

# Farmers' Perception on Tuber Crop Production Technology in Manipur, India

## Abstract

Tuber crop cultivation contributes positively to the economic empowerment of the poor people and generally preferred by the tribal people. The study was conducted in the hill districts, viz., Senapati, Tamenglong, Chandel, Churachandpur and Ukhrul districts of Manipur to understand the farmers perception on tuber crop mainly Elephant Foot Yam, Colocasia, Dioscoria and Casava production technology with 110 randomly selected respondents. Data collection was done through personal interview with structure schedule and was analyzed in terms of frequency, percentage and rank. The study revealed that perception of famers on tuber crop germination rate is 67 percent followed by weed management (48%), after care (58%) and cost of cultivation (55%) is as usual as other crop production technology whereas 78 percent of the respondents revealed that there is no difference between tuber crop and other crop production technology for overall rating. The respondents reported that water management (65 %), nutrient management (64%), disease incidence rate (58%), pest infestation rate (61%) and labour requirement (68%) are less as compared to other crop production technology.

**Keywords:** *Perception, Tuber Crop, Production Technology, Manipur*

## Introduction

“Tuber crops are rich source of carbohydrate and people can live healthy only having carbohydrate without protein and fat. Now a days climate is changing gradually and with this changed climate there is a need for alternative crops which can grow under such stress condition. Tuber crops especially cassava, elephant foot yam and yam are crops that can withstand some extent to drought condition, can be grown in waste landless affected by pests and diseases and with minimum care. Tuber crop cultivation contributes positively to the economic empowerment of the poor people”. (Nath and Shil, 2016). “Tuber crops constitute the important link to fill the food security gap with the ability to respond to climate change in an efficient manner. This necessitates a continuing need for the tuber crops to maintain strong productivity growth. Adaptation measures, including improved agricultural technologies, will be particularly important in reducing the potential impact in this context. Only 45-60 percent adoption of

production technologies in major tuber crops growing states hinting at the need to make concerted efforts to improve the diffusion/adoption of varieties and production technologies in different agro-ecological situations”. ([www.ctcri.org.in](http://www.ctcri.org.in)). “Traditionally, root and tuber crops have been considered primarily as food crops with some by-products and wastes used for animal feed. In reality, these crops are applied to a wide variety of uses which vary considerably across countries and regions, and indeed among the individual crops” (Nath and Gohain, 2013). “More specifically the tribal population of India constitutes about 67.6 million and woman in the tribal community constitutes half of the tribal population” (Nath et. al., 2022). In north eastern states tuber crop is very much popular among the Tribal community, but they are mainly growing local varieties which are having acidity nature and low production (Nath and Shil, 2016). Keeping in view the present study was conducted to access the perception of farmers on tuber crops production technology, because incorporation of tuber crop in their cropping system can be a workable solution to raise the farmers’ family income.

## **Materials and Methods**

The study was conducted in the hill districts, viz., Senapati, Tamenglong, Chandel, Churachandpur and Ukhrul districts of Manipur to understand the farmers perception on tuber crop mainly Elephant Foot Yam, Colocasia, Dioscoria and Casava production technology. One hundred and ten respondents were randomly selected for the study. Data collection was done with the help of a structured research schedule through personal interview method to achieve the objective formulated for the study. The perception of the respondents were measured in terms germination rate, weed management, water management, nutrient management, disease incidence rate, pest infestation rate, cost of cultivation, after care, labour requirement and overall rating in comparison with other crops. The collected data were analyzed to find out percentage and rank for each response category based on the frequency. The socio personal characteristics like age, educational level, mass media exposure, marital status and family type of the respondents were also measured under this study.

## **Results and Discussion**

The socio personal characteristic of the respondents is presented in Table 1 reveals that majority of the respondents were in the age group of 35 years and above (62%) with up to class

X educational level (42%) which have medium level of mass media exposure (55%) and majority of the respondents were married (98%) with joint family type (67%). Data presented in Table 2 reveals that perception of famers on tuber crop germination rate is more, i.e., 76 percent with I rank. Similarly, weed management (61 %, Rank I), after care (68 %, Rank I) and cost of cultivation (67 %, Rank I) is as usual as other crop production technology where as 88 percent of the respondents revealed that there was no difference between tuber crop and other crop production technology for overall rating. The respondents reported that water management (66 %, Rank I), nutrient management (72 %, Rank I), disease incidence rate (78 %, Rank I), pest infestation rate (81 %, Rank I) and labour requirement (69 %, Rank I) is less as compared to other crop production technology.

*Table-1: Distribution of the respondents according to their socio-personal characteristics (N= 110)*

Characteristics	Categories	Percentage
1. Age	20- 24 years	4
	25- 29 years	10
	30- 34 years	34
	35 years and above	62
2. Educational level	Illiterate	0
	Can read and write	2
	Up to primary school	16
	Up to class X	42
	Up to class XII	39
	Up to degree level or above	11
3. Mass media exposure	Low	49
	Medium	55
	High	6
4. Marital status	Single	12
	Married	98
6. Family type	Nuclear	43

	Joint	67
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**Table 2: Distribution of respondents based on their perception on tuber crop production technology (N= 110)**

SN	Parameter	Response	Percentage	Rank
1	Germination rate	More	76	I
		Usual	34	II
		Less	0	III
2	Weed management	More	39	II
		Usual	61	I
		Less	10	III
3	Water management	More	5	III
		Usual	39	II
		Less	66	I
4	Nutrient management	More	5	III
		Usual	33	II
		Less	72	I
5	Disease incidence rate	More	0	III
		Usual	32	II
		Less	78	I
6	Pest infestation rate	More	0	III
		Usual	29	II
		Less	81	I
7	Cost of cultivation	Cheaper	38	II
		Moderate	67	I
		Costly	5	III
8	After care	More	36	II
		Usual	68	I
		Less	6	III
9	Labour requirement	More	8	III
		Usual	33	II
		Less	69	I
10	Overall rating	Superior	17	II
		No difference	88	I
		Inferior	5	III

## Conclusion

An alternate approach would be to compare the crops in terms of energy and protein output in relation to human dietary demands. However, this technique has limitations in that no single crop effectively provides the balanced requirements of the human diet, which contains particular important amino acids, minerals, trace elements, and vitamins in addition to protein and energy. Tuber crops vary greatly in these diverse components and, as a result, differ significantly from other staples, most notably in terms of protein content. Food protein is especially crucial for the poor, whose food options are generally limited to one or two staple crops (Dutta et al., 2019). So, from the above findings it is concluded that the farmers of our region have potentiality, but they are not using these, after regular training, demonstration and guidance can make the farmer an expert for tuber crop production technology which ultimately can raise their individual family income as a whole.

## References

Dutta, P.; Rahman, B.; Nath, D.; Islam, N.; Chakraborty, S.; Gohain, I. and Datta, A. (2019). *Decision Support System of West Tripura, Vol. I*

Nath, Dipak and Gohain, Ingita (2013), Farmers perception on tuber crop production technology. *Agriculture Update*. **8** (3): 524-526.

Nath, D.; Singh, Brijendra and Sharma, Ranjit (2022). Involvement of tribal farm women in agricultural development in Meghalaya. *The Pharma Innovation Journal*, SP- 11(6): 2571-2573.

Nath, Dipak and Shil, Subhra (2016). Sustainable Livelihoods of Tribal Farmers of Tripura through Tuber Crop Cultivation. *Tui A journal on Tribal Life and Culture*, **XIX** (02).

Shil, S. and Nath, D. (2015). Varietal evaluation of Colocasia var. Muktakeshi under climatic condition of Tripura. *International J. of Plant Protection*, **8** (1): 214- 215.

[www.ctcri.org.in](http://www.ctcri.org.in)