

## ADOPTION OF TPS (TRUE POTATO SEED) CULTIVATION PRACTICES BY THE FARMERS OF TRIPURA

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**Abstract:** The study was carried out in Khowai district of Tripura with 180 nos. of randomly selected TPS growers. True Potato Seed (TPS) could be an alternative technology to increase productivity and reduce the cost of potato production leads to double the income of farmers in Tripura. It is found from the study that majority of the TPS growers (98.89 %) followed double raw system of planting and adopted water management practices followed by 67.78 per cent of the TPS growers adopted the recommended practices for manuring and fertilization. It is noted that 32.22 per cent of the TPS growers were not adopting the recommended practices related to manuring and fertilizer and 28.89 per cent of the respondents were not adopting the practices related to the plant protection measures.

**Keywords:** True Potato Seed, TPS, Tripura, Adoption.

### Introduction

North east India consists of 8 states, viz., Arunachal Pradesh, Assam, Manipur, Meghalaya, Mizoram, Nagaland, Sikkim and Tripura. Compared to national average of 18.2 t/ha, potato yield in the NE states except Tripura (19.7 t/ha) has been all time low (4.2- 8.3 t/ha). The low potato yield in the NEH region could be attributed to many factors. However, per capita availability of potato in the region is higher than the national level (Singh *et. al.*, 2003). Potato is one of the important crops grown in Tripura. The significance of this crop to the rural economy as well as agriculture of the state could be comprehended from the fact that potato occupies more than 5717 thousand hectare of land which accounts for 110 thousand MT productions (FIB, 2008). But though figures are satisfactory then also farmers are facing big loss in terms of yield. The main reasons for the low potato yields are adequate and untimely availability of essential crop inputs like healthy seed, fertilizers, pesticides etc. coupled with poor management practices followed by the growers. Prevalence of serious diseases like late blight, brown rot/ bacterial wilt, etc, is also responsible for low productivity in the region (Biswas *et. al.*, 2013).

Potato cultivation in Tripura was introduced during the regime of Maharaj Bir Bikram Kishore Manikya Bahadur (1923-1947). During that period, 'Phulwa,' an indigenous cultivar of potato was popularly grown in the state and was known as *Tipperra* or *Comella deshi* to the

farmers. It was characterized by small to medium size, white colour, smooth skin, round shape and yellow flesh. The potato farmers in Tripura are therefore compelled to use low quality seed tubers either available in the market at a cheaper rate or produced by them over several generations using the same seed stock (Nath *et. al*, 2017). In Tripura, true potato seed (TPS) could be an alternative technology to increase productivity and reduce the cost of potato production (Jamatia, 2017).

Owing to aforesaid vitalities of TPS Technology, there is a mandatory need to adopt the TPS Technology by the potato growers, for its increasing productivity. Though enormous programmes have been taken up but the potato farmers are not adopting TPS technology as expected. Therefore, the present study was undertaken with the specific to ascertain adoption level of recommended practices TPS technology by the potato growers.

### Research Methodology

The study was carried out in Khowai district of Tripura with 180 nos. of randomly selected TPS growers. To measure the adoption of recommended practices of TPS technology, thirteen recommended practices were selected after discussion with experts and consultation with literature. The frequency and percentage were calculated for both adopter and non adopter categories. The socio- personal characteristics of the respondent viz., age, educational level, mass media exposure, marital status and social participation were also calculated for both the categories and presented in Table 1. Data were collected by personal interview with the help of structured interview schedule.

### Results and Discussion

**Table 1: Socio personal characteristics of the respondents (N=180)**

Characteristics	Categories	Frequency	Percentage
1. Age	25- 29 years	16	8.89
	30- 34 years	59	33.78
	35 years and above	105	58.33
2. Educational level	Illiterate	2	1.11
	Up to primary school	17	9.44
	Up to class X	126	70.00
	Up to class XII	34	18.89
	Up to degree level or above	1	0.56
3. Mass media	Low	121	67.22

exposure	Medium	55	30.56
	High	4	2.22
4. Marital status	Single	18	10.00
	Married	162	90.00
5. Social participation	No membership	65	36.11
	Member of one organization	94	52.22
	Member of more than one organization	12	6.67
	Office bearers (secretary/president etc.)	9	5.00

The Table 1 reveals that majority of the respondents (58.33 %) including adopter and non adopter categories were in the age group of 35 years and above with educational level (70.00 %) up to class X. The Table also reveals that majority (67.22 %) of the respondents had low mass exposure with social participation (52.22 %) with member of one organization.

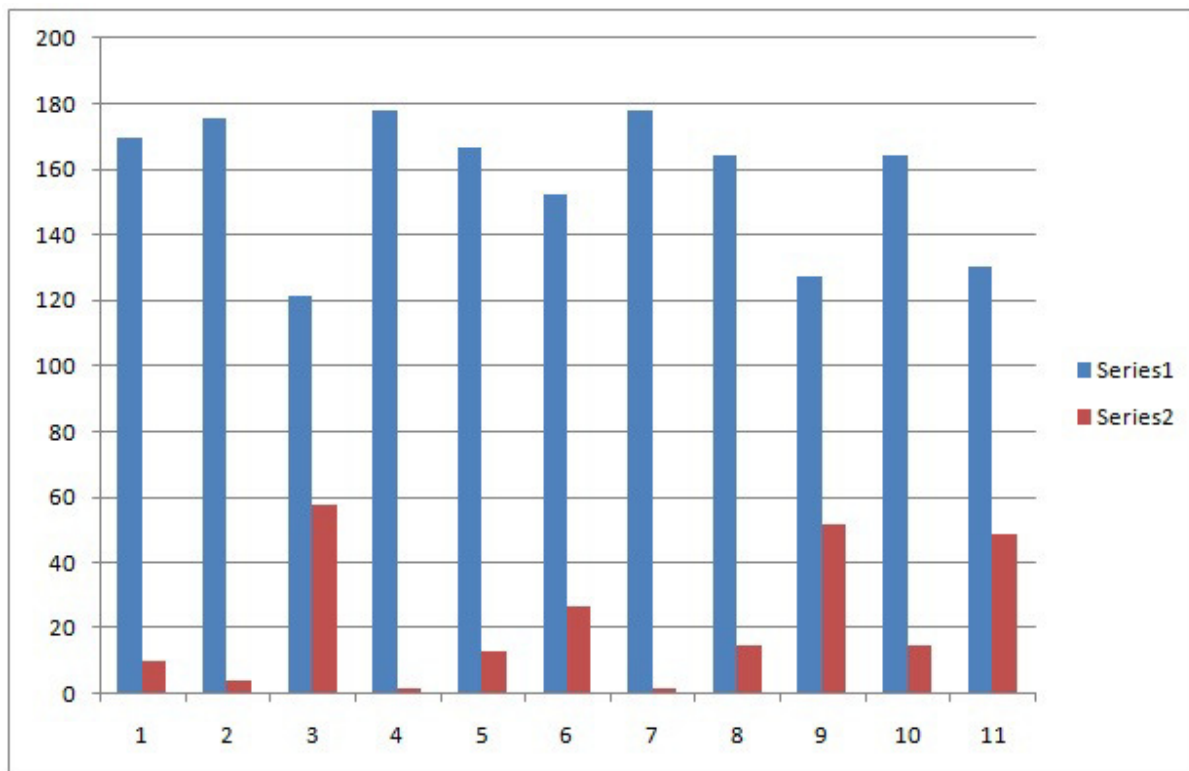
**Table 2: Adoption of TPS cultivation practices by TPS farmers (N=180)**

Sl. No	Practices	Adoption		Non adoption	
		Frequency	%	Frequency	%
1	Land Preparation	170	94.44	10	5.56
2	Time, spacing & depth of seed sowing	176	97.78	4	2.22
3	Manuring & Fertilization (Quantity & Time of application)	122	67.78	58	32.22
4	Double raw method of planting	178	98.89	2	1.11
5	Single raw method of planting	167	92.78	13	7.22
6	Intercultural Operation (activities, time & interval)	153	85.00	27	15.00
7	Water management	178	98.89	2	1.11
8	Haulm cutting	165	91.67	15	8.33
9	Plant Protection measures	128	71.11	52	28.89
10	Time of harvesting	165	91.67	15	8.33
11	Pre storage treatment	131	72.78	49	27.22

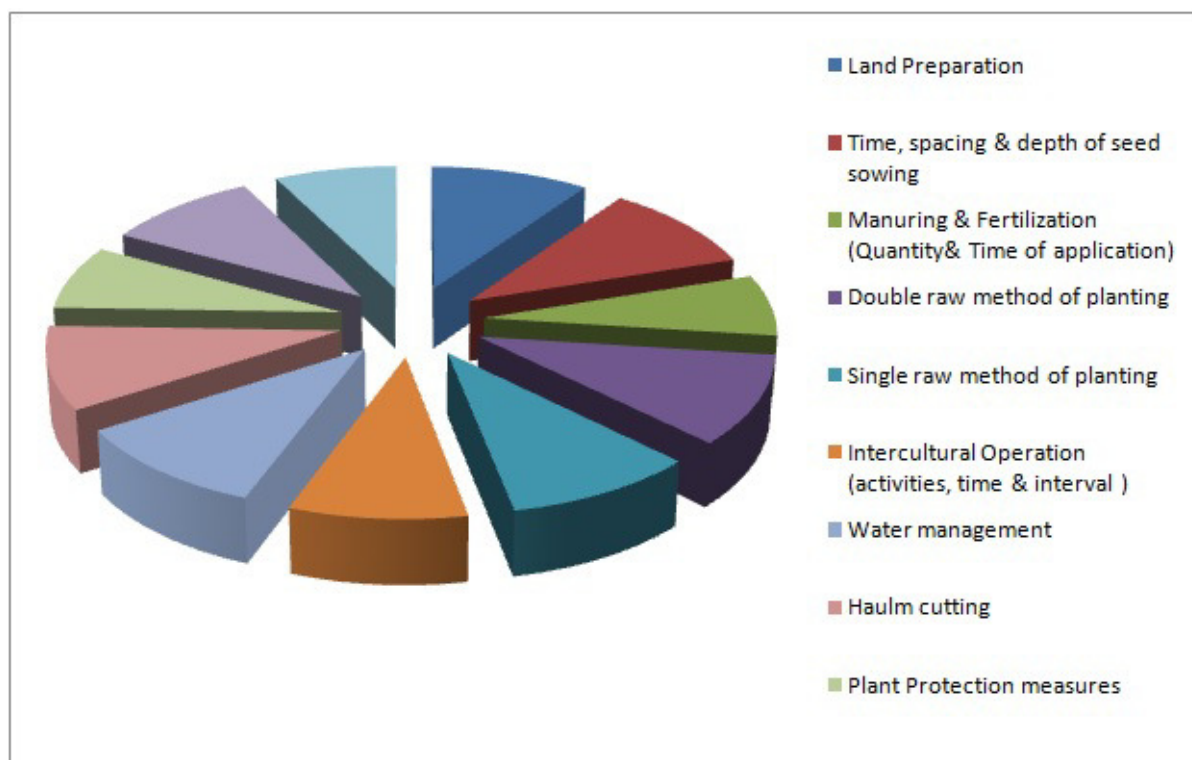
Data presented in Table 2 reveals that majority of the respondents (98.89 %) followed double raw system of planting and adopted water management practices (98.89 %) whereas 67.78 per cent of the TPS growers adopted the manuring and fertilization practices. The adoption of double raw system of planting may be due to the effective utilization of spaces. It is also

observed from the Table that 72.78 per cent of the respondents adopted pre storage treatment practices. This may be due to the unawareness of the practices.

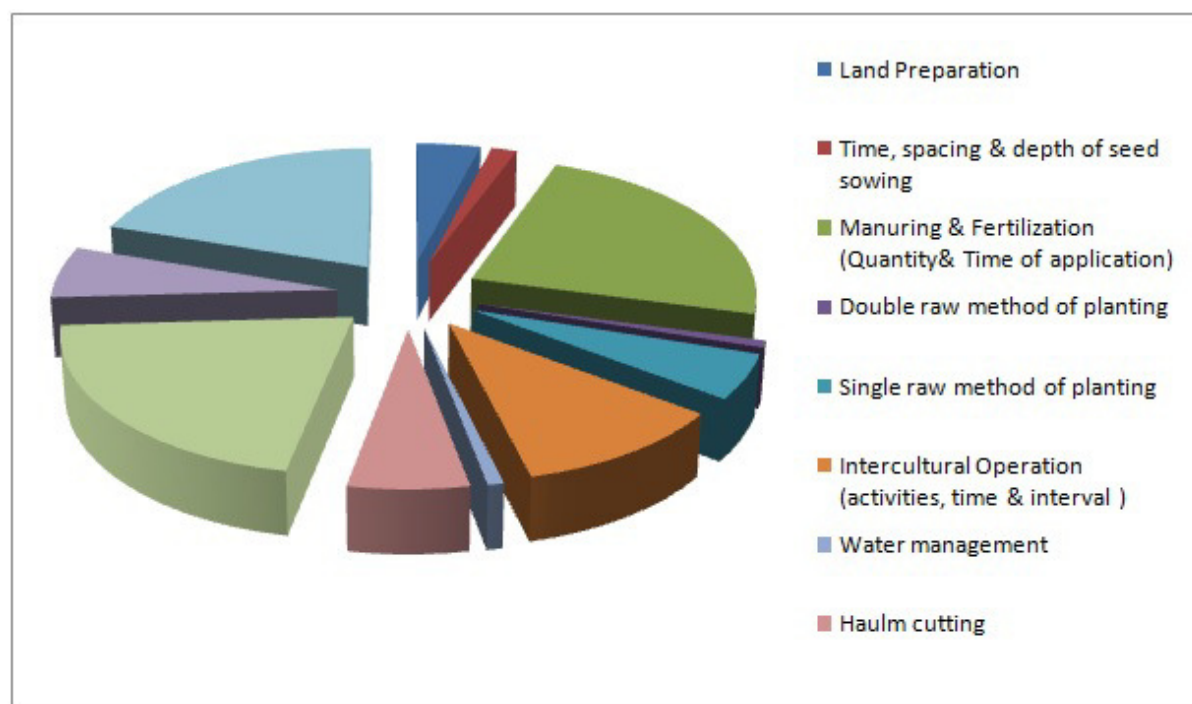
The Table also reveals that 32.22 per cent of the respondents were not adopting the practices related to manuring and fertilizer. This may be due to the unavailability of the input in local market. It is also observed from the Table that 28.89 per cent of the respondents were not adopting the practices related to the plant protection measures. This may be due to lack of knowledge of the respondents related to plant protection (Jamatia 2017).



**Fig. 1:** (Series 1: Adoption, Series 2: Non adoption)



**Fig. 2:** Practices showing adoption



**Fig. 3:** Practices showing non adoption

### Conclusion

It may be concluded that the TPS growers of Tripura need to be enhanced through focused training priority on plant protection measures of their crops (Nath *et. al*, 2014). These

includes primarily on the use of time specific fungicides and insecticides, proper identification of particular pests and diseases and their nature of spread etc. It is also observed that the growers not adopting the pre storage treatment which is more important in TPS cultivation. Farmers are not adopting the right practices resulting they are not getting optimum assured profit which is due to the lack of sufficient knowledge with respect to recommended package of practices. So, it is utmost necessary that the agricultural extension workers, through regular trainings on recommend packages with the TPS growers should guide the farmers to get optimum yield per unit area by effective management against pests and diseases to double their income by 2022.

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