



KNOWLEDGE LEVEL OF INDIGENOUS CULTIVATION PRACTICES AMONG TRIBAL FARMERS IN KOLLI HILLS

K. Poovarasan* & P. Ramesh**

* PG Scholar, Department of Agricultural Extension, Faculty of Agriculture, Annamalai University, Annamalai Nagar, Tamilnadu

** Assistant Professor, Department of Agricultural Extension, Faculty of Agriculture, Annamalai University, Annamalai Nagar, Tamilnadu

Cite This Article: K. Poovarasan & P. Ramesh, "Knowledge Level of Indigenous Cultivation Practices Among Tribal Farmers in Kolli Hills", International Journal of Applied and Advanced Scientific Research, Volume 3, Issue 1, Page Number 268-272, 2018.

Abstract:

A study mainly focuses on knowledge level of indigenous cultivation practices among tribal farmers in Kolli hills. The present study was conducted in Namakkal district of Tamil Nadu state. So Namakkal district has been administratively divided into seven taluks and fifteen blocks. Out of these taluks and blocks, higher populations of tribals were noticed in Kolli hills. For the selection of the respondents based on the proportionate random sampling technique was followed to select a sample size of one hundred and twenty respondents. The dates were collected from each respondent through personal interview methods with help of interview schedule. The results revealed that, more than half of the respondents (56.67 per cent) had medium level of knowledge followed by high (26.67 per cent) and low (16.66 per cent) levels of knowledge on indigenous cultivation practices.

Introduction:

Man has passed through the Stone Age, the steel age and entered the space age with the help of technologies. Man started developing technologies to fulfil his needs and desires, based on his practical experience, logic and judgement. Agriculture is as old as human civilization. The tribals discovered and domesticated many of the food crops and animals. High yields in modern agricultural systems were discovered by investing costly inputs like complex fertilizers, pesticides, etc. the development of modern agricultural production as been achieved by creating large scale specialised farm production unit, increased mechanisation and use of chemical inputs. Thus, gain in crop yield directly depends on intensive management and on the uninterrupted availability of energy and resources. Generally, increase in yield has been accompanied by a decline in genetic variability, natural soil fertility, biological pest regulation, enhanced soil erosion, salinisation and environmental pollution. An indigenous cultivation practices is gradually gaining more and more attention, after having often been rejected as a hindrance to development. The importance now being given to such indigenous cultivation practices is for the facts that these emanate from the cultural context of the people concerned, and they evolve in close contact with specific environmental conditions and are based on traditional societies' intimate knowledge of their environment. These reasons imply that an indigenous cultivation practices is almost an essential condition for sustainable development. There are many tribal studies that have been conducted by different anthropologists and researchers. They have diagnosed about the tribals and their problems by using different phenomenon in their studies. Limited studies are available on the socio-economic changes of tribals over a period of time. The tribal development measures adopted during the second half of this century are found to be insufficient in improving the economic conditions of the tribals. Even after the introduction of several welfare measures, the tribals are still facing several economic and social constraints. Keeping in view the above point of reference, the present research paper entitled, "Knowledge Level of Indigenous Cultivation Practices among Tribal Farmers in Kolli Hills".

Methodology:

The present study was conducted in Namakkal district of Tamil Nadu state. So Namakkal district has been administratively divided into seven taluks and fifteen blocks. Out of these taluks and blocks, higher populations of tribals were noticed in Kolli hills. Hence, Kolli hills have been selected for the purpose of study. Kolli hills had sixteen revenue tribal villages and five villages were purposively selected based upon its maximum tribal population.

The list of farmers' household from each selected village was obtained from the gram panchayat office and also from the department of horticulture and plantation crops. For the selection of the respondents based on the proportionate random sampling technique was followed to select a sample size of one hundred and twenty respondents. For the purpose of data collection only the heads of households were introduced. The knowledge level was measured with help of teacher made knowledge test. Totally 48 items were selected for testing the knowledge level of the respondents. Each item of knowledge test was dichotomized into correct and incorrect responses with the score of two and one. Maximum score one could obtain in the test was 96 and the minimum score was 48. Maximum score would indicate high level of knowledge of the respondents. The respondents were categorized into low, medium and high by using cumulative frequency. Further, the percentage analysis was worked out for practice wise knowledge level of the respondents.

Findings and Discussions:

Overall Knowledge Level of Respondents on Indigenous Cultivation Practices:

The findings on overall knowledge level of respondents on indigenous cultivation practices were presented in Table 1.

Table 1: Distribution of respondents according to their overall knowledge level on indigenous cultivation practices

(n=120)

S.No	Category	Number	Percent
1	Low	20	16.66
2	Medium	68	56.67
3	High	32	26.67
Total		120	100.00

It is observed from the data in Table-1, about more than half of the respondents (56.67 per cent) had medium level of knowledge followed by high (26.67 per cent) and low (16.66 per cent) levels of knowledge on indigenous cultivation practices. Knowledge being a pillar to every understanding, majority of the respondent might have possessed medium to high knowledge level, which are passed from their ancestors. The finding is in line with the findings of Dharmendra Kumar Sariya (2015).

Practice Wise Knowledge Level of Respondents on Indigenous Cultivation Practices in Paddy:

In order to have an indepth idea about practice wise knowledge level of respondents on indigenous cultivation practices in paddy was worked out and the results are presented in Table 2.

Table 2: Practice wise knowledge level on indigenous cultivation practices in paddy

(n=120)

S.No	Indigenous practices	Number	Percent
1	Drying of paddy seeds day and night for 4-5 days	120	100.00
2	Soaking of paddy seeds in water for sprouting	118	98.33
3	Seed rate @20-25kg per acre	88	73.33
4	Raising nursery in elevated place in the field	94	78.33
5	Keeping nursery area free from other plants /weeds	94	78.33
6	Direct sown rice crop	98	81.67
7	Application of farm yard manure	120	100.00
8	Application of green leaf manure	106	88.33
9	Planting 6-7 seedlings per hill	100	83.33
10	Draining water next day of sowing	120	100.00
11	Maintaining water level for next few days after transplanting	120	100.00
12	Sun drying of harvested paddy bundled for one or two days in the field itself	120	100.00
13	Threshing by hitting the paddy bundles with wooden blocks	94	78.33
14	Cattle threshing for removal of grains	112	93.33
15	Winnowing the grains by using a winnower called Muram	100	83.33
16	Parboiling of paddy for improving the edible quality of the rice	110	91.67
17	Dehusking of paddy by using Ural	106	88.33
18	Separation of husk by the use of Muram	104	86.67
19	Grinding of rice in a heavy weight wooden grinder Ural/Erakai	100	83.33
20	Seed storage in earthen pot with a small wide mouth	102	85.00
21	Storage of paddy grains in Kudhir	108	90.00
22	Spread of Notchi leaves over the storage container to control rice moths	110	91.67
23	Coating of cow dung ash in paddy grains for protection of pests and diseases	105	87.5
24	Dusting of ash on the semi-lodging crop of paddy for the purpose of standing of crop	98	81.67
25	Pepper powder is used for the control of storage pest in paddy	106	88.33
26	Turmeric powder is mixed with paddy and then stored	96	80.00
27	Twenty-thirty red chillies are kept in one quintal of paddy seeds bag to avoid the storage pests	112	93.33
28	Paddy seeds are stored in a floor coated with cow dung slurry to avoid insect attack	108	90.00
29	Vessel filled with water is kept inside the store room to attract the insects and to reduce damage	96	80.00

It could be observed from Table-2, most of the respondent possessed high level of knowledge on almost all the indigenous cultivation practices in paddy. Cent per cent of the respondents had knowledge on

drying of paddy seeds day and sowing, maintaining water level for next few days after transplanting, and sun drying of harvested paddy bundled for one or two days in the field itself. Traditionally, the farmers are well known about the important of above practices particularly paddy seed preservation by drying, important of application of farm yard manure to the field, water management practices in main field and nursery. The calculated percentage of the remaining practices in the descending order were soaking of paddy seeds in water for sprouting (98.33 per cent) followed by cattle threshing for removal of grains (93.33 per cent), twenty-thirty red chillies are kept in one quintal of paddy seeds bag to avoid the storage pests (93.33 per cent), parboiling of paddy for improving the edible quality of the rice (91.67 per cent) and spread of notchi leaves over the storage container to control rice moths (91.67 per cent). Water soaking is cheap and best indigenous practices to improve the germination percentage in paddy. In kolli hills farmers have high livestock possession they were used the cattle for threshing of grains. The parboiling of paddy improves the quality and increase the stuffness of rice. Red chillies and notchi leaves are easily available pest control ingredients in this hill area. Knowledge of the above practices transmitted through traditionally among the farmers of this area. This finding is in line with the findings of Badgujjar (2012).

The next group of respondents the percentage ranges from 80.00 per cent to 90.00 per cent. And, they were storage of paddy grains in kudhir (90.00 per cent), paddy seeds are stored in a floor coated with cow dung slurry to avoid insect attack (90.00 per cent), application of green leaf manure (88.33 per cent), de-husking of paddy by using ural (88.33 per cent), pepper powder is used for the control of storage pest in paddy (88.33 per cent), coating of cow dung ash in paddy grains for protection of pests and diseases (87.50 per cent), separation of husk by the use of muram (86.67 per cent), seed storage in earthen pot with a small wide mouth (85.00 per cent), planting 6-7 seedlings per hill (83.33 per cent), winnowing the grains by using a winnower called muram (83.33 per cent), grounding of rice in a heavy weight wooden grinder Ural/Erakai (83.33 per cent), direct sown rice crop (81.67 per cent) dusting of ash on the semi-lodging crop of paddy for the purpose of standing crop (81.67 per cent), turmeric powder is mixed with paddy and then stored (80.00 per cent) and vessel filled with water is kept inside the store room to attract the insects and to reduce damage (80.00 per cent). Farmers have more concentration on storage pest controlled methods and also give more important on application of organic based manures like farm yard manure, green leaf manures, green manures etc., which are easily availability in hill area. Traditional equipments like muram, ural, kudhir, etc., are highly used by tribal people. Because the equipments are simply made themselves with minimum efforts. This finding is in line with the findings of Chigasil Sangma (2017). The remaining four technologies comes under the percentage range from 75.00 per cent to 79.00 per cent. They were by raising nursery in elevated place in the field (78.33 per cent), keeping nursery area free from other plants / weeds (78.33 per cent), threshing by hitting the paddy bundles with wooden blocks (78.33 per cent) and seed rate @ 20-25 kg per acre (73.33 per cent).

Practice Wise Knowledge Level of Respondents on Indigenous Cultivation Practices in Tapioca:

In order to have an indepth idea about practice wise knowledge level of the respondents on indigenous cultivation practices in tapioca was worked out and the results are presented in Table-3.

Table 3: Practice wise knowledge level on indigenous cultivation practices in tapioca

(n=120)

S.No	Indigenous practices	Number	Percent
1	Selection of setts with shorter internodes for planting	84	70.00
2	The farmers cultivate banana as a inter crop between the rows	112	93.33
3	Application of pig manure for increased tuber size	78	65.00
4	Tuber are cut and sundried for a week and stored with 16 per cent of moisture content	102	85.00
5	Spraying of neem oil mixed with soap solution to control the pest and diseases	110	91.67
6	Using latex of mango, calotropis and jatropa mixed with hot water (100°C) is used to control aphids and white flies in cassava	98	81.67

It could be observed from the Table-3, that majority of the respondents had high level of knowledge on indigenous cultivation practices on tapioca. The calculated percentage of the practices are followed by descending order and they were the farmers cultivate banana as a inter crop between the rows (93.33 per cent). Inter crop give additional income to the farmers and also reduces the weed population in the field. So the farmers have more knowledge about cultivation of banana as intercrop. Spraying of neem oil mixed with soap solution to control the pest and disease (91.67 percent). This may be due to the more traditional knowledge of the farmer about neem oil and its utilization as the pest repellent and also used for some medicinal purpose. Tubers are cut and sundried for a week and stored with 16 per cent of moisture content (85.00 per cent). Sun drying is simple post harvest process to make use of the tuber for a long period. Tapioca is one of the important food substitutes for the people of kolli hills. So most of the farmers aware about sun drying of tubers for long storage. Using latex of mango, calotropis and jatropa mixed with hot water (100°C) is used to control aphids and white flies in cassava (81.67 per cent). Calotropis and jatropa are easily available in this location itself and

should be considered as eco-friendly pest control methods with minimum efforts. Selection of setts with shorter internodes for planting (70.00 per cent) and application of pig manure for increased tuber size (65.00 per cent). This finding is in line with the findings of Maravi (2009).

Practice Wise Knowledge Level of Respondents on Indigenous Cultivation Practices in Ragi:

In order to have an indepth idea about practice wise knowledge level of respondents on indigenous cultivation practices in ragi was worked out and the results are presented in Table-4.

Table 4: Practice wise knowledge level on indigenous cultivation practices in ragi

(n=120)

S.No	Indigenous Practices	Number	Percent
1	Ragi is grown in uplands with low water holding capacity	96	80.00
2	Sometimes mixed cropping with mustard, beans and banana	104	86.67
3	Ragi seeds are treated with cow urine at 1:10 ratio with water enhances germination	112	93.33
4	When a sample of dried finger millet grain is chewed, metallic sound indicates its dryness	98	81.67
5	Use neem leaves and thumbai leaves for storage of pest control	104	86.67
6	Spraying of goat milk on the crop to control wilt in ragi	104	86.67

It could be observed that Table 4. Most of the respondents had high level of knowledge on indigenous cultivation practices on ragi. The calculated percentage of the practices are followed by descending order were ragi seeds are treated with cow urine at 1:10 ratio with water enhances germination (93.33 percent). It may be due to most of the farmers aware the important of cow urine and its use in treatment with ragi seeds. It may increase the germination and also reduce the pest and disease incidents. Sometimes mixed cropping with mustard, beans and banana (86.67 percent). Ragi cultivated as mixed crop with some other crops may increase the income of cultivation and also increase land use efficiency. So farmers aware about mixed crop cultivation of ragi. Use neem leaves and thumbai leaves for storage of pest control (86.67 percent). Availability of thumbai, neem leaves and other insect repellent plant is more in hill areas. The knowledge of these leaves passed from their forefathers and ancestors. Spraying of goat milk on the crop to control wilt in ragi (86.67 percent), when a sample of dried finger millet grain is chewed, metallic sound indicates its dryness (81.67 percent) and ragi is grown in uplands with low water holding capacity (80.00 percent). This finding is in line with the findings of Dharmendra Kumar Sariya (2015).

Practice Wise Knowledge Level of Respondents on Indigenous Cultivation Practices in Banana:

In order to have an indepth idea about practice wise knowledge level of respondents on indigenous cultivation practices in banana was worked out and the results are presented in Table 5.

Table 5: Practice wise knowledge level on indigenous cultivation practices in banana

(n=120)

S.No	Indigenous Practices	Number	Percent
1	Red banana is native land race possessing a very good aromatic flavor is cultivated in kolli hills	94	78.33
2	Hill banana is grown as ratoon crop	100	83.33
3	Hill banana grown as an intercrop in tapioca or ragi	102	85.00
4	Suckers are trimmed before planting in order to prevent root born diseases and nematodes	92	76.67
5	Side suckers are uprooted (de-suckering) at monthly interval with long iron rods	92	76.67
6	For quick ripening of banana fruits, bunches are stacked in bigger earthen pots	100	83.33
7	The fruits to be ripened are kept in dark room and covered by neem leaves	109	90.83

It could be observed that Table-5. Most of the respondents had more knowledge level on indigenous cultivation practices on banana. The calculated percentage of the practices are followed by descending order were the fruits to be ripened are kept in dark room and covered by neem leaves (90.83 per cent), followed by hill banana is grown as an inter crop in tapioca or ragi (85.00 per cent), hill banana is grown as ratoon crop (83.33 per cent), for quick ripening of banana fruits, bunches are stacked in bigger earthen pots (83.33 per cent), red banana is native land race possessing a very good aromatic flavor is cultivated in kolli hills (78.33 per cent), suckers are trimmed before planting in order to prevent root born diseases and nematodes (76.67 per cent) and side suckers are uprooted (de-suckering) at monthly interval with long iron rods (76.67 per cent). Generally farmers of this area having more knowledge about the banana and its various indigenous cultivation practices on fruit ripening, ratoon crop method, inter crop, pest and disease control method and storage of fruits. Because they followed the banana cultivation in generation to generation with their ideology. Red banana and hill banana

(Malai vazhai) are delicious and medicinal purposeful fruits than other banana varieties. Kolli hills are a suitable climate place for the above varieties. This finding is in line with the findings of Kumar *et al.* (2010).

Conclusion:

There is an urgent need to get aware of indigenous cultivation practices to all scientists to coming forward to involve in participatory approach, through supplying/conducting, publications, meetings, seminars, workshops, conferences, symposium etc. Indigenous cultivation practices have strong roots in rural culture. The study reveals that there were more than 130 indigenous cultivation practices items available related to paddy, maize, groundnut, wheat, pulses, horticultural crops and weather forecasting in agriculture, which may serve as alternatives to modern technologies.

References:

1. Dharmendra Kumar Sariya. 2015. A Study on Depiction of Indigenous Technological Knowledge (ITK) in Agricultural Aspects Prevailing in Tarana Block of Ujjain District of Madhya Pradesh, Unpublished M.Sc., (Ag.), Thesis, Rajmata Vijayaraje Scindia Krishi Vishwa Vidyalaya, College of Agriculture, Gwalior.
2. Chigasil Sangma, M. 2017. A Study on Knowledge and Adoption of Indigenous Paddy Cultivation and Dairy Management Practices Among Tribal Farm Women of West Garo Hills District of Meghalaya, Unpublished M.Sc., (Ag.), Thesis, Annamalai University, Annamalai Nagar.
3. Badgujjar, M.K. 2012. A Study on Knowledge and Adoption of Organic Farming Practices Among the Farmers in Sehore District Madhya Pradesh, Unpublished M.Sc., (Ag.), Thesis, Rajmata Vijayaraje Scindia Krishi Vishwa Vidyalaya, Gwalior.
4. Kumar Sanjeev, Birendra Kumar, B.K., Mandal. and Gopal Sankhala. 2010. "Indigenous Knowledge System of Farmers About Their Dairy Husbandry Practices of Banka District of Bihar," *Journal of Agricultural Sciences*, 1(4):370-374
5. Maravi, Man Singh. 2009. Depiction of Indigenous Technological Knowledge (I.T.K) in Agricultural Aspects Prevailing in Gwalior Region of Madhya Pradesh, Unpublished M.Sc., (Ag.), Thesis, Jawaharlal Nehru Krishi Vishwa Vidyalaya, Jabalpur.