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ADOPTION OF IMPROVED MAIZE CULTIVATION PRACTICES BY TRAINED AND UNTRAINED FARMERS OF KVK, UDAIPUR

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ABSTRACT

The study was conducted in four villages of three Panchayat Samities of Udaipur district by interviewing 160 maize growers. Only 20.00 per cent farmers were high adopters, 34.37 per cent farmers were medium level adopters and 45.63 per cent farmers were in the category of low adopters of maize cultivation practices. Respondents had very good adoption level regarding time of sowing and field preparation with 74.37, 71.87, MPS respectively. They had good amount of adoption level of regarding practices like harvesting, threshing & storage, irrigation management, seed rate & spacing, high yielding varieties with 67.75, 59.37, 50.93 and 50.31 MPS respectively. They possessed low adoption level regarding, fertilizer application, inter cropping, seed treatment and weed management. The least adoption was found in plant protection measures.

INTRODUCTION

Maize is most important cereal crop and knows as queen of cereal due to un-parallel productivity among cereal crops. In India, maize occupies third position both in area and production after rice and wheat. In Rajasthan it is grown on 1 million hectare area with production 1.1 million tonnes and productivity of 1,100 kg/ha. Udaipur district of Rajasthan has covered 1, 73,614 lakh hectares of land. However, the production of maize in the district is very low as compared to average national productivity (2,435 kg/ ha.). The productivity of maize per unit area can be increasing by adopting recommended scientific and sustainable management practices. Taking into account the above consideration, trainings were conducted by KVK, Udaipur on maize cultivation for enhancing productivity of maize. Keeping in mind the importance of trainings conducted by Krishi Vigyan Kendra, Udaipur. The study entitled 'Adoption of improved maize cultivation practices by trained and untrained farmers of KVK, Udaipur' was undertaken with the following specific objectives.

1. To assess the extent of adoption of improved maize cultivation by trained and untrained maize growers.
2. To study the practice wise comparison of extent of adoption of trained and untrained maize growers.

RESEARCH METHODOLOGY

The study was conducted in four villages of three Panchayat Samities namely Girwa, Dhariyavad, and Kherwara in Udaipur district of Rajasthan where training was conducted by the Krishi Vigyan Kendra Udaipur. From each village 20 farmers who had participated in training were selected randomly. Thus total 80 trained farmers were interviewed. Equal number i.e. 80 maize growers from adjoining villages were interviewed as untrained respondents. Thus total sample size comprised of 160 respondents were interviewed with specially designed interview schedule. Personal interview method was used for data collection. The data were analyzed by using suitable statistical tools like frequency, mean, standard deviation, 'Z' test and rank correlation.

RESULTS AND DISCUSSION

The results and discussion is presented under following heads.

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1. Level of adoption of improved maize cultivation by trained and untrained maize growers.

The results regarding the extent of adoption of maize cultivation practices are presented here under in Table 1 and 2. The range of adoption score obtained by trained and untrained respondents were found wide spread. In order to have a closer look, the range of score was divided into three categories and data were reset to find out the frequency and percentage in each category.

Table 1. Distribution of respondents according to their extent of adoption

S. No.	Extent of adoption	Trained (n=80)		Un trained (n=80)		Pooled(n=160)	
		f	%	f	%	f	%
1.	Low (below31 score)	25	31.25	48	60.00	73	45.63
2.	Medium (31-67 score)	28	35.00	27	33.75	55	34.37
3.	High (above 67 score)	27	33.75	5	6.25	32	20.00
	Overall	**80**	**100**	**80**	**100**	**160**	**100**

f = frequency % = Percentage

From table 1, it is revealed that only 20.00 per cent farmers were high adopters, 34.37 per cent farmers were medium level adopters and 45.63 per cent farmers were in the category of low adopters of maize cultivation practices. In case of trained respondents almost equal member was found among three categories i.e. low, medium and high level of adoption group with 31.25 per cent, 35.00 per cent and 33.75 per cent respectively. Further, in case untrained farmers, majority 60.00 per cent of the respondents belonged to low adoption category followed by medium adoption level 33.75 per cent. Only 6.25 per cent untrained respondents were found with high level of adoption about maize cultivation practices. The findings were similar with finding of Geengar (2006) and Intodia, S. L. and Bareth, L. S. (1999).

1.1 The extent of adoption of maize cultivation practices among trained and untrained respondents

From table 2 it is observed that respondents had very good adoption level regarding time of sowing and field preparation with 74.37, 71.87, MPS respectively. They had good amount of adoption level regarding practices like harvesting, threshing & storage, irrigation management, seed rate & spacing, high yielding varieties with 67.75, 59.37, 50.93 and 50.31 MPS respectively. They possessed low adoption level regarding, fertilizer application, inter cropping, seed treatment and weed management. The least adoption was found in plant protection measures.

It is also seen that trained respondents had very good adoption level regarding practices like field preparation, and time of sowing with 80.41, 75.75 MPS respectively. Respondents had good adoption level regarding harvesting, threshing & storage, irrigation management, seed rate & spacing, high yielding varieties, inter cropping and fertilizer application respectively. They had low adoption level of seed treatment, weed management and plant protection measures. In case of untrained respondents, they possessed very good adoption level regarding time of sowing with 73.00 MPS. They possessed good adoption level regarding harvesting, threshing & storage, field preparation and irrigation management, with 67.25, 63.33 and 53.12 MPS respectively. They had low adoption level regarding high yielding varieties, fertilizer application, seed rate & spacing, inter cropping, seed treatment and weed management. The least adoption was found in plant protection measures.

The overall extent of adoption level for maize cultivation practices by the trained and untrained farmers were 58.31 and 45.04 MPS, respectively.

The value of calculated rank order correlation (rs) was 0.94 which is positive and highly significant, leading to conclusion that there was rank correlation with extent of adoption of improved maize cultivation practices between the trained and untrained farmers, though there were difference in magnitude of MPS of trained and untrained respondents.

2. Practice wise comparison of extent of adoption between trained and untrained respondents about practices of maize cultivation

It is clear from the data in table 3 show that calculated 'Z' value was higher than the tabulated value at 5 and 1 per cent level of significance in all

the nine packages of practices of maize cultivation except two practices viz., time of sowing and harvesting, threshing & storage. This call for rejection of null hypothesis and acceptance of alternative hypothesis leading to conclusion that there is significant difference in level of adoption between trained and untrained respondents regarding all the practices of maize cultivation practices recommended in the study area.

Table 2. Extent of adoption of maize cultivation practices among trained and untrained respondents

S.No.	Package of practices	Trained (n = 80)		Untrained (n = 80)		Pooled (n = 160)	
		MPS	Rank	MPS	Rank	MPS	Rank
1.	Field preparation	80.41	1	63.33	3	71.87	2
2.	High yielding varieties	57.50	6	43.12	5	50.31	6
3.	Inter cropping	55.00	7	36.25	8	45.62	8
4.	Seed treatment	49.37	9	30.62	9	39.99	9
5.	Time of sowing	75.75	2	73.00	1	74.37	1
6.	Seed rate & spacing	62.18	5	39.68	7	50.93	5
7.	Fertilizer application	52.18	8	41.25	6	46.71	7
8.	Irrigation management	65.62	4	53.12	4	59.37	4
9.	Weed management	41.25	10	26.66	10	33.95	10
10.	Plant protection measures	33.95	11	21.25	11	27.60	11
11.	Harvesting, threshing & storage	68.25	3	67.25	2	67.75	3
	Overall	**58.31**		**45.04**		**51.67**	

r_s = Rank correlation; ** = Significant at 1% level of significant

$r_s = 0.94^{**}$
$t = 5.79$

The overall calculated 'Z' value was also greater than that of its tabulated value. This indicates that there was significant difference between the overall adoptions of maize cultivation practices between trained and untrained respondents.

Thus, this is proved evidently that the adoption of maize cultivation practices was more among trained farmers compared to untrained farmers. The significant difference between trained and untrained farmers about adoption of maize cultivation practices in the study was not unexpected. It may be due to the fact that trained farmers being in continuous touch with the K.V.K. personnel's might have acquired sufficient skills pertaining to maize cultivation practices. Thus they are more likely to practice the learnt skills in their fields. The findings were similar with findings of Khade et al. (1998) and Patel et al. (2003).

Table 3. Comparison of extent of adoption between trained and untrained farmers with regard to different package of practices of maize cultivation

S. No.	Package of practices	Trained (n=80)		Un trained (n=80)		'Z' value
		Mean ±	S.D.	Mean ±	S.D.	
1.	Field preparation	7.23	1.76	5.70	2.55	4.50**
2.	High yielding varieties	3.45	2.08	2.58	1.03	3.48**
3.	Inter cropping	1.65	1.50	1.08	1.45	2.47*
4.	Seed treatment	2.96	2.54	1.83	2.31	2.97**
5.	Time of sowing	2.25	1.32	2.21	1.30	0.20^{NS}
6.	Seed rate & spacing	7.46	2.74	4.76	2.55	6.58**
7.	Fertilizer application	6.26	2.70	4.96	3.20	2.82**
8.	Irrigation management	3.93	1.62	3.18	2.44	2.34*
9.	Weed management	3.71	2.14	2.40	1.68	4.36**
10.	Plant protection measures	5.96	3.61	3.82	2.65	8.91**
11.	Harvesting, threshing & storage	10.23	3.04	10.08	2.35	0.35^{NS}
	Overall	**5.00**	**2.23**	**3.87**	**2.13**	**3.54****

NS = Non-Significant, * = Significant at 5% level of significance, ** = Significant at 1% level of significance

CONCLUSION

Majority of maize growers were in low adoption group followed by medium and high adoption group, respectively. More number of trained farmers fell in high adoption group as compare to untrained farmers. High adoption level of trained and untrained farmers was found in the practices like field preparation and time of sowing. Minimum adoption was found in weed management and plant protection measures. There was correlation between ranks given to adoption of various package of practices of maize cultivation by the trained and untrained. There was significant difference in the extent of adoption of maize cultivation practices between trained and untrained respondents. Looking to the above conclusions the study implies that concerned organization should take action in improving adoption both categories of respondents.

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