Adoption Behaviour Of Improved Potato Production Technology Among The Farmers Of Meerut District (UP)

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ABSTRACT: *Agriculture is the prime source of all round development of our country, where crop husbandry contribute significantly towards total economy of our nation. In the context of food requirement of our burgeoning population, potato is one of the important crop for meeting this demand as a wholesome food. The present study was conducted during 2018-19 in purposively selected area Meerut covering 06 villages and a sample of 120 potato growers was selected through proportionate random sampling method. The study revealed the association between the socio-economic characters with that of the adoption behaviour towards improved production practices.*

Keywords: Innovativeness, Extension contact, Mass Media exposure, Adoption and Production technologies

INTRODUCTION

Potato (Solanum tuberosum L.) family (Solanaceae) is one of the most important food crop of the world. Potato has been cultivated in Uttar Pradesh for a long time and it has become one of the most popular crop for vegetable purposes. Potatoes are economical food since they provide a source of low cost energy to the human diet. They are rich source of starch and vitamins especially C and B1 and minerals. They contain 20.6% carbohydrates, 2.1% protein, 0.3% fat, 1.1% crude fiber and 0.9% ash on fresh weight basis (Census 2011). It also contain good-amount of essential amino acids like leucine, tryptophan and isoleucine etc. Potato is cultivated in area about 19,124,181 million hectare in the world. The major potato growing countries are China, Russia, Ukraine and India. India is in 3rct position in potato production and in 4th position under area. Potato production has played a vital role in increasing vegetable production of the country. The contribution of the country in world potato pool has increased from 6.4 per cent to 7.8 per cent during last decade with processed products commanding a large share of the potato market. In India, potato is grown over an area of 1,255,667 hectares, with a production of about 23, 191,200 tones. The top eight potato growing states are U.P., West Bengal, Bihar, Punjab, Karnataka, Assam, Gujarat and M.P (Census 2011).

Knowledge of these constraints is essential to undertake appropriate measures which need to enhance the potato production in the state. Shortage of labour, Lack of knowledge about disease and pest control, Lack of proper

transport facilities are few constraints that are common in adoption behaviour of improved potato technology among the farmers.

MATERIALS AND METHODS

The present investigation is conducted in Meerut district of Uttar Pradesh state which is purposively selected based on research objectivity and criteria of sampling concerning adoption behaviour of potato growers. In Durala block of Meerut, 6 villages were selected randomly for the present study. Total 120 number of respondents were selected from each selected village for the present study. The primary data was collected with the help of pre-tested-structured interview schedule, designed especially in the light of objectives , whereas secondary data was collected from sources like thesis, journals, literature etc.

Percentage analysis were done to analyse the data. And ranking was done according to results obtained.

Percentage: The term 'Percentage' means a fraction whose denominator is 100 and the number of the fraction is called percentage.

$$P = \frac{X}{N} \times 100$$

Where, P = Percentage   X = Frequencies of respondents   N = Total number of respondents.

RESULTS AND DISCUSSION

The results collected from the respondents regarding the Socio-economic are presented in the following table1,

In the above table, the data reveals that the majority (49.17 %) of the farmers belonged to middle age group and 21.66 per cent were of old age and 21.66 per cent belonged to young age. In education, about 30.83 per cent of the respondents were illiterate and 15 per cent of the respondents had primary school level of education and 35 per cent respondents had secondary school education whereas 11.67 per cent had up to high school followed by 6.67 per cent of respondents having intermediate level of education and 0.83 per cent respondents were graduate and above education respectively. 74.17% of the respondents are practicing farming (agriculture) as their major occupation followed by farming and subsidiary 10% respectively. 54.16 percent of the respondents are coming to the category range of 1 lac- 2.5 lac followed by income of 2.5lac-5 lac (24.17%) followed by above 5 lac (12.50%) and 9.17 percent of the respondents have annual income below 1 lac. The above table shows that 60per cent of the respondents are in Nuclear family, followed by the joint family (40%) respectively.14.17 percent of respondents had thatched house whereas 48.33 percent respondents had semi-cemented house and remaining 37.50 percent had cemented house. The data regarding land holdings indicated that the majority (34.17%) of respondents belonged to the category of large farmers followed by 33.33 per cent of respondents belongs to medium farmers. While, only 22.50 & 1 per cent of respondents belongs to the category of small & marginal farmers. Majority (81.67%) of the respondents were having low level extension contact, 11.67 per cent had medium, whereas 6.66 per cent of the respondents were found with high extension contact. The data has been presented in Table I.

Table I : Overall Socio-economic characteristics of the respondents:

Sl.no.	Variables	Category	Frequency(Percentage)
1.	Age	Young (21-35)	35(29.16)
		Middle (36-55)	59(49.17)
		Old (56 & above)	26(21.67)
2.	Education	Illiterate	37(30.83)
		Primary	18(15)
		Secondary	42(35)
		High school	14(11.67)
		Intermediate	08(6.67)
		Graduation & above	1(.83)
3.	Occupation	Farming system	89(74.17)
		F.S.. + subsidiary	12(1)
		Others	19(15.83)
4.	Annual income	Below 1 lac	11(9.17)
		1 lac- 2.5 lac	65(54.17)
		2.5 lac -5 lac	29(24.17)
		Above 5 lac	15(12.5)
5.	Family type	Nuclear	48(40)
		Joint	72(60)
6.	Land holding	Below 1 ha	12(1)
		1-2ha	27(22.5)
		2-6ha	40(33.33)
		Above 6ha	41(34.17)

7.	Extension contact	Low (4-6)	98(81.67)
		Medium(6-8)	14(11.67)
		High (8-10)	8(6.67)
8.	Mass media exposure	Low (6-11)	41(34.17)
		Medium (11-16)	58(48.33)
		High (16-21)	21(17.5)
9.	Innovativeness	Low	31(25.83)
		Medium	48(40)
		High	41(34.17)

Sl.no	Category	Frequency	Percentage
1.	Low (9-14.33)	38	31.67
2.	Medium (14.33-19.66)	50	41.66
3.	High (19.66-24.99)	32	26.67
4.	Total	120	100

Coming to the adoption behavior of the respondents 77.5%,64.16%,52.60% of the potato growers used the recommended potato variety, manuring practices and weed management respectively. Then 49.17%, 50.83%,90%,90.83, 79.17%, 74.16% , 84.17% of the growers partially adopt the recommended seed spacing and sowing rate ,seed treatment, irrigation management, harvest and shade management respectively. Then 50%, 55% of the respondents did not adopt the recommended nutrient management and disease & pest management practices.

Table 2. Distribution of respondents based on their extent of Adoption towards POTATO improved production practices

S.No.	Statements	Adoption Level		
		FA	PA	NA
1	Recommended Potato Variety	93(77.5)	7(5.83)	20(16.67)
2	Seed rate/ha	55(45.83)	59(49.17)	6(5.00)
3	Seed treatment	47(39.17)	61(50.83)	12(10)
4	Spacing	2(1.66)	108(90.00)	10(0.00)
5	Sowing time	10(8.33)	109(90.83)	1(0.84)
	Manuring	76(64.16)	39(32.50)	5(4.16)
6	Nutrient management	33(27.5)	27(22.5)	60(50)
7	Irrigation management	18(15.00)	95(79.17)	7(5.83)
8	Weed management	63(52.5)	35(29.17)	22(18.33)
9	Disease and pest management	44(36.67)	10(8.33)	66(55)
10	Harvest	23(19.17)	89(74.16)	8(6.67)
11.	Shade management	15(12.5)	101(84.17)	4(3.33)

S. No.	Extent of adoption	Frequency	Percentage
1.	Low (11-17.33)	18	15
2.	Medium (17.33-23.66)	62	51.67
3.	High (23.66-29.99)	40	33.33
	Total	120	100

Analysis:

Association of Socioeconomic character with respect to Adoption behaviour:

S.No.	Characteristics	"r" value
1	Age	0.183NS
2	Religion	0.154*
3	Caste	0.698*
4	Education	0.275*
5	Occupation	0.134*
6	Family type	0.223*
7	House type	0.288*
8	Income	0.139*
9	Land holding	0.173*
10	Possession	0.194*
11	Extension contect	0.048NS

12	Mass media exposure	0.216*
13	Innovativeness	0.312*

* = Significant at p = 0.005   NS = Non Significant

Association between attributes of potato growers and adoption behavior like Age, education, size of land holding, area under potato crops, experience in potato cultivation, family type, cast, farm power, material possession, social participation, annual income, economic motivation, extension participation, mass media exposure, information seeking behavior, innovativeness, were found to be significant with adoption behavior of improved potato production technology. Where a extension contact and age had 'shown non-significant association with adoption behavior of potato growers.

CONCLUSION

About 51.67 percent of the vegetable growers medium adoption of improved potato technology practices. It means medium adopters were more energetic, knowledgeable, dynamic and having more interest in adopting modern vegetable technologies. Middle-aged respondents preferred vegetable cultivation. Higher the education, greater the adoption of commercial vegetable cultivation practices. Those vegetable growers earned more were better adopters of modern production technology and the farmers who had favourable attitude towards vegetable cultivation were better adopters. Regression coefficient of age and extension contact was found to be negative and non- significant for the total sample under study while other attributes like education, occupation, land holding, income were found to be significant.

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