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An investigation into the depiction of Indigenous Technical Knowledge (I.T.K.) related to agricultural practices in the Kesla block of Narmadapuram district, Madhya Pradesh

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Abstract

Narmadapuram, formerly known as Hoshangabad, is a district in the state of Madhya Pradesh, India. It is located on the south bank of the Narmada River and serves as the administrative centre for the Narmadapuram district. This study was done purposively in Kesla block of Narmadapuram district of M.P. Objective of study is to find out the extent of knowledge of Indigenous Technological Knowledge (ITK) in agriculture as perceived by the farmers. the highest proportion of farmers 37.78% pertained overall medium knowledge followed by low knowledge 32.22% and high knowledge about indigenous technologies in agriculture as crop production 30.00% respectively. The highest portion of the farmers 36.67% have overall adoption followed by low adoption 34.44% and high adoption of indigenous technologies in agriculture as crop production 30.00% respectively.

Keywords: ITK (Indigenous technical knowledge), knowledge and adoption, sustainable agriculture, traditional knowledge, proportional method

1. Introduction

India has been a country of diversity since ancient times. That is why India is called a country of diversity. People in India live in different types of agricultural climates, different geographical conditions, different cultures, and different types of societies whose ways of living are different. For thousands of years, farmers have been carrying out experiments and tests at the field level based on their experience and error in agriculture and its allied sectors. Farmers used the natural resources provided by nature in a friendly manner without harming nature and increased agricultural production by developing many techniques based on experience. Thus this ancient knowledge has stood the test of time and has the quality of being environmentally friendly. Therefore, such knowledge that gives maximum production and maintains natural balance without harming nature is called "indigenous technical knowledge" or local knowledge. This knowledge is based on techniques familiar and experienced by farmers over centuries. There is knowledge transferred from generation to generation through oral/written communication, and it conveys a sense of community ownership. It is a systematic concept of gathering of experiences of people of a particular place, their informal application and accurate and in-depth social knowledge of the conditions of any particular place, designed to help the farming community. Apart from this, ITK is used in India for proper management of agricultural health and natural resources. Since ancient times, farmers in India have known the art of growing food grains in the most difficult environments through ITK. ITK is a tradition that is intertwined with agricultural systems in India, making it one of the most valuable assets of India.

2. Materials and Methods

The study was conducted purposively in Kesla block of Narmadpuram district of M.P. due to maximum farmers are engaged in crop cultivation in the district. Narmadapuram district of M.P comprise of Seven blocks namely- Narmadapuram, Kesla, SeoniMalwa, Babai, Sohagpur, Pipariya, Bankhedi block, out of which one block, namely Kesla was selected purposively because fertile land, high agricultural growth and maximum population of tribal which still preserves the indigenous technical knowledge of ancient agriculture. There are total 951 villages and 431 village panchayats in Narmadapuram district. Kesla block comprises of 114 villages and 52 village panchayats, out of which 10 villages was selected randomly for the study. For the study purpose, a list of farmers was prepared with the help of RAEO'S and Panchayat, 9 farmers from each selected village was selected using random sampling. Thus, total 90 respondents was selected for the investigation.

Objective of study is to measure the extent of knowledge and adoption of Indigenous Technological Knowledge (ITK) in agriculture as perceived by the farmers. Relevant information was collected through an interview schedule. This schedule was prepared keeping in mind the objective of the research. All the questions and statements asked in this schedule were prepared in simple, direct and local language, so that the farmers could easily understand the questions and do not face any doubt or problem in answering them.The schedule included both open-ended and closed-ended questions using the method for assessing specific traits and ITK crop production knowledge. A pre-test of the interview schedule was conducted in the study area under real-world field conditions prior to finalization. Finding the incorrect questions was made easier by the pre-test. Depending on the pre-test results, the schedule was modified and adjusted.

3. Results and Discussion

Extent of knowledge about Indigenous Technologies in agriculture

A person's or a culture's body of understood information is referred to as knowledge. It goes on to say that knowledge is the portion of an individual's information that is consistent with known facts. So for this study, the selected farmers' level of knowledge on indigenous technologies in crop production was assessed and presented in table 1.

Table 1: Distribution of farmers according to their extent of knowledge in respect of Indigenous Technologies in crop production. (n=90)

S. No.	ITK practices	Extent of knowledge			Standard division(σ)
		Low	Medium	High	
1.	Soil, water conservation	28 (31.11)	36 (40.00)	26 (28.88)	0.789
2.	Method of soil Improvement	31 (34.44)	32 (35.55)	27 (30.00)	0.394
3.	Management of Soil fertility	25 (27.77)	37 (41.11)	28 (31.11)	0.931
4.	Soil management and land preparation	30 (33.33)	29 (32.22)	31 (34.44)	0.149
5.	Drainage method	29 (32.22)	38 (42.22)	23 (25.56)	1.125
6.	Local variety of seed	31 (34.44)	35 (38.89)	24 (26.67)	0.830
7.	Seed sowing implements	26 (28.89)	35 (38.89)	29 (32.22)	0.683
8.	Control of soil erosion	26 (28.89)	32 (35.56)	32 (35.56)	0.516
9.	Metrological observation	32 (35.56)	31 (34.44)	27 (30.00)	0.394
10.	Detection of underground water	28 (31.11)	37 (41.11)	25 (27.78)	0.931
11.	Application of bio fertilizer	30 (33.33)	34 (37.78)	26 (28.89)	0.596
12.	Mixed cropping pattern	27 (30.00)	34 (37.78)	29 (32.22)	0.537
13.	Implements of weed control and their methods	26 (28.89)	34 (37.78)	30 (33.33)	0.596
14.	Irrigation system and method	31 (34.44)	33 (36.67)	26 (28.89)	0.537
15.	Soil moisture preservation	34 (37.78)	38 (42.22)	18 (20.00)	1.578
16.	Insect control method	26 (28.89)	35 (38.89)	29 (32.22)	0.683
17.	Disease control method	33 (36.67)	35 (38.89)	22 (24.44)	1.043
18.	Ripping stage of crops	29 (32.23)	30 (33.33)	31 (34.44)	0.149
19.	Transportation of crops	28 (31.11)	32 (35.56)	30 (33.33)	0.298
20.	Threshing implements and their methods	21 (23.33)	37 (41.11)	32 (35.56)	1.220
21.	Crop winnowing method	31 (34.44)	35 (38.89)	24 (26.67)	0.830
22.	Seed/grain storage technology	33 (36.67)	33 (36.67)	24 (26.66)	0.775
23.	Other agricultural practices	26 (28.89)	37 (41.11)	27 (30.00)	0.907
	Overall average	29 (32.22)	34 (37.78)	27 (30.00)	0.537

The distribution of farmers according to their mean score of ITK expertise in crop production is shown in the above table.1.

1. Knowledge about soil and water conservation

The data given in the table above revealed that higher number of farmers 40.00 per cent pertained medium level of knowledge followed by low knowledge 31.11.00 per cent and high knowledge 28.88 per cent of ITK for “soil and water conservation”.

2. Knowledge about method of soil development

The data given in the table above revealed that higher number of farmers 35.55 per cent pertained medium level of knowledge followed by low knowledge 34.44 per cent and high knowledge 30.00 per cent of ITK for “method of soil development”.

3. Knowledge about soil fertility management

The data given in the table above revealed that higher number of farmers 41.11 per cent pertained medium level of knowledge followed by high knowledge 31.11 per cent and low knowledge 27.77 per cent of ITK for “soil fertility management”.

4. Knowledge about soil management and land preparation

The data given in the table above revealed that higher number of farmers 33.34 per cent pertained medium level of knowledge followed by high knowledge 33.33 per cent and low knowledge 33.33 per cent of ITK for “Soil management and land preparation”.

5. Knowledge about drainage method

The data given in the table above revealed that higher number of farmers 42.22 per cent pertained medium level of knowledge followed by low knowledge 32.22 per cent and high knowledge 25.56 per cent of ITK for “drainage method”.

6. Knowledge about local variety of seed

The data given in the table above revealed that higher

number of farmers 38.89 per cent pertained medium level of knowledge followed by low knowledge 34.44 per cent and high knowledge 26.67 per cent of ITK for "local variety of seed".

7. Knowledge about seed sowing implements
The data given in the table above revealed that higher number of farmers 38.89 per cent pertained medium level of knowledge followed by high knowledge 32.22 per cent and low knowledge 28.89 per cent of ITK for "seed sowing implements".

8. Knowledge about control of soil erosion
The data given in the table above revealed that higher number of farmers 35.56 per cent pertained medium level of knowledge followed by high knowledge 35.56 per cent and low knowledge 28.89 per cent of ITK for "control of soil erosion".

9. Knowledge about metrological observation
The data given in the table above revealed that higher number of farmers 35.56 per cent pertained low level of knowledge followed by medium knowledge 34.44 per cent and high knowledge 30.00 per cent of ITK for "metrological observation".

10. Knowledge about detection of underground water
The data given in the table above revealed that higher number of farmers 41.11 per cent pertained medium level of knowledge followed by low knowledge 31.11 per cent and high knowledge 27.78 per cent of ITK for "detection of underground water".

11. Knowledge about application of bio fertilizer
The data given in the table above revealed that higher number of farmers 37.78 per cent pertained medium level of knowledge followed by low knowledge 33.33 per cent and high knowledge 28.89 per cent of ITK for "application of bio fertilizer".

12. Knowledge about Mixed cropping pattern
The data given in the table above revealed that higher number of farmers 37.78 per cent pertained medium level of knowledge followed by high knowledge 32.22 per cent and low knowledge 30.00 per cent of ITK for "mixed cropping pattern".

13. Knowledge about implements of weed control and their methods
The data given in the table above revealed that higher number of farmers 37.78 per cent pertained medium level of knowledge followed by high knowledge 33.33 per cent and low knowledge 28.89 per cent of ITK for "implements of weed control and their methods".

14. Knowledge about Irrigation system and method
The data given in the table above revealed that higher number of farmers 36.67 per cent pertained medium level of knowledge followed by low knowledge 34.44 per cent and high knowledge 28.89 per cent of ITK for "Irrigation system and method".

15. Knowledge about soil moisture preservation
The data given in the table above revealed that higher number of farmers 42.22 per cent pertained medium level of knowledge followed by low knowledge 37.78 per cent and high knowledge 20.00 per cent of ITK for "soil moisture preservation".

16. Knowledge about insect control method
The data given in the table above revealed that higher number of farmers 38.89 per cent pertained medium level of knowledge followed by high knowledge 32.22 per cent and low knowledge 28.89 per cent of ITK for "insect control method".

17. Knowledge about disease control method
The data given in the table above revealed that higher number of farmers 38.89 per cent pertained medium level of knowledge followed by low knowledge 36.67 per cent and high knowledge 24.44 per cent of ITK for "disease control method".

18. Knowledge about ripping stage of crops
The data given in the table above revealed that higher number of farmers 34.44 per cent pertained high level of knowledge followed by medium knowledge 33.33 per cent and low knowledge 32.23 per cent of ITK for "ripping stage of crops".

19. Knowledge about transportation of crops
The data given in the table above revealed that higher number of farmers 35.56 per cent pertained medium level of knowledge followed by high knowledge 33.33 per cent and low knowledge 31.11 per cent of ITK for "transportation of crops".

20. Knowledge about threshing implements and their methods
The data given in the table above revealed that higher number of farmers 41.11 per cent pertained medium level of knowledge followed by high knowledge 35.56 per cent and low knowledge 23.33 per cent of ITK for "threshing implements and their methods".

21. Knowledge about crop winnowing method
The data given in the table above revealed that higher number of farmers 38.89 per cent pertained medium level of knowledge followed by low knowledge 34.44 per cent and high knowledge 26.67 per cent of ITK for "crop winnowing method".

22. Knowledge about seed/grain storage technology:
The data given in the table above revealed that higher number of farmers 36.67 per cent pertained medium level of knowledge followed by low knowledge 36.67 per cent and high knowledge 26.66 per cent of ITK for "seed/grain storage technology".

23. Knowledge about other agricultural practices
The data given in the table above revealed that higher number of farmers 41.11 per cent pertained medium level of knowledge followed by high knowledge 30.00 per cent and low knowledge 28.89 per cent of ITK for "other agricultural practices".

4. Conclusion

The study found that the age, education, cast, economic status and social participation of the respondents had positive significant relationship with their extent of knowledge of I.T.K in crop cultivation. Therefore, it is suggested that the relevant authorities set up more practical actions to increase these farmers' characteristics.

5. References

1. Adekunle OA. Small-scale farmer's indigenous approach to soil fertility in some villages of Oyo state, Nigeria. Agrosearch. 1995;1(2):117-22.
2. Ahmad R, Saxena Hem, Katti G. Performance of neem formulation for management of gram pod borer infesting chickpea. In: Proceedings of National Symposium organized by I.S.P.R.D., Kanpur, U.P.; 1998. p. 26-8.
3. Altieri MA. Indigenous knowledge re-valued in Andean agriculture. ILEIA Newsletter. 1996;12(1):7.
4. Altieri MA. Agroecology: The scientific basis of alternative agriculture. Boulder/Landon: Westview/ITI; 1987. p. 277.
5. Anonymous. Integrating indigenous knowledge and research. Extension Digest. 1994;2(1):9.
6. Atte DD. Indigenous local knowledge as to local level development possibilities, constraints and planning issues in context of Africa. Paper presented at: Seminar on Fostering Local Self-Reliance: Challenges for Rural/Regional Development in Eastern and Southern Africa; 1989 Feb 21-24; Arusha.
7. Bajaj M, Srinivas MD. Indigenous knowledge and resources for sustainability in agriculture. Report Technical Knowledge in Agriculture, Division of Agriculture Extension, ICAR, New Delhi; 2001.
8. Badgujja MK. A study on knowledge and adoption of organic farming practices among the farmers in Sehore district of (M.P) [MSc thesis]. Gwalior: Rajamata Vijyaraje Scindia Krishi Vishwa Vidyalaya; 2012.
9. Koradia D. Survey of grassroot innovations part XVI. Honey Bee. 1996;7(3):16.
10. Majhi SK. Indigenous technical knowledge for control of insect pest and livestock disorders. Indian J Tradit Knowl. 2008.
11. Mane PM. Study of traditional agricultural practices. Ahmadabad: Aga Khan Rural Support Programme (India); 1989. p. 1-5.
12. Sankaran PN. Indigenous knowledge: resource for sustainable development. Employment News, Weekly, Publication Division, Ministry of I and B, New Delhi. 2005;30(2):1-48.