adras Agric. J. 91 (1-3) : 117-119 January-March 2004
https://doi.org/10.29321/MAJ.10.A00080

doption of potato production technologies by tribal farmers

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Abstract : An investigation was undertaken to study the adoption of recommended potato production technologies by tribal farmers in Nilgiris district. On overall analysis, it was observed that there existed low adoption level among tribal farmers. The technology-wise analysis indicated that the recommended harvest method, varieties, season and rejection of pest and disease affected tubers had very high adoption. Moderate adoption level was observed for the technologies of seed rate, pest and disease management measures, spacing and first earthing up. Application of NPK and FYM, growth regulator, micro nutrient, weed management and second earthing up were found with low level of adoption.

Key words : Tribal farmers, Adoption, Traditional, Constraint.

ntroduction

India has the largest concentration of ribals in the world next to Africa. India is vast and multicultural and racial country with tribal population of 6.77 crores which is bout eight per cent of the tribal population f the country (Government of India Annual Report, Ministry of Welfare, 1996). Tribals ccupy 20 per cent of the country's space and early 90 per cent of them depend on agriculture. n modern agriculture, productivity mainly depends n the extent to which farmers adopt recommended ew technologies. According to Rogers (1983), doption is a decision to make use of an innovation s a best course of action available. Most of he tribal farmers don't realize the benefits rom the new farm technologies and also they re not adopting the technologies. They are ostly following the traditional methods in griculture which are transmitted to them through generations. Lack of awareness and knowledge about the innovations may be the prime factor for the non-adoption of new technologies. The intensive efforts taken by the State Department of Horticulture could have changed the scenario. Continuous studies are required to assess their adoption level, so that attempts could be made to bring them in the main stream of development. Keeping the about facts in view, a study was undertaken with the objective to assess the adoption level of recommended potato cultivation technologies among the tribal farmers.

Materials and Methods

Since the study is on tribal farmers, a district in Tamil Nadu which has more tribal population was selected. The population of tribes was more in the Nilgiris district than other districts of the state. Hence, the study was taken up in the Nilgiris district during 1998-2000. Uthagamandalam taluk was selected since it had more tribal population than other taluks of the district. The study was taken up in five randomly selected villages of Uthagamandalam taluk. It was found that Toda and Kota tribals were more involved in cultivation of vegetables than other tribals. Hence,these two tribals were selected for the study. The major vegetable crop was potato and hence it was selected. A sample size of 120 respondents were selected from the five villages proportionate to their population following the proportionate random sampling method. With the help of crop production guide jointly prepared by TNAU and State Department of Horticulture and also in discussion with the horticultural development functionaries, 21 technologies were identified for the study as the recommended technologies for potato crop. Data were collected through personal interview using a well structured interview schedule. Percentage analysis and independent 't' test were applied to analyse the data.

Results and Discussion

The overall adoption level and the technology-wise adoption level were studied.

Table 1. Distribution of respondents according to adoption level

Sl.No.	Category	Kotas (n=86)		Todas (n=34)		Total (n=120)	
		f	per cent	f	per cent	f	per cent
1.	Low	37	43.02	19	55.88	56	46.67
2.	Medium	33	38.37	9	26.47	42	35.00
3.	High	16	18.61	6	17.65	22	18.33
	Total	86	100.00	34	100.00	120	100.00

t=3.4661**

Table 2. Distribution of respondents according to technology-wise adoption

Sl.No.	Technology	Adoption	
		Frequency	Per cent
I.	*Crop improvement*		
1.	Varieties	90	75.00
II.	*Planting*		
2.	Season	87	72.50
3.	Seed rate	61	50.83
4.	Growth regulator	19	15.83
5.	Spacing	55	45.83
III.	*Manures and manuring*		
6.	FYM	19	15.83
7.	Nitrogen	41	34.17
8.	Phosphorus	32	26.67
9.	Potash	25	20.83
10.	Micronutrient mixture	21	17.50
IV.	*Intercultivation*		
11.	Weed management	40	33.33
12.	First earthing up	58	48.33
13.	Second earthing up	41	34.17
V.	*Pest management*		
14.	Management of cutworm	57	47.50
15.	Management of tubermoth	57	47.50
16.	Recommended pesticide	55	45.83
17.	Quantity of pesticide	47	39.17
VI.	*Disease management*		
18.	Management of viral diseases	60	50.00
VII.	*Harvest and storage*		
19.	Method of harvesting		
20.	Separation of pest and disease attacked tubers	85	70.83
21.	Conditions for storage	30	25.00

(multiple responses)

Overall adoption level

Using the cumulative frequency, the adoption level was categorized into three categories. The results are presented in Table 1.

As much as 46.67 per cent of the tribal respondents had low level adoption followed by moderate (35.00%) and high (18.33%) level of adoption.

The group-wise analysis revealed that the two groups of tribal respondents significantly differed from each other in their adoption level. The 't' value was significant at one per cent level of probability. Majority of the Toda farmers (55.88%) possessed low level adoption while majority of the Kota farmers possessed medium to low level (43.02% and 38.37%) of adoption indicating that the Kota farmers had significantly high adoption level than Toda farmers. More traditionalism existing among the Toda farmers may be the reason for their overall low adoption level.

It could be concluded that there existed ly level of adoption among tribal farmers, ta farmers were superior over Todas in adoption el indicating that the tribals differ in their option level. This finding is in conformity th the finding of Patil *et al.* (1998). They o reported that majority (70.84%) of tribal mers had low level adoption of improved ctices whereas 23.33 per cent of them had dium level of adoption and 5.83 per cent d high level of adoption.

chnology- wise adoption level

The technology-wise adoption level was died and the findings are presented in Table 2. e recommended harvesting technology had t per cent adoption level. This was followed adoption of recommended varieties (75.00%), nting in the right season (72.50%) and separation pest and disease affected tubers (70.83%).

The State Horticulture Department has ated awareness on the latest varieties among mers. As a result of this effort, a situation s been created that the-seed materials of latest rieties are alone available in the market. his would have made the respondents to plant e recommended varieties. The harvesting chniques and rejection of the pest and disease fected tubers are the market oriented activities. these practices are not followed, their tubers ould fetch very low price in the market. his would have been the possible reason for gh adoption.

The technologies of seed rate (50.83%), anagement of viral disease (50.00%), first rthing up (48.33%), management of cut worm d tuber moths (47.50% each) and pesticides commended to manage pests and spacing (45.83% ach) had moderate level of adoption.

The practices *viz.* seed rate, spacing, earthing , management of pests and disease are not llowed, there will be proportionate reduction the yield. This fear of reduction in yield ould have made the respondents to adopt ese technologies. The financial constraint, vailability of labour and inputs required would have acted as barriers in adoption by way preventing the full adoption.

Some technologies had low adoption level. Application of growth regulator and application of farm yard manure (15.83%each), application of micro nutrient mixture (17.50%), application of potash and phosphorous (20.83 and 26.67% respectively), storing the tubers in the ideal conditions (25.00%), weed management (33.33%), and nitrogen application and second earthing up (34.11% each) were the technologies which had low adoption level. Farmers usually avoid increase in the cost of cultivation. They do not adopt technologies which are high cost involved. Some technologies will not have direct visible impact by way of substantial yield increase. Such technologies had low level of adoption. The non-availability of required inputs in the nearby markets and high cost of labour would have been the other reasons for low level of adoption.

Conclusions

Tribal farmers in general were found with low adoption level. Non-adoption of some technologies may greatly affect the yield and market price. Such technologies had high level of adoption. Non-availability of required inputs and high cost of technology adoption would have resulted in moderate level of adoption of certain technologies. Farmers have rated some technologies as not very important technologies because their impact is not directly visible. Such technologies had low level of adoption.

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(Received: May 2003; Revised: December 2003)