

RESEARCH ARTICLE

INDIGENOUS AGRICULTURAL PRACTICES FOR SUSTAINABLE AGRICULTURAL DEVELOPMENT

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ABSTRACT

Indigenous knowledge is the systematic body of knowledge acquired by the local people through the accumulation of experience informal experiments and intimate understanding of the environment. It is strongly believed that indigenous knowledge practices pave way for sustainable development. Indigenous knowledge is offering sustainable approaches to agriculture and rural development. (Chambers, 1983 and Waren, 1989). Indian tribal regions are noted for their rich indigenous wisdom. Considering the significance of indigenous knowledge system an attempt was made to identify the various indigenous agricultural practices in the tribal regions of Pachaimalai Hills in Tamil Nadu. Indigenous practices like the use of neem, neem oil etc. for the control of pest and diseases, use of ash for controlling the crop pests, use of indigenous storage structures like 'Kudhir' and mud pots, use of indigenously made tools to control the rats use of dried neem leaves in sorghum for controlling storage pests, were identified in the study area. Constraints like no recognition, no reward, and neglect by elite people that resist the effective utilization of indigenous practices were also observed and reported.

Key words: Knowledge acquired, Effective Utilization of Indigenous

INTRODUCTION

Today's major effort of agricultural scientists and technocrats are focused on the term called 'sustainable agricultural development'. Sustainable development involves producing goods for the needs of the present generation, while at the same time conserving resources in order to ensure continuous production in the future (FAO, 1993). It is strongly recommended that indigenous knowledge system is offering sustainable approaches to agricultural and rural development. (Fujisaka, Groenfeldt, 1991). It is obvious that indigenous knowledge systems are invaluable for sustainable development. The term indigenous knowledge denotes a type of knowledge that has evolved within the community and has been passed on from one generation to another. In recent years indigenous knowledge is gaining significance, and a number of scholars have sown considerable interest in the indigenous technical knowledge of rural people. It is also seen that in many cases, these indigenous knowledge systems have sophisticated technical component which enable people to deal with survival of the natural and cultural environments (Atte, 1989).

MATERIALS AND METHDOS

The Pachaimalai hills of Trichy district was selected for this study. It occupies the fourth position in tribal population in Tamil Nadu. Tribal people constitute 90.00 percent of the total population of this tract and they mainly on agriculture and allied activities and they are noted for rich traditional wisdom. As the main objective of this study was centered around the tribal people, it was planned to select all the three blocks of Pachaimalai hills which have tribal representation.

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Accordingly the three blocks viz., for the Vannadu, Tehnpuraanadu and Kombai were selected for the study. Twenty villages were selected based on their maximum area under paddy, tapioca, and sorghum crop. From the twenty selected villages, five respondents from each were selected randomly for the purpose of data collection. A list of farmers growing paddy, tapioca and sorghum in selected blocks was obtained from the respective block level officials, A sample size of 100 respondents was considered adequate for the study. The total number of respondents to be selected from each block was arrived at on the basis of proportionate random sampling procedure. The required data were collected by using a well structured interview schedule after it was pre-tested in a non-sample area. Percentage analysis was also used to work out the practice wise adoption to indigenous agricultural practices and wherever necessary.

RESULTS AND DISCUSSION

The tribal farmers in pachaimalai hills practiced agriculture as their major occupation. The wisdom of tribes is expressed in all their agricultural activities right from sowing to the post harvest technology. The important indigenous agricultural practices identified in major crops viz., paddy, tapioca, and sorghum in the study area and general indigenous agricultural practices are discussed here under.

Application of green leaf manure: The farmers apply neem leaves as green leaf manure to their paddy fields. Since they have experienced that application of neem leaves would reduce the pest incidence. Also neem leaf manures are easily available in required quantities during the entire cultivation period.

Storage of paddy grains in Kudhirs: Paddy grains are stored in the tall mud pots or bins which are popularly known as kudhirs. These mud pots are made up of clay soils mixed with plant fiber.

The height of kudhir ranges from 180 cm – 200 cm on the top there is an opening and at the bottom there is a slide which enables the farmers to draw the grains from kudhir whenever needed. By using kudhir, the farmers can store grains for a longer period without pest attack and also they can save space.

Kudhirs coated with cow dung slurry: The kudhirs used for storage purpose are coated with cow dung slurry. It is mainly done to prevent the storage pest attack.

Tapioca: Top dressing of fertilizer in tapioca: Top dressing of fertilizers is done at 5th month of planting on the anticipation of rainfall, since the rainy season coincides only at the time of 5th month, after planting tapioca and hence application of fertilizers during the time would be effectively utilized.

Sorghum: Mixing sorghum seeds with dried neem leaves: During this storage of the sorghum, seeds are mixed with neem leaves to avoid the incidence of storage pests.

Beating drums to scare away the birds: In the crop fields of ragi, thinai, varagu, panivaragu, sorghum and cumbu during the maturity phase, drums are beaten by small children to scare away the birds.

Displaying crow's carcass to scare away the crows: The carcass of the crow is field to a long pole and it is placed in the centre of the field. The purpose is to drive away the birds. (Balasubramaniam, 1992). This is done to scare away the birds.

During of ash to control pests: Ash is dusted over the crops like ragi, thinai, samai, varagu, panivaragu and paddy. The ash is dusted on the infected leaves of the particular crop to prevent the pest incidence.

Extent of Adoption of Indigenous Agricultural Practice by the Tribal Farmers

S.No.	Indigenous Agricultural Practices	Percent
1.	Application of green leaf manner	97.00
2.	Storage of paddy grains in 'kudhir'	100.00
3.	Kudhir coated with cow dung slurry	78.00
4.	Top dressing of fertilizers in tapioca	100.00
5.	Mixing sorghum with dried neem leaves	70.00
6.	Beating drums to scare away the birds	70.00
7.	Displaying crows' carcass to scare away the birds	61.00
8.	During of ash to control pests	89.00

It could be noted from the table that almost all the practices except one were found to be adopted by more than 70.00 per cent of the respondents.

Constraints in the Adoption of Indigenous Agricultural Practices as Perceived by the Tribal Farmers

The findings on the presents constrains experienced by the tribal respondents are presented in this section.

Constraints in the Adoption of Indigenous agricultural Practices

S.No.	Constraints	Total no.of respondents	Per cent
1.	No reward for indigenous agricultural practices by government officials	70	70.00
2.	Youth's preference for urban life	58	58.00
3.	Lack of documentation	47	47.00
4.	Poor income from agriculture	40.	40.00
5.	Negative attitude of elite and educated people	28	28.00

It could be seen from the Table that the first and fore most constraint experienced by majority of the respondents (70.00 per cent) was 'no reward for indigenous agricultural practices by government officials' followed by youth's preference for urban life (58.00 per cent), lack of documentation (47.00 per cent), poor in come from agriculture (40.00 per cent) and negative attitude of elite and educated people (28.00 per cent) as their second, third, fourth and fifth constraints respectively in adopting the recommended indigenous agricultural practices in their cultivation.

Conclusion

Indigenous agricultural practices which offer solutions for sustainable agricultural development are known to more farmers and they are prevalent in the tribal zones of Tamil Nadu. Efforts may be made to overcome the bottlenecks in the adoption of indigenous agricultural practices. Encouraging the adoption and further research and development on I.K Practices may pave way for sustainable agricultural development and sustainable environment.

REFERENCES

- Atte, O.D 1989. "Indigenous Local Knowledge as a key to local – level Development; Possibilities, Constraints and Planning Issues in the Context of Africa". Paper Presented at the Seminar on Reviving Local-Self Reliance: Challenges for Rural/Regional Development in Eastern and Southern Africa. February 21-24, 1989.
- Balasubramanian, P. 1992. "Indigenous knowledge use in Dry lands. An Exploratory study. "Unpublished M.Sc (Ag.) Thesis, Coimbatore, Tamil Nadu Agricultural University.
- Chambers, R.1983. Rural Development : Putting the Last first. London: Longman Inc.
- FAO.1993. Guidelines for land uses planning. Rome : FAO.
- Fujisaka, S. 1991. "What does 'Build Research on Farm Practice ' mean? ". Rice Crop establishment (Beusani) in Eastern India as an Illustration Agriculture and Human Values, VIII (1-2); 93-98.
- Groenfeldt, D.1991. "Building on Tradition: Indigenous Irrigation knowledge and sustainable development in Asia" Agriculture and Human Value, VIII (1-2): 114-120.
- Warren, D.M. 1989. "Linking Scientific and Indigenous Agricultural Systems". In L.J. Compton (Ed.), The Transformation of International Agricultural Research and Development. Boulder: Lynne Rienner Publishers.