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Adoption of indigenous agricultural practices among the tribal farmers of servarayan hills of Salem district in Tamil Nadu, India

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Abstract

Indigenous agricultural practices are the accumulated skill and knowledge of a locality or a community that has been passed on from one generation to another generation. The paper deals with the indigenous agricultural practices adopted by the tribal farmers of servarayan hills in Salem District of Tamil Nadu. The respondents are selected by proportionate random sampling method. The Practices has been sent to the principle scientist and research experts to identify the indigenous agricultural practices for collected, the data were analyzed by using percentage analysis. The percentage of farmers adopting in different indigenous agricultural practices range of the majority of the tribal respondent's current duration.

Keywords: Agricultural, respondents, tribal,

Introduction

Indigenous knowledge is a set of perceptions, information and behaviour that guide local community members to use the land and natural resources. Indigenous knowledge is created and sustained by local community members as a means to meet their needs for food, shelter, health, spiritual and savings. Indigenous knowledge is usually adapted and specific to local ecological conditions and to community members' social and cultural beliefs. This knowledge can be simple or complex. It is not static but evolves in response to changing ecological, economic and socio-political circumstances based on the creativity and innovation of community members and as a result of the influence of other cultures and outside technologies (Anonymous, 2006) [1]. Quality can be defined as the status of a drug that is determined by identity, purity, content and other chemical, physical, or biological properties, or by the manufacturing processes. Quality control is a term that refers to processes involved in sustaining the quality and validity of a manufactured product (Tamizhazhagan *et al.*, 2017) [2]. Asia has abundant species of medicinal and aromatic plants and traditional medicines have practiced in Asia since ancient times. India has made use of medicinal plants to cure ailments of thousands of years (Tamizhazhagan *et al.*, 2017a) [3].

Through the long path from primitive agriculture, tribal farmers in particular area have developed a number of farming techniques through their own age old experiments by trial and error in an attempt to overcome numerous problems faced during the farming operations. This knowledge is based on many generations of insight gained through close interaction within the natural and physical micro-environments. Tribal farmer's knowledge has been the mainstay of the indigenous agricultural practices (Bihari 2012) [4]. An agriculture practice managed by farmers in tribal area embodies practices that are logic and different from those contained in agriculture science imparted in institutions of formal education. It is in between spaces, the interstices of sectors, the invisible ecological flows between sectors that tribal farmers work and their knowledge in agriculture is uniquely found and it is through these linkages that ecological stability and productivity under resource scare conditions are maintained.

Agriculture is the main occupation of the people of Tamil Nadu. More than 80 per cent of the total population of Tamil Nadu state depends on agriculture for their livelihood. The state offer scope for cultivation of a wide variety of agricultural, horticultural crops and animal husbandry practices because of highly diversified topography, altitude and climate condition. It is one of the most potential zones for eco-friendly agriculture (Darandale and Soni, 2012) [5]. In the field of agriculture, Tamil Nadu is one of the states in India where indigenous knowledge is extensively used for the cultivation of crops. Servarayan hill is one of the places, where immense use of indigenous knowledge is widely seen in agricultural and allied activities. Keeping this in view, an exploratory study of 'A Study on adoption of indigenous agricultural

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agricultural practices among the tribal farmers of Servarayan hills of Salem District of in Tamil Nadu, has been made to find out the extent of adoption of indigenous agricultural practices.

Materials and Methods

Sample collection

The salem District of Tamil Nadu in servarayan hills' was purposively selected for the study considering the availability of tribals farmers engaged in indigenous agricultural practices. Among fifty revenue villages in servarayan hills ten villages selected based on the maximum numbers of tribal farmers engaged in indigenous agricultural practices and tradition familiarity with the Tamil dialect culture of people. Rationality of the fifty five collected indigenous practices was determined based on judge's opinion, accordingly forty indigenous agricultural practices were found to be rational and fifteen indigenous practices were found to be irrational.

Forty indigenous agricultural practices under various agricultural crops were collected from the tribal farmers belonging to the servarayan hills by determining the rationality and selected. Data were collected from 120 tribal farmers identified based on proportionate random sampling method. The responses on adoption of forty rational indigenous agricultural practices were sought under two categories viz., adopted and not adopted. Simple percentage was used for interpretation of results. A well-structured interview schedule was used for collection of data from the respondents. The frequency of the farmers adopting each of practices was calculated and expressed in percentage (Deb Sourabh *et al*, 2013)^[6].

Results and Discussion

In order to have an in-depth idea about the adoption of practices, practice wise adoption of indigenous agricultural practices was analysed and the results are presented in Table.

Table 1: Distribution of respondents according to their overall adoption of recommended indigenous agricultural practices.

S. No.	Indigenous Agricultural Practices	Number	Percent
Paddy (Oryza sativa)			
1.	Selection of indigenous variety	86	71.66
2.	Storing of paddy seeds in pot made up of gourd	72	60.00
3.	Broadcasting of paddy seeds directly in nursery	92	76.66
4.	Weeding by using tools called thorn and thorn made bamboo stick was used	85	70.83
5.	Raising nursery in elevated place in the field	75	62.50
6.	Summer ploughing	93	77.5
7.	Using wooden tray used for carrying weeds	86	71.66
8.	Planting two or three seedlings per hill	94	78.33
9.	Transplanting of seedlings in flooded field	97	80.83
10.	In nursery area no other crops grown	94	78.33
11.	Leveling the surface of field by using legs	96	80.00
12.	Incorporation of crop residue in the soil to improve soil fertility	74	61.66
13.	Sieving paddy seeds before sowing to control weeds	84	70.00
14.	Incorporating weeds before flowering stage in the soil for fertility	86	71.66
15.	Keeping bamboo traps at the entrance of the rat hole	72	60.00
16.	Keeping puppet dolls to scare away birds	78	65.00
17.	Keeping sound producing device made up of bamboo	65	54.16
18.	Construction of irrigation channel in the middle of field	93	77.50
19.	Soil conservation by indigenous soil bunds	96	80.00
20.	Constructing water outlet made up of bamboo or tree trunk in field	98	81.66
21.	Threshing by hitting the paddy bundles with wooden blocks	92	76.66
22.	Sun drying of the harvested and threshed paddy for one or two days	95	79.16
23.	Winnowed by taking the grains in a winnower called muram	88	73.33
24.	Dehusking of paddy using tools called pestle	75	62.50
26.	Separation of husk by the use of muram	95	79.16
27.	Storing harvested grains in store room called "kudhir"	78	65.00
Chilli (Capsicu M annum)			
28.	Raised bed method are used for seedling raise	86	71.66
29.	Covering with bamboo branches in nursery to protect from birds	91	75.83
30.	Dusting of ash to control diseases and pests	95	79.16
31.	Matured fruits are harvested and dried inside the house for seeds purpose	98	81.66
Maize (Zea Maize)			
32.	Selection of indigenous variety	98	81.66
33.	Ridge planting method is used for sowing of seeds	93	77.50
34.	Keeping bamboo trap called dagang bukid for management of rats	88	73.33
35.	Tying polythene sheets and oil papers on bamboo stick to scare away the rodents and birds	74	61.66
36.	Keeping puppets doll to scare away the birds	68	56.66
37.	Harvested corn are dried inside the house ceiling.	89	74.16
Integrated farming			
Paddy cum fish cultivation			
38.	A small pit is dug in each terrace in a series of terraces where paddy is grown	98	81.66
39.	A fish variety (common carp) locally known as is reared with paddy	115	95.83
40.	A fence made of bamboo to check fish runs from field	78	65.00

It could be noticed from The table that majority of the respondent adopted the selection of indigenous variety 71.66 per cent, storing of paddy in pot made up of ground 60.00 per cent, broadcasting of paddy seeds directly in nursery 76.66 per cent, weeding by using tools called thorn and thorn made bamboo stick was used 70.00 per cent, raising nursery in elevated place in the field 62.50 per cent, summer ploughing 77.50 per cent, using wooden tray used for carrying weeds 71.66 per cent, planting two or three seedling per hill 78.33 per cent transplanting of seedlings in flooded filed 80.83 per cent, in nursery area no other crops grown 78.33 per cent, leveling the surface of filed by using legs 80.00 per cent, incorporation of crop residue in the soil to improve soil fertility 61.66 cent, sieving paddy seeds before sowing to control weeds 70.00 per cent, incorporating weeded weeds before flowering stage in the soil for fertility 71.66 per cent, keeping bamboo traps at the entrance of the rat hole 60.00 per cent, keeping puppet dolls to scare away birds 65.00 per cent, keeping sound producing device made up of bamboo 54.16 per cent, construction of irrigation channel in the middle of filed 77.50 per cent, soil conservation by indigenous soil bunds 80.00 per cent constructing water outlet made up of tree trunk in filed 81.66 per cent, threshing by hitting the paddy bundles with wooden blocks 76.66 per cent, sun drying of the harvested and threshed paddy for one or two days 79.16 per cent, winnowed by taking the grains in a winnower called muram 73.33 per cent, dehusking of paddy using tools called pestle 62.50 per cent, separation of husk by the use of muram 79.16 per cent and storing harvested grains in store room called “kudhir” 65.00 per cent report about these practices also made else were by (Mohammad and Singh,2007) ^[7]. Accordingly in chili observed from the table that out of four indigenous practices, raised bed method are used for seedling raise 71.66 per cent, covering with bamboo branches in nursery to protect from birds 75.83 per cent, dusting to control diseases and pests 79.16 per cent and mature fruits are harvested and dried inside the house for seeds purpose 81.66 per cent. This may be due to the most of the respondents comes under old age categories and their involvement in eco-friendly agriculture practices and knowledge from their ancestors. Accordingly the table revels from the table of the crop in maize, that out of six practices selected of indigenous variety 81.66 per cent, ridge planting method is used for sowing of seeds 77.50 per cent, keeping bamboo trap called for management of rats 73.33 per cent, tying polythene sheets and oil paper on bamboo stick to scare aware the rodents and birds 61.66 per cent, keeping puppets doll to scare away the birds 56.66 per cent and harvested corn are dried inside the house ceiling called 74.16 per cent (Murali Krishnan,2015)^[9]. This may be due to the most of the respondents comes under old age categories and their involvement in eco-friendly agriculture practices agriculture practices and knowledge from their ancestors (Majumdar Dipali *et al.*, 2013)^[8]. Accordingly from the table observed that out of these indigenous practices in paddy cum fish cultivation, the tribal farmers adopted that a small pit is dug in each terrace in a series of terraces where paddy is grown 81.66 per cent, a fish variety (common carp *Labeo rohita*) (Jayakumar *et al.*, 2018)^[10] locally known as “Jelapi” is reared with paddy 95.83 per cent and fence made of bamboo to check fish runs from field 65.00 per cent. This may be due to the most of respondents comes under old age categories and their involvement in paddy cum fish cultivation practices which passed from their ancestors (Noorjehan *et al.*,2004) ^[11]; (Oladele,2012) ^[12]; (Shashidhara, and Manjurath,2008) ^[13]; (Venkatesan *et*

al.,2016) ^[14]. It may be generated researchers good novel drug design and drug development using such a medicinal plant it's grow medicine ayurvedic revolution various cultivated, natural medicinal plant and ornamental, sea weed sea grass plants to be initiated conservation drug synthesis may be use this review approaches in future studies and formulate idea (Tamizhazhagan and Pugazhendy 2017) ^[15].

Conc

From the present study it can be concluded that tribal's farmers have greater responsibility in agriculture, which drive them interact more with the surroundings. As observed adoption of indigenous agricultural practices results with eco-friendly environment and is necessary to make promotional efforts for the preservation and spread of these practices. The findings of the study reveal that majority of the tribal farmers had adopted the indigenous agricultural practices to a large extent. This shows the conviction of tribal farmers in the adoption of indigenous agricultural practices. Therefore extension workers should identify and include them in the technology transmission process for effectiveness.

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