

A Study on Adoption Behaviour of Rainfed Maize Growers in Jammu District of Jammu and Kashmir State*

Maize is used for grain and fodder purpose but it also provides fuel supply to a great extent. It is of special importance in hilly and sub-mountainous regions of Jammu and Kashmir state, where it forms staple diet of the people. It occupies 205.42 thousand hectares constituting 55.10 per cent of the total cultivated area of the state. In spite of the fact that maize occupies a major area during kharif season, the average yield is as low as 18.25 quintals/hectare. The technological gap may be one of the reasons for the low yields when compared to the package yield. However, there are only few studies on technological gap in Jammu and Kashmir, which makes it difficult to generalise to the study area.

It is well known that adoption of Package of Practices by the farmers is a complex phenomenon governed by many factors when farmers are exposed to innovations, they react to those practices from different view point. So, it would be appropriate to study the adoption behaviour and characters influencing it. Keeping in view these aspects, the study was conducted in the year 1998-99 among the kharif maize growers of Jammu district to analyze the personal and socio-economic characteristics of maize growers in relation to their adoption pattern of improved cultivation practices of maize.

The present study was conducted in Akhnoor tehsil of Jammu district in Jammu and Kashmir during 1998-99. The tehsil was purposively selected because it stands first with respect to total area under maize crop in Jammu district. Taking area under maize as the criterion, top six villages of the tehsil were selected. By following random sampling procedures, 25 maize growers (who had cultivated maize in previous year) were selected from each village, making the total sample size of 150 maize growers. To measure the adoption level of maize growers,

eight recommended practices viz., variety, seed rate, seed treatment, sowing time, spacing, organic fertilizers, chemical fertilizers and plant protection measures were selected. After contacting and getting responses from subject matter specialists and extension personnel of Department of Agriculture, Jammu, different weightages were assigned to the selected practices, depending on their importance. Further, in order to be more scientific in determining the adoption level of respondents, partial adoption of practices was also considered (Sakharkar, 1995). The total score obtained by the respondent from all the eight practices was the adoption score of an individual respondent. The independent variables used to know the association with adoption level of maize growers were age, education, land holding, annual income and mass media exposure. The data were collected by personal interview method and analysed using percentage, frequency and zero order correlation.

The findings of the study presented in table 1 revealed that almost all the respondents adopted the recommended time of sowing. The reason that may be attributed to the above findings is, as the study area is rainfed, the recommended time of sowing is before 10th of July and mostly monsoon comes in mid June to mid July. In 1998, the first monsoon rain was on 22nd June and after that enough moisture was there to sow the seed. So, the above finding may be due to the arrival of monsoon in time. It was also observed that more than half of the farmers had adopted the recommended seed rate per acre (62.09%). It might be attributed to the fact that most of the respondents were convinced as to the importance of plant population.

In the present study, it was observed that 74.0 per cent of the respondents had not adopted the recommended variety. The preference of the

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Table 1. Adoption level of improved cultivation practices by maize growers

Sl. No.	Cultivation practices	Levels of adoption							
		As recommended		Less than recommended		More than recommended		Not adopted	
		Freq.	%	Freq.	%	Freq.	%	Freq.	%
1.	Variety	39	26	-	-	-	-	111	74.00
2.	Seed treatments	18	12	-	-	-	-	132	88.00
3.	Seed rate	93	62.00	25	16.66	32	21.33	-	-
4.	Method of sowing								
	Line to line	52	34.66	-	-	-	-	-	-
	Broad casting	98	65.33	-	-	-	-	-	-
5.	Spacing	50	33.33	80	53.33	20	13.33	-	-
6.	Sowing time	148	98.66	-	-	-	-	2	1.33
7.	FYM	41	27.33	80	53.33	18	12.00	11	7.33
8.	Phosphorous	36	24.00	24	16.66	31	20.66	59	39.33
9.	Nitrogen	24	16.00	60	40	45	30.00	21	14
10.	Potash	4	2.66	5	3.33	12	8.0	129	86.00
11.	Top dressing								
	Twice	6	4.00	-	-	11	7.33	114	76.00
	Once	2	1.33	-	-	17	11.33		
12.	Plant protection measures	-	-	-	-	-	-	150	100.00

farm families for local varieties for food preparation because of the taste of the local variety might have prompted the respondents to adopt local varieties than high yielding varieties/hybrids. It was also observed that majority of the respondents (65.33%) had sown the seed by broadcasting method and remaining (34.66%) followed line to line method. The possible reason for this might be the lack of animal power and unavailability of labour at the sowing time. It can be seen from table 1 that very few respondents had treatment as per recommendation (12.0%). The possible reason for this might be lack of knowledge and that the benefit of seed treatment might not be known to these respondents.

The data pertaining to use of FYM and chemical fertilizers revealed that 27.33 per cent

of the respondents adopted FYM as recommended, whereas 53.33 per cent and 12.0 per cent used it, as less than recommended and more than recommended, respectively. Lack of sufficient animal power and unavailability of FYM led to these findings as expressed by many growers. Regarding use of individual nutrients of N, P O and K O it was found that 16.0 per cent of respondent² applied N, 24.0 per cent applied P O and only 2.66 per cent applied K O as recommended while the remaining had not applied fertilizers as per recommendations. Ignorance of the recommended fertilizer dose was one of the main causes as expressed by many respondents. Others complained that fertilizers were not available on time and a few other expressed that they could not afford to buy fertilizers. Cent percent of the respondents had

A Study on Adoption Behaviour

not adopted the plant protection measures. The main reason was due to the fact that none of the respondents had any complaints of disease or insect infestation.

The zero order correlation coefficients were computed for the adoption level of maize growers and the independent variables. Out of 5 variables, 3 variables were found to be significantly related with the adoption. They were education, annual income and mass media exposure. The results revealed that adoption of maize cultivation practices was positively and significantly related with the formal education of the respondents. Education produces desirable changes in the human behaviour. It also breaks the barriers of shyness, inferiority complex etc. It helps the individual to make progress in right direction. These factors might have influenced them to adopt the recommended cultivation practices.

There was positive and significant relationship between annual income and adoption of maize cultivation practices by maize growers. The plausible reason might be, to produce maximum output. It requires use of optimum recommended input like fertilizer and it is quite natural that these inputs are costly than usual traditional ones. Therefore, the farmers with higher income level might have invested on such items and adopted most of the recommended practices. In the present study, it was observed that mass media exposure and adoption level of the respondents had highly significant relationship. The possible reasons for significant relationship might be due to the fact that increased mass media exposure enhances the agricultural information input. Greater participation in mass media sources might have helped the maize growers to understand and analyze the benefits of new technology leading to higher adoption.

Table 2. Relationship between the independent variables and adoption behaviour

Independednt variables	Correlation value 'r'
Age	-0.061NS
Land holding	0.085NS
Annual income	0.207**
Education	0.281**
Mass media exposure	0.313**

NS- Non- significant

** - Significant at 1 per cent level.

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