coastal Districts of AP with two distinct geographic divisions. The strip of land along the coast and the interiors called the plains and hilly areas of the Eastern Ghats called the Agency Division. Administratively the District is divided into 3 revenue divisions and 43 mandals. The geographic area of the district is 11.161 Sq.Kms.

Demographic Characters

The population of the District is 33 lakhs of which males 16.60 lakhs and females 16.40 lakhs. Density of population is 294 per Sq.Km. The district has 17 urban settlements and 3132 villages. The SC's are 7.82% the ST's are 14.27%; and the work force is 40% of the population of which agriculture labor are 23.60%. The literate are 45.5% with male literacy of 56.1% and female literacy of 34.6%.

Agro-climatic conditions

The district has differing climatic conditions in different parts; with mean minimum temperature of 17.5°C by January and

mean Max temperature of 40°C by May. April to June are warmest months. The District receives annual normal rainfall of 1082.5mm of which 58.4% by south west monsoon and 27.5% by north east monsoon and the rest of 14.1% by summer and winter rains.

Land use pattern

The total area of the District is 11.34 lakhs ha of which 42.1% is forests. The net area sown is 29.7% while the cultivable waste is 4.5%.

About ITKs

Indigenous knowledge is, broadly speaking the knowledge used by local people to make their living in a particular environment. It can be defined as "A body of knowledge built up by a group of people through generations of living in close contact with nature: (Johnson, 1992). It is usually a mistake to think of indigenous knowledge as old fashioned, backwards, static or unchanging. Indigenous knowledge provides opportunities for designing development projects that emerge from priority problems identified within a community and which build upon and strengthen community level knowledge systems and organizations. Indigenous technologies in agriculture are low cost, organic and eco friendly in nature. They don't cause any damage to the air, water and soil, safe to human beings and free from causing environmental pollution. Over generations of farming, farmers have been experimenting several indigenous alternatives to solve their problems in the

*Corresponding author: **Dr. D. Uma Maheswara Rao**,
Scientist, Agril Extension, Regional Agricultural Research Station,
Chintapalli-531111, Visakhapatnam District, Andhra Pradesh

farm and home. The in built “trail and error” mechanism of the farmers was the basis of the amassed wealth of indigenous knowledge. Indigenous people are the original inhabitants of a particular geographic location, who have a culture and belief system distinct from the International system of knowledge eg., the tribal, native first or aboriginal people of an area. According to Indian anthropologists, a tribe identifies the people who live in Primitive or backward conditions under a head man or chief. The tribes are also known as adivasees i.e. aboriginals.

MATERIALS AND METHODS

The study was carried out to document indigenous knowledge from the tribal farmers of Eastern ghats of Visakhapatnam district of High Altitude and Tribal Zone of Andhra Pradesh as a research proposal. Regional Agricultural Research Station is located at Chintapalle mandal of Visakhapatnam district, which is headquarters of High Altitude and Tribal Zone of Acharya N.G. Ranga Agricultural University, Andhra Pradesh. The total number of tribal farmers interacted was (50 farmers). The information was collected with the help of interpersonal interaction and focus group discussion.

RESULTS AND DISCUSSION

Indigenous Technical Knowledge of Farmers

Using ash for seed storage

Brinjal and Tomato seeds, collected from the fruits, will be dried on beds of ash and allowed for during; the seeds will be rolled back along with the ash bed and will be stored until the next season. This will prevent the attack of pests on seeds.

Weed Control

On the bunds of the paddy fields weed control is done by following method. A spade will cut a thin layer of earth, along with the weeds and it will be stamped on the same place in reverse direction, so that the weed will go down and it will be covered with the soil. This prevents the propagation of the weeds.

Mechanical pest control

The eggs, larva and adult insects of different sp., on different crops are picked up by hand and pest control will be managed without using any chemicals.

Protecting nursery beds from ants

For protecting the vegetable seed nurseries from ants, finely grinded ash powder will be put as a band and it will act as a repellent for the ants, those coming to eat away the sown seeds.

Storing tobacco seed

The dried up tobacco plant along with the dried up fruits will be cut from the field and it will be tied up side down above the

stove in the kitchen, in such a way that only smoke will reach the plant and not the flame. This smoke will dry the plant and it will be protected from fungal attacks.

Agricultural Calendar

The farmers follow the traditional Calendar for operating different agricultural practices. The whole year will be divided into 27 karthes, each karthe, comprising 12-15 days. The different agricultural operation, from sowing to harvest, in different crops will be practiced as per the scheduled recommendations of this Calendar.

Enriching the soil for raising seed beds

The place will be selected for raising nursery bed. On that place, animals like Cattle will be stalked at that place. The dry paddy husk and other crops wastes like groundnut husk, dry Bajra straw will be layed down on the floor. These materials along with the soil get soaked with urine and dung of the animals. After some days, the animals will be changed to another place. The soil along with the soaked organic matter will be thoroughly mixed, this results in the enrichment of soil in that particular place. Then the farmers raise the nursery beds of various crops in that particular place. This will help in raising healthy seedlings.

Ash in preventing soil born pests

Ash will be used in land preparation of Ragi crop. The ash incorporated in the soil will act as repellent and prevents the soil born pests those attacks the crop.

Observing good time to start the Cultivation

On the new year day of the Telugu Calendar the village purohit will tell the most auspicious day to undertake first ploughing of the season, anticipating the rain fall of the season. The elder member of that family will undertake a plough in his field on that day in the early hours of the day for the sake of “Muhartham”. This is called Donyeru. The real ploughing of the land will be carried out later by the farmers. This will help in utilizing the summer showers and under taking appropriate agricultural operations.

Pegging goats for soil enrichment

Goats are being pegged on the fields where tobacco and chillis grow, over night for 3,4 days depending on the size of the land. The dung and the urine passed by the goats will be incorporated in the soil by ploughing the land thoroughly. This will enrich the soil.

Rain forecast

The villages nearby the seacoast have been forecasting the rain based on their experience by hearing to the sounds of the sea. They say that based on the changes in moisture in the wind, they can predict whether they receive rain from monsoon or local rain.

Pest control in Paddy

Paddy at grain filling stage when infested with swarming caterpillars and leaf folders cooked rice mixed with sheep blood is broad castled. These rice halls attract birds to the paddy field and they pick up these caterpillars thus controlling pest.

Sand spray for Leaf Folder attack

To prevent leaf folder attack in paddy and ragi, sand is sprayed on the leaves that are wet with fog, so that sand sticks to the leaves. This sand prevents the larva from attacking the crop and feeding on the leaves. The sand also abbreviates the skin of the larvae and causes desiccation and death of the larvae.

ITK's in AH & Veterinary Science

ITK s in Animal Husbandry and Veterinary Science are mainly related to the treatment of different ailments and other health related aspects. They are presented as per the disease conditions.

In appetite Condition

- a. Medicine : Aizwan –50gms +salt –little.
Preparation : Mix the two, grind to powder.
Administration : Add the powder in Sufficient water –
Daily once –give for two days.
- b. Aizwan, Dry Ginger, Asafetida, Jaggery and Salt –about 25 g each.
 - Mix, Grind to paste.
 - Apply the paste on tongue.

The preparations used in the above medicines are believed to increase the appetite by stimulating the secretion of digestive juices. Many farmers of the area do practice these ITKs.

Stomach ache / Impaction

- a. Medicine: Take a banana fruit and make pieces of it. These pieces are to be dipped in gingelly oil for some time and administer them to Calves suffering from stomach ache, Once daily for two days

This is very effective in Case of Calves. Banana in oil helps in digestion and relieves the impaction, according to the farmers.

- b. Take Holarrhena antidysentrica (Palakodisha / Palakonda) Roots grind the roots and take the juice extract. Take Some pieces of earthen pot, heat them and dip them in the juice extract and remove. Then take about 200ml –give twice daily for two days.

Bloat

- a. Dry ginger – about 50 gm +pepper – little about 10 gm. Grind them to powder Add water and give to the animals as a drench.

- b. Aizwan –about 50 gm Salt - 50 gm grind and add to half a liter of water then drench at once.

The above preparations are thought to relieve the gas / froth produced in the stomach during the bloat condition. Many farmers use these preparations for their animals.

Worm Infestation

- a. Holarrhena antidysentivca -(Palakonda) Take little powder of Palakonda stem and add in 200ml of water then administer as one dose.
- b. Aristolochia bracteolata (Gadida gadapa) Take leaves of the above, about 50 gm – grind to paste Apply on navel - once for one day only. Best for calves of cows and buffaloes

Enteritis / Diarrhoea

- a. Take Leaves of Phyllanthus reticulatus (Puredu) –about 100 gms. Grind to fine paste. Add about 150 gms Ragi flour to it. Make a bolus and then administer to the animal. Give one time a day for two days.
- b. 150 gm –leaves of Phyllanthus reticulatus + 150 gm – Banana Grind the two and add to 150 gm Ragi flour. Make the above mix into three equal parts and administer to the animal three times a day. Puredu leaves act as astringent and thus arrest the diarrhoea. Ragi flour provide energy.

Wounds

- a. Neem leaves –adequate + about 10 Black pepper granules Grind the two and apply the paste on wound.
- b. Achyranthes aspera (Uttareni) Leaves –adequate Take extract of the leaves and apply on the wound region. one time daily for 3- 4 days.

(This is mostly used in the case of yoke gall or B.Q lesions.).

- c. Coccinia indica (Kaki Donda) Leaves – about 4+ Achyranthes aspera leaves –4

Take extract of the two –Apply two drops of the extract in between the two horns and the rest to the base of horns. The remnant Leaves are to be on the wound.

(This is mostly used for the wounds caused by plough).

Foot lesions of FMD like diseases

- a. Annona Squamosa (Seethaphal) leaves – 50 gm. Jatropa gossypifolia leaves – 50gms. Fine grind to paste. Apply on the lesions. Daily once – for 4-5 days.
- b. Annona Squamosa leaves + Strychnos nox vomica leaves +Jatropa leaves Take 25 gm leaves of each of the above and add little Tobacco. Grind to fine paste and apply to the foot lesions.

Sprains

a. Cassia auriculata (Tangedu) leaves –adequate –grind the leaves and add water and then heat to fumes. Then take warm leaves apply on the sprain area, put bandage. Daily once – for three days.

b. Leaves of Tamarindus indica –adequate. Grind to fine paste. Apply on the sprain area and put bandage. Daily once – for three days.

Anaestrums

a. 3 Kgs. of Brinjal fruits:

Grind and administer to the animal daily .Give for 3 days continuously. Then the animal will come to heat after two weeks. This is believed to stimulate the follicular growth and ovarian release.

ITK s in Health & Nutrition

Kayam recipe for infant mothers

This is a popular and special recipe given to mothers from 3rd day to 9th day after delivery. The ingredients of this recipe include:

Nutmeg (Karakkaya)	- 2No
Induva	- 2No
Turmeric	- 1No
Papilla	- 25gm
Aizwan	- 25gm
Cumin (Zeelakarra)	- 10gm
Dry ginger	- 25gm
Black pepper	- 25gm

All ingredients except Aizwain & Cumin are boiled & in this water the Aizwain & cumin are tied in a cloth & put in it & boiled. Then the ingredients are made into a paste. To this little till oil or gee and half a kg of Jaggery powder. The whole paste is fried till it doesn't stick to hands. Then it is fed to the mothers along with rice. This recipe is given for body strengthening, proper regression of uterus and for other health reasons.

Syrup for recently delivered mothers

The neem seed kernel is taken and grind to paste. Then the paste is boiled in tamarind juice for some time and the syrup thus prepared is given to recently delivered mothers. This is given especially for deworming purpose and it is also believed to help in uterine regression.

Hand pounded Rice

In Hand-pound Rice vitamin A, B-1, B-2 and Niacin are more compared to milled Rice. Iron 0.32%, vitamin B-12-0.21%, vitamin B-2-0.016%.Niacin-0.39% when compared to milled Rice. The vitamins necessary for our daily intake are met by taking 100 gms Hand-pound Rice every day.

Conclusion

Blending of ITK with scientific knowledge system is vital for sustainable intensification of agriculture. Scientific procedures can identify the active ingredients and could come up with appropriate recommendations in terms of effective application rates. It could be said that ITK provides solutions for low external input but intensive agricultural production. A systematic documentation and blending of available ITK facilitate the process in which researchers and farmers learn one another. ITKs and blended technologies can be an alternative to modern technologies involving high external inputs.

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