

Influence of Personal Characteristics of Farmers on the Adoption Pattern of Recommended Cultivation Practices in Potato in Dharwad

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Abstract : The study conducted on the adoption pattern of recommended package of practices of potato crop among the farmers of Dharwad taluk revealed that 53 per cent of farmers were under high adoption category. It also revealed that over 80 per cent of farmers adopted practices such as variety, seed rate and time of sowing. The personal characteristics of farmers like education and land holding had significant association with adoption level whereas mass media participation had no significant impact. The variety kufri chandramukhi was preferred because of its characteristics.

Introduction

Potato (*Solanum tuberosum*) is one of the most important commercial food and vegetable crops in India. It produces more food per unit area as compared to cereals and also provides more returns in a much shorter time. It also provides raw materials for an array of industrial products.

It is because of these inherent qualities, a commercial crop like potato has received a considerably important place in Indian agriculture.

The average yield of potato in Dharwad district is 2,500 to 3,000 kg per acre. Research has shown that potato yields could be increased to 6,000 - 6,500 kg. This gap could be narrowed down by adopting the recommended potato cultivation practices by farmers.

Adoption of new farm practices by the farmers is a type of decision making. This depends on many factors such as awareness, knowledge, usefulness of innovation and also personal and socio-economic characteristics. All these influence the adoption behaviour of farmers.

Keeping this in view, the present study was conducted during 1988 among the potato growers of Dharwad taluk with the following specific objectives. 1) to assess the extent of adoption of recommended cultivation practices of potato. 2) to ascertain the influence of education, size of land holding and mass media participation on the adoption pattern, and 3) to study the perception of the farmers about the characteristics of improved potato varieties.

Material and Methods

The study was conducted in Dharwad taluk. Out of the 110 villages in the taluk, four villages, viz., Narendra, Garag, Marewad and Yettinagud-da were selected considering their close proximity to UAS, Dharwad campus and ARS, Hebballi. One hundred potato growers who had taken up potato cultivation during kharif 1987 were randomly selected from the four villages. The information was elicited from the respondents with the help of a pre-tested structured schedule. Data were collected by personally interviewing the farmers assuring them of anonymity. The data collection was done during March-May, 1988.

Education level, Landholding status and Mass media participation were used as the independent variables in the study.

Education level : The quantification of this variable was done as suggested by Patel and Singh (1970).

The maximum score a respondent could achieve was '5' and minimum '0'. The respondent's educational level score was directly used to find out its correlation with the dependent variables.

Landholding status : Data were collected on the number of acres possessed by each respondent grower. The size of landholding was determined on the basis of classification of land as standard acre as given by Karnataka Land Reforms Act of 1966. Size of landholding was directly used to find out its correlation with the dependent variables.

Mass media participation : In order to assess the extent of participation by respondents in mass media source, two major mass media sour-

ces were listed and respondents were asked to indicate their subscription/possession by YES/NO questions. For each source, a score of '1' and '0' for Yes and No was assigned, respectively.

The minimum and maximum score possible were 0 and 2, respectively. The respondents' mass media participation score was used directly to find out the correlation with dependent variables.

Adoption level : Adoption is the state in which the material component of practice is accepted. In this study, adoption has been operationalised as the practice adoption of the selected recommended practices for the cultivation of potato.

The practices used for measuring the knowledge level were used to test the adoption level of respondents. Scores - '2', '1' and '0' were assigned to 'full adoption', 'partial adoption' and 'non-adoption', respectively. Thus, one could get maximum of 18 scores for full adoption of practices used in the test.

The general adoption level of respondents with respect to recommended potato cultivation practices was measured in terms of adoption quotient (AQ) as suggested by Sengupta (1967) for calculation of adoption index.

The data were quantified, tabulated and analysed using frequencies, percentages and mean. correlation co-efficients were worked out to ascertain the relationship between variables and these co-efficients were tested with 't' test using standard formula.

Results and Discussion

Extent of adoption of potato cultivation practices by potato growers :

The study revealed that 53 per cent of potato growers fall under high adoption category with 72.34 average adoption score and 47 per cent were low adopters with 51.77 average adoption score. Potato being a cash crop, the farmers might have overcome the problems of input and credit availability. Lack of knowledge, high cost of inputs and timely non-availability might be some of the reasons for the growers to fall under low adoption category.

Adoption pattern of individual cultivation practices of potato by potato growers :

A look at Table 1 indicates that more than 80 percent of the farmers completely adopted practices like variety (99%), seed rate (87%) and time of sowing (84%). Partial adoption was found in practices like disease control (84%) and pest

control (82%) followed by other practices like spacing (68%).

Simplicity and knowledge about technology such as variety and time of sowing, in addition to the sufficient availability of seeds at comparatively reasonable price might have lead the farmers for high adoption of above practices. Lack of knowledge about recommended quantity of chemicals for control of disease and pests, spacing, compost, chemical fertilizer dose and time of application of chemical fertilizers might be the reasons for partial adoption. Complexity of an innovation, high cost and environmental variables might have also influenced the farmers for limited adoption of practices like fertilizer dose and use of recommended plant protection chemicals.

One of the possible reasons for partial adoption of disease and pest control measures might be the relatively less incidence of disease and pests. Non-availability of compost to the satisfaction of recommended dose due to heavy demand

Table 1. Adoption pattern of individual cultivation practices of potato by potato growers

		(n=100)		
Sl. No.	Cultivation practices	Full adoption	Partial adoption	Non-adoption
1.	Variety	99	00	01
2.	Seed rate	87	11	02
3.	Time of sowing	84	15	01
4.	Spacing	26	68	06
5.	Compost	16	56	28
6.	Chemical fertilizer dose	14	47	39
7.	Time of application of chemical fertilizers	12	42	46
8.	Pest control	17	82	01
9.	Disease control	15	84	01

and its high cost might be reasons for partial adoption of compost by the potato growers.

Characteristics of the respondents and their association with adoption level

Education and adoption level:

Education status of the respondents had significant association with adoption pattern as indicated by the correlation co-efficient (Table 2) test when applied to the data.

Table 2. Personal characteristics of respondents and association with knowledge level and adoption pattern

Personal characteristics	Adoption	
	r	t
Education	0.340	3.581**
Landholding status	0.294	3.048**
Mass-media participation	0.078	0.776 NS
** Significant at 1% level		
NS - Not significant		

Plausible reason for significant association of education with adoption of cultivation practices of potato crop might be that the farmers would be more benefitted as a result of formal education, since it would help in widening their mental horizon and facilitates learning by developing a favourable attitude towards adoption of new farm practices. It is also true that rationality in decision-making is a function of one's educational level and for adoption of any innovation, decision making is a key component.

The findings were in close conformity with those reported by Desai (1975) who reported that there was significant association between education level of potato farmers and adoption behaviour.

Landholding status and adoption level:

Land holding status was found to have significant association with the adoption level of recommended potato cultivation practices. It may be because the farmers having higher landholding status usually have better socio-economic status. According to Canclan's theory 'Rank inhibits risk taking' i.e., increase in the status of the farmers would enable him to endure high risk, lower rank of the farmer in the society will inhibit the degree of risk taking. Better financial resources enables an individual to invest in different specialised farm operations of modern agriculture. Therefore, as the risk bearing capacity and financial strength are closely related with higher landholding status of farmers, it appears to be an important factor associated with the adoption of recommended cultivation practice.

Mass media participation and adoption level:

Mass media participation of the potato grower had no significant association with adoption level. It could be inferred from the above findings that irrespective of their subscription to news papers and possession of radio or TV, the potato farmers acquired knowledge and adopted the innovation. It is due to the motive of higher remuneration from the cultivation of potato crop. Also, the credibility of grass root level extension personnel of UAS, Dharwad and private agencies may be high due to their intensive extension work as the villages under the study were in close proximity of UAS, Dharwad and district head-quarter.

Characteristics of improved potato varieties as perceived by the potato growers:

It is evident from Table 3 that majority of the farmers (above 80) perceived that the variety kufri chandramukhi is suitable, economically advantageous, non-risky and trialable whereas considerably lesser number of farmers (less than 30)

Table 3. Characteristics of improved varieties of potato as perceived by the potato growers

(n=100)

Sl.	Variety	Suitability		Economic Advantage		Risk		Triability	
		Suitable	Non suitable	Advantageous	Not advantageous	Non risky	Risky	Triable	Non-trialable
1.	Kufri Chandramukhi	81	19	89	11	78	22	87	13
2.	Kufri Jyoti	23	77	26	74	17	83	26	74
3.	Kufri Badashah	14	86	20	80	09	91	19	81

perceived kufri jyoti followed by kufri badshah as suitable, economically advantageous, non-risky and triable.

Kufri Chandramukhi was preferred to the other two varieties because it was released relatively earlier than the other two. Kufri chandramukhi is quite popular in the area as it is being adopted on the farms over a long period of time, and its characters such as suitability, economic advantage, risk in cultivation and triability have been tested by the growers. The availability of seeds of kufri jyoti and kufri badshah have become scarce and hence, majority of the potato growers are not aware of the advantages of these two varieties.

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