



## Study on Utilization Pattern of Indigenous Technical Knowledge (ITK) among Farm Families in Patna District of Bihar

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**ABSTRACT:** Indigenous technical knowledge has been traditionally owned wisdom from time to time, but as the years passed owing to the evolution of modern technologies, it is likely to be forgotten by the society. Due to ecological imbalance and exploitative use of land, water and other natural resources, their ecology is disturbed which ultimately brings down agricultural productivity. There is a poor alliance between the practice of traditional and modern knowledge. An appropriate association between the traditional and modern knowledge and technology systems has immense potential to benefit the society. Regarding this, the present study was conducted in Patna District of Bihar to find out the “Utilization pattern of Indigenous Technical Knowledge (ITK) among farm families”. A total of 120 respondents were selected randomly for the present study. The data were collected through a pre-structured interview schedule and appropriate statistical analysis was done to find out the utilization pattern. Eleven ITK practices was selected to quantify utilization pattern by farm families. It was observed that use of “Bijamrut” was most prominent ITK practised among farm families. Regarding utilization level, it has been found that majority of the respondents (70.83%) were having medium level of utilization pattern followed by low (15.00%) and high (14.17%) level. These results will be of much help to policy makers to document these ITK practices for sustainable food production. There are some challenges related to the present study i.e., the study was confined to the Sampatchak block of Patna district of Bihar only, which is a very small proportion of the state in respect of geographical area hence, may be considered a micro study. Also, findings of the present study will be helpful in providing scientific explanation to the experientially generated knowledge and age-old farming practices, of which utilization rate must be high.

**Keywords:** Association, Documentation, ITK, Level of utilization, Pre structured interview schedule, Quantify.

### INTRODUCTION

The paradigm shift in Indian agriculture from traditional to sustainable agriculture has developed a concept focused on crop and livestock production while having minimal environmental impact, helping to sustain farm economy and helping farmers improve their strategies and quality of life (Panampitiya, 2018). This has aroused the interest of farmers to acquire traditional technological knowledge that uses local knowledge, people inherited from their ancestors, to solve agricultural problems and activities related to natural processes. The emergence of a sustainable agricultural concept in the late 80s in the Indian state of agriculture has aroused interest in Indigenous Technical Knowledge (ITK) which is part of the use of natural products to solve agricultural problems and integrated activities (Hiwasaki *et al.*, 2014). ITK is local information that differs from a particular culture or

community that is passed on from one generation to the next (Naharki *et al.*, 2020). It deals directly with the real application of the thinking of the local people in various agricultural and mixed-use activities. ITKs are based on experience tested over the centuries, and are given the best flexibility in the local environment in the context of agricultural sustainability (Ponnusamy *et al.*, 2017).

At the beginning of the 21st century, the world is facing a number of major global challenges. On the development side one of these challenges is the establishment of sustainability. In the context of agricultural development, a new agenda has been set to achieve the goals of producing and disseminating economically viable, socially acceptable and environmentally sound technologies that are geographically sound. , even local agricultural schools cannot teach such knowledge because of its size and diversity (Pereira, 1993).

Developing countries like India have a repository of traditional knowledge that may seem to be very important for all of us in redesigning our efforts to develop the country to our satisfaction. As an agricultural country, India, our development efforts are focused on transforming traditional agricultural technology into a modern technology but the potential of traditional farming has been increasingly recognized over the past few years. Developing countries have an important but underutilized source of traditional agricultural knowledge (Warren, 1993). Such knowledge or experience has been passed down from generation to generation, commonly known as "Traditional Agricultural Practices." The term "Indigenous" is often used interchangeably with "Traditional" or "Local" (Chithraichelvan, 1994). The word "Traditional" means a cultural concept derived from the word "Tradere" meaning "transfer" (Firake *et al.*, 2013). In this we can say that culture is the transmission of social norms and values that have its roots in ancient times. Old traditions are often replaced by new ones because of certain external and internal factors. In this sense, culture is not static, it has a flexible nature. Indigenous agricultural knowledge is produced by local people through their knowledge and assessment to meet their needs and sustainability. This knowledge is closely linked with their beliefs, practices, and customs in order to maintain their identity (Chandola *et al.*, 2011). Indigenous agricultural knowledge has a few aspects such as having a low risk profile; over-reliance on genetic and physical diversity; take advantage of the use of local resources; natural health; it is easily accessible and easily understood (Khan, 2021).

Different socioeconomic factors may also contribute to the knowledge of rural farm families about ITK. It also studied the association. In addition it needs more staff, enters into the local farming system and is able to meet the more diverse community needs, based on community traditions; evidenced by evidence from reliable sources and had excellent cooking qualities. Farmers can be proud and proud to be recognized as custodians of their knowledge, to be participants in development programs and to be equipped with their own resources, facilities and skills.

**Aim and Advantages of the study.** The study has been aimed to find out the utilization pattern of ITK among farm families which will then be helpful in increasing sustainability of agriculture through proper documentation and blending of traditional knowledge with modern knowledge. Apart from this, the findings of the present study will be helpful in providing scientific explanation to the experientially generated knowledge and age-old farming practices, of which adoption rate must be high.

## MATERIAL AND METHODS

The present study was conducted in Patna district of the Bihar state. They prominently and actively participate in various farming activities and contribute in their household economy. There are 23 blocks functioning in the District. Sampatchak block was selected by

purposive sampling for the research due to more number of ITK users as per pilot survey. There are 47 villages in Sampatchak Block. Out of these, 10 villages were selected purposively based on maximum number of ITK users for the present study. From the 10 villages, 120 respondents were selected randomly. A pre structured interview schedule was used for data collection. Descriptive research design was used for this study. The statistical tools such as frequency, percentage, mean and standard deviation were used to interpret the data and for drawing logical conclusion.

## RESULTS AND DISCUSSION

Indigenous Technical Knowledge (ITK) has immense potential for innovation, especially at the grassroots level. India is a country populated by a number of indigenous communities, most of which have their own set of unique traditional knowledge and technology base. Many of these knowledge and technologies are at par with the modern knowledge and technology system and have been provided the indigenous communities with comfort and self-sufficiency. These traditional knowledge and technologies have played a significant role in the overall socio-economic development of the communities.

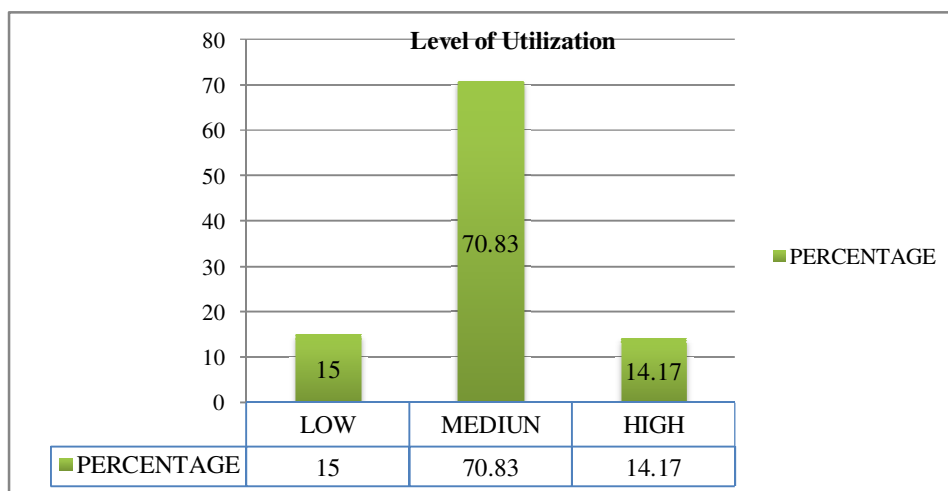
Results portrayed in Table 1 show that use of "Bijamrut" which is used for seed treatment before sowing was most prominent ITK practised by farmers among eleven ITK practises were identified. Salt added to mustard oil (*Brassica campestris*) applied all over the body for control of ectoparasites was second most followed ITK. ITK which took third position was use of "Panchgavya" for seed and seedling treatment and also as a soil fertility enhancer by applying through irrigation water. Similar findings were given by Kumar *et al.* (2018). Next came use of neem extract for controlling pest followed by use of "Sanjivak" which is used as soil fertility enhancer. The results are in line with the findings given by Deshmukh (2015). Sixth position was held by use of rat traps followed by use of chapatti made from mixture of 250 g jaggery, 150 g ghee and wheat flour (*Triticum aestivum*) to feed animal once a day for inducing heat. The ITK which held eighth position was use of enriched "Amrut Ghol" used as soil fertility enhancer and growth and flowering enhancer followed by use of "Amritpani" used as soil fertility enhancer (@ 200 ltrs per acre along with irrigation water). Similar results were observed in the study conducted by Ravisankar *et al.* (2021). Last second most preferred ITK among the eleven was use of powder of half ripe bael (*Aegle marmelos*) fruit + powder of sheesam (*Dalbergia sissu*) leaves which is given to animal for diarrhoea control. Green manuring for enhancing soil fertility was the least preferred ITK among all ITKs that were identified. Table 2 results show level of utilization of ITK. Regarding this, it was observed that majority *i.e.* 70.83 per cent of the ITK practitioners had medium level of utilization followed by 15 per cent of respondents having low level of utilization and 14.17 per cent of respondents having high level of utilization of ITK.

**Table 1: Utilization pattern of ITK.**

Sr. No.	Activities	Always (%)	Sometimes (%)	Never (%)	Mean score
1.	Use of neem extract for controlling pest	74(61.67)	38(31.67)	08(6.67)	2.55(IV)
2.	Use of rat traps	64(53.33)	54(45.00)	02(1.67)	2.52(VI)
3.	Use of <i>Amritpani</i>	21(17.50)	67(55.83)	32(26.67)	1.91(IX)
4.	Use of <i>Panchgavya</i>	78(65.00)	34(28.33)	08(6.67)	2.58(III)
5.	Green manuring	22(18.33)	43(35.83)	55(45.83)	1.73(XI)
6.	Use of chapati made from mixture of jaggery, ghee and wheat flour to feed animal	71(59.17)	27(22.50)	22(18.33)	2.41(VII)
7.	Powder of half ripe <i>bael</i> fruit + powder of <i>sheesam</i> leaves for feeding animal	23(19.17)	46(38.33)	51(42.50)	1.77(X)
8.	Salt added to mustard oil applied all over the body of animal	78(65.00)	37(30.83)	5(4.17)	2.61(II)
9.	Use of enriched <i>Amrut Ghol</i>	47(39.17)	61(50.83)	12(10.00)	2.29(VIII)
10.	Use of <i>Bijamrut</i>	83(69.17)	32(26.67)	5(4.17)	2.65(I)
11.	Use of <i>Sanjivak</i>	77(64.17)	31(25.83)	12(10.00)	2.54(V)

**Table 2: Level of utilization of ITK.**

Sr. No.	Range	Utilization level	Frequency	Percentage
1.	<23.38	Low	18	15.00
2.	23.38-27.72	Medium	85	70.83
3.	>27.72	High	17	14.17
		Total	120	100

**Fig. 1.** Level of utilization of ITK.**CONCLUSION**

Present study focused on assessing the association between socio economic profile and utilization level of ITK among farmers. It was found that use of *Bijamrut* was most prominent ITK practised among sampled ITK practitioners. It was also observed from the study that majority of respondents *i.e.* 70.83 per cent had medium level of utilization of ITK.

**FUTURE SCOPE**

Studies can be formulated to find out the relationship between profile characteristics of ITK respondents and level of utilization regarding ITK in farm activities. Studies can also be conducted to identify and compare the perceptions of extensionists and researchers regarding some of the indigenous knowledge recorded in this investigation.

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**Conflict of Interest.** None.

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