

A COMPARATIVE STUDY INTO THE ADOPTION OF MAIZE TECHNOLOGY BY THE TRAINED AND COMMON MAIZE GROWERS

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Adoption of agricultural innovations regarding maize cultivation by the trained and common growers of maize in Toba Tek Singh District was investigated. The registered growers (55) of Rufhan Mills were taken as trained growers, whereas, other 55 maize growers were randomly selected from whole of the district as untrained or common maize growers. Thus, there were 110 respondents in total in the study. An analysis of the data collected through an interview schedule disclosed that all the trained farmers had adopted all the innovations except recommended number of irrigations due to shortage of irrigation water. Majority of common growers had not adopted the recommended maize sowing method, fertilizer, plant protection measures, plant spacing and number of irrigations. As a result, the average per acre maize yield obtained by them (21.53 maunds or 803 kgs) was about half of the average per acre yield obtained by the trained growers (39.38 maunds or 1470 kgs). Lack of awareness, interest, finances and non-availability of needed inputs were found to be the main hurdles in the adoption of recommended maize technology by the common (untrained) growers.

INTRODUCTION

Maize (*Zea mays* L.) is grown both for grain and fodder but mostly as a fodder crop. Next to wheat, it is the most important food grain. Being a short duration crop, it fits well in the cropping system and provides good economic returns to the growers in relatively lesser time (Nazir *et al.*, 1985).

In Pakistan, maize is grown on an area covering 807.8 thousand hectares with an annual production of 1027.4 thousand tonnes of grain, giving an average yield of 1272 kgs per hectare (Govt. of Pak. 1985). This is far below the poten-

tial yield of our existing maize varieties. In order to fulfill this gap, the adoption of recommended maize technology by the growers is a fore-most pre-requisite. The explanation given for the gap between agricultural recommendations at the research institutes and what actually takes place at the farmers' fields, is inadequate unless, the possibilities of their adoption by the latter are properly investigated (Monu, 1981). It was observed in Nepal that farmers who were exposed to extension activities were more likely to adopt agricultural innovations than the others (Malla, 1983). The present study was, therefore, designed to compare the adoption patterns of maize technology of the common farmers and the trained ones, in District Toba Tek Singh (Punjab) with the purpose to find out the training needs of the common growers of maize crop in the study area.

MATERIAL AND METHODS

Ruffan Maize Products Co. Faisalabad, plays an important role in increasing maize production by providing the latest maize growing technology to the registered growers through their educational and training programmes. The registered maize growers of Toba Tek Singh District totalling 55 in number were taken as trained growers. However, the selection of other 55 common farmers (maize growers who were assumed as untrained ones, was done randomly from the same area to make the comparison about their adoption behaviour, their per acre yields, and factors thereof. Thus, there were 110 maize growers in total who were included in the survey sample of this study. The data were tabulated, analysed and interpreted by using arithmetic means and simple percentages*.

RESULTS AND DISCUSSION

The data regarding the adoption of recommended practices for the maize crop indicate that majority of the innovations were adopted by the trained growers, whereas, some of these innovations were not adopted by the majority of common or untrained growers. The recommendations regarding land preparation and seed rate were adopted by more than seventy percent of the common growers and hundred percent of the trained growers. All the growers of both the groups (trained and common growers) had sown recommended maize varieties, i.e., 786-R, Nelum, and Akbar. It was further revealed that all of the trained growers and only 32.73 percent of common growers applied the reco-

* The basic data were collected in the Agri. Ext. Res. Study by Ahmad and Khan. (1)

Table 1. *Agricultural recommendations' adoption comparison between trained and common untrained maize growers*

Recommendation	Adoption by trained growers		Adoption by common growers					
	Adopted	Not Adopted	Adopted	Not Adopted				
	No. of Respon- dents	Percent- age	No. of Respon- dents	Percent- age	No. of Respon- dents	Percent- age		
4—6 ploughings	55	100	—	—	47	84.45	8	15.55
2—3 Plankings	55	100	—	—	49	89.09	6	10.91
Varieties (786 R, Nelum and Akbar)	55	100	—	—	55	100.00	—	—
14—16 Kgs seed per acre	55	100	—	—	40	72.72	15	27.28
Sowing time (10 Feb. to 7 March for spacing crop. 15 July to 7 Aug. for Kharif crop).	55	100	—	—	55	100	—	—
Sowing method (by Kharif Drill)	55	100	—	—	21	38.18	34	61.82
Fertilizer	55	100	—	—	18	32.73	37	67.27
Plant protection Measures	55	100	—	—	6	10.91	49	89.09
Plant spring (P-P : 7-9' & R.R. 2-2½')	55	100	—	—	18	32.73	37	67.27
No. of irrigations (10-12 for spring crop 6-8 for Kharif crop)	43	78.18	12	21.82	18	32.73	37	67.27

mmended doses of recommended fertilizer to the maize crop. Recommendations regarding plant protection measures (Basudin EC for shoot fly, Diazenon for stem borer and Dimcron for white Jassid), sowing method (with the help of Kharif Drill) and plant spacing (7-9 inches for plant to plant and 2-2½ feet for row to row) were adopted by hundred percent of the trained growers and 10.91% 38.18% and 32.73% respectively of the common growers. It was the recommended number of irrigations (10-12 for spring crop and 6-8 for Kharif crop) which were not adopted even by 21.82% of the trained growers and a majority (67.21%) of the common growers (Table 1). These findings are quite in accord with those of Malla (1983) and Khan (1969).

In the result of the adoption of improved maize technology there was found to be a significant difference in the average per acre yields obtained by common growers and trained growers. The data regarding per acre maize yield are shown in Table 2 (a) and Table 2 (b).

Table 2 (a) *Per acre yield obtained by common growers*

Yield (Maunds)	Central value (x)	No. of Respondents (f)	Percentage (fx)	
18 - 22	20	34	61.82	680
22 - 26	24	21	38.18	504
		Ef = 55	Efx = 1184	
$A.M. = \frac{Efx}{Ef} = \frac{1184}{55} = 21.53 \text{ Maunds}$				

Table 2 (b) *Per acre yield obtained by trained growers*

Yield (Maunds)	Central value (x)	No. of Respondents (f)	Percentage	Fx
36 - 40	38	43	78.18	1634
40 - 44	42	7	12.73	294
44 - 48	46	3	5.45	138
48 - 52	50	2	3.64	100
		Ef 55	Efx = 2166	

A. M. = $\frac{Efx}{Ef}$		=	$\frac{2166}{55}$	= 39.38 Maunds
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Table 2 (a) and 2 (b) depict that the average per acre maize yield obtained by the trained growers (39.38 Maunds or 1470 kgs) was nearly double of that obtained by common growers (21.53 Maunds or 803 kgs). There was the same ratio in the per acre maximum yield obtained by trained growers (51 Maunds or 1903 kgs) and that of common growers (25 Maunds or 933 kgs). A large majority (78.18%) of the trained growers obtained maize yield from 36 to 40 Maunds per acre, whereas, a simple majority (61.82%) of the common growers obtained maize yield from 18 to 22 Maunds per acre.

The common growers were asked about the reasons for the non-adoption of improved maize technology. Their responses have been tabulated in Table 3.

Table 3. *Reasons for the non-adoption of recommendations regarding maize cultivation as given by common growers*

Reason for Non-Adoption	No. of Respondents Giving it	Percentage
Lack of awareness	39	70.91
Lack of interest in adoption	2	3.64
Non-availability of needed inputs	16	29.09
Lack of finances	16	29.09

Table 3 indicates that the main reason for the non-adoption of improved maize technology was lack of awareness of the growers about the recommended practices as reported by 70.91 percent of the common growers. A few (3.64%) of the respondents were found to be not interested in adopting the recommendations. In addition, non-availability of needed inputs and lack of proper financial facilities were also noted to be important hurdles in the adoption of improved maize technology. Similar results were obtained by Khan (1965).

It is concluded that a large majority of the farmers is not obtaining the maize yield upto the desired standards even in this era of modern technology due to the non-odoption of agricultural recommendations and the main reason for the non-adoption being lack of awareness about them. So, it is the need of the time that a considerable attention be paid to educate the farmers at large regarding the recommended agricultural practices. Seeing this situation from an other angle, it appeals to the mind that the working of Agriculture Depart-

ment (Extension) as a whole needs monitoring and evaluation, re-planning and the strengthening of its extension programmes as the Department is mainly responsible for the education of the farmers in general.

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