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Technological need of True Potato Seed (TPS) growers of Tripura

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ABSTRACT

The study was conducted in Khowai district of Tripura with randomly selected True Potato Seed (TPS) growers. TPS can serve as a great alternative to the seed tubers in the hilly state of Tripura as only 100 g TPS is needed for one ha. of land as compared to nearly 2 tones of seed tubers required to plant in the same area. TPS can be used as a suitable alternative technology of potato cultivation in the state to improve the productivity and reduce the cost of production. The technological need of the majority of the TPS growers, i.e., 87.50 per cent was plant protection measures with rank I. The other technological need observed were post harvest treatment (79.17 %) which includes application of boric acid, sorting and grading, packing, curing etc. and method of fertilizer application (76.67 %) with II and III rank respectively. So, it is utmost necessary that the agricultural extension workers through regular trainings on plant protection measures with the TPS growers should guide the farmers to get optimum yield per unit area by effective management of pests and diseases.

Key words: Technological need, True Potato Seed (TPS), Tripura, TPS growers.

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 crop 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.

Tripura is a land locked state; hence, non availability and high cost of healthy planting materials (tubers) have been recorded as the main constraint for increasing production and productivity of potato. To overcome this, TPS could be an alternative technology to increase productivity and reduce the cost of potato production because, it has many advantages over the conventional seed tuber, among which the mentionable are, a) cost effectiveness, b) less seed rate, c) disease free seed, d) resistant to late blight, e) higher yield, f) negligible transportation cost etc. The present production of potato could be increased considerably if the available technology is effectively transferred to the farmer. Our training programme need to focus more on transferring of new technology from the confines of laboratories and research institute to the farmers and make then result oriented. Keeping all these aspects in view, the present study was undertaken to ascertain the training needs of TPS growers in the main areas of training with respect to improved potato cultivation and to know the training needs of potato growers in the sub areas of plant protection measures.

MATERIALS AND METHODS

The study was conducted in Khowai district of Tripura with True Potato Seed (TPS) growers. Khowai subdivision of Khowai district was purposively selected for the study out of six subdivisions of the district as majority of the TPS growers of the district falls under this subdivision. The selected size of sample for the study was 120. The sample was selected randomly for the study. A structured schedule was prepared containing different areas related to TPS cultivation which was administered to the sample selected for the study. The technological needs were identified in main areas based on package of practices and sub areas of plant protection measures after discussion with experts and based on review of literature. The frequency and percentage were calculated and the technological need areas were ranked based on the percentage.

RESULTS AND DISCUSSION

Technological need of TPS growers in the main areas: The result related to technological need of True Potato Seed

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Table 1: Technological need of TPS growers in the main areas (N= 120).

Main areas	Frequency	Percentage	Rank
Seed treatment	84	70.00	IV
Sowing method and sowing time	71	59.17	V
Fertilizer application	92	76.67	III
Irrigation and drainage	41	34.17	VIII
Weed management	54	45.00	VI
Plant protection measures	105	87.50	I
Post harvest treatment	95	79.17	II
Marketing	47	39.17	VII

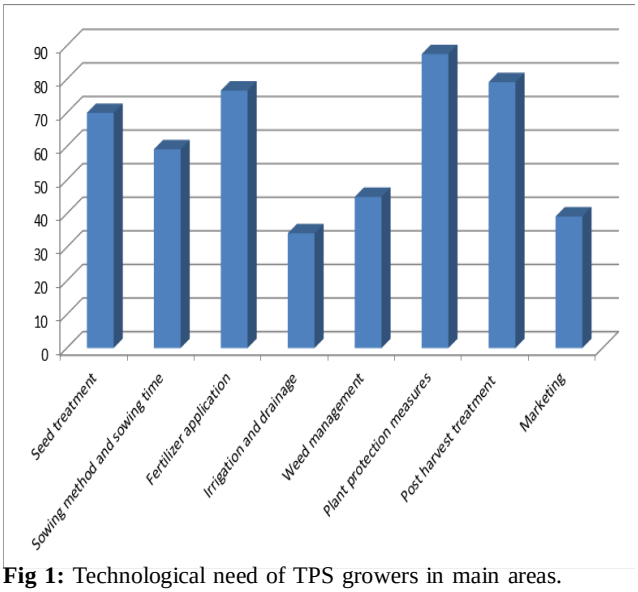


Fig 1: Technological need of TPS growers in main areas.

(TPS) growers in the main areas presented in Table 1 reveals that majority of the respondents perceived that plant protection measures as their first and top most required technological need indicating its percentage, i.e., 87.50 % which received 1st rank followed by training need on manures and fertilizer management (72.50 %,) and seed treatment (67.50 %) which received 2nd and 3rd rank respectively. The sowing method and sowing time was observed as the forth rank area with 63.33 % followed by weed management (42.50 %), storage (38.33 %), irrigation & drainage (34.17 %) and marketing (24.17 %) with 5th, 6th, 7th and 8th rank respectively. These areas were considered as least needed areas among the TPS growers. In fact potato crop is often affected by certain diseases and pest. So, obviously it was the reason perceived by the respondents that plant protection measures as the first area for technological need. Similar findings were also reported by Nath *et. al.*, (2014).

Technological need in the sub areas of plant protection measures: The findings related to technological need in the sub areas of plant protection are presented in Table 2. Data presented in Table 2 reveals that TPS growers were perceived the sub area of awareness about use of various insecticide and pesticide as the top most relative technological need indicating 95.00 per cent with 1st rank followed by the sub area of identification of major insect pest and disease (90.83 %) and cause of spread (85.83 %) which received the 2nd and 3rd rank respectively. Similar findings were also reported by and Nath *et. al.*, (2017). The Table 2 also reveals that the time & method of management (80.00 %), residual effect of insecticides and pesticides (76.67 %), handling of plant protection implements (74.17 %) and preparation of pesticide solution (65.83 %) received 4th, 5th, 6th, and 7th rank respectively. Among different aspects of identification of plant protection measures and management of diseases has always possessed major challenges before the TPS growers. Once the disease appears on the crop yield is drastically reduced. Therefore, the TPS growers felt the technological need for management of diseases. The study was in line of Sing *et. al.*, (2005), Verma *et. al.*, (2013).

CONCLUSION

It may be concluded from the above findings that the knowledge gain of TPS growers need to be enhanced through focused training priority on plant protection measures. 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. Farmers are not getting optimum assured profit due to lack of sufficient knowledge with respect to above mentioned identified top reasons as well as its application in their field. So, it is utmost necessary that the agricultural extension workers, through regular trainings on plant protection measures with the TPS growers should guide the farmers to get optimum yield per unit area by effective management against pests and diseases.

Table 2: Technological need of TPS growers in the sub areas of plant protection measures (N= 120).

Sub areas	Frequency	Percentage	Rank
Identification of major insect pest and disease	109	90.83	II
Cause of spread	103	85.83	III
Time and method of management	96	80.00	IV
Awareness about use of various insecticide and pesticide	114	95.00	I
Preparation of pesticide solution	79	65.83	VII
Handling of plant protection implements	89	74.17	VI
Residual effect of insecticides and pesticides	92	76.67	V

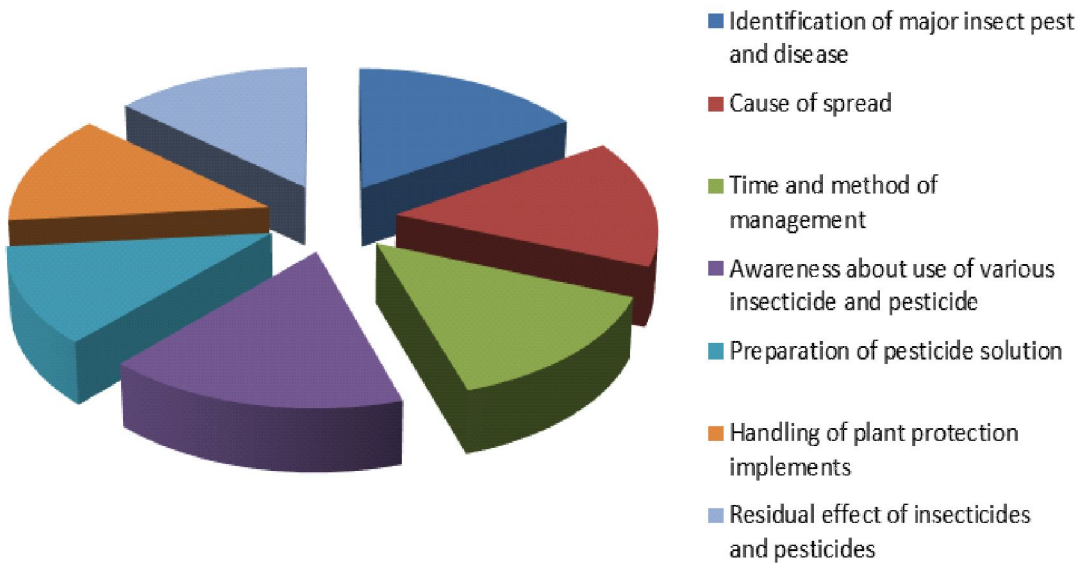


Fig 2: Technological need of TPS growers in the sub areas of plant protection measures.

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