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KNOWLEDGE AND ADOPTION OF MAIZE PRODUCTION TECHNOLOGY BY THE FARMERS

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ABSTRACT

Maize is the important cereal grown is the zone iv b and of occupies more than 50% of total geographical area of zone. Despite all efforts of technological dissemination the expected result could not be achieved, therefore, in this study extent of knowledge and adoption of maize production technologies have been studied in two categories of farmers those were benefited in TOT programme either through government agencies or non government called beneficiary farmers and other hand those who were not benefited called non beneficiary farmers. It is found that there was significant difference in the knowledge as well as adoption level between beneficiary and non beneficiary farmers. Further observed that knowledge about improved varieties of maize was higher in case of beneficiary farmers, on other hand knowledge of recommended spacing was better arrange non beneficiary farmers. While knowledge and adoption of plant protection measures was very poor in both category of farmers.

INTRODUCTION

Rajasthan is the largest state of the Indian Union with the geographical area of 3.42 lac sq. km. Due to the vast diversity in agro-climatic condition and in order to cater to the location specific need of agricultural research, the state has been classified into ten distinct agroclimatic zone. This Humid Southern Plain Zone lies in southeastern physiographic region, comprising only 5 per cent geographical area of Rajasthan. Maize is the important cereal grown in the zone in both of area and production. This is absolutely rainfed crop occupying more than 90 per cent area under this condition. During 2003-04 it has occupied 2.90 lac ha which is 26.20 per cent maize area of the state.

There is doubt that the State Agricultural University with its vast network of Research Station in different agro- climatic zones is involved in generation of location specific technologies for the farmers. The intensive efforts of research

Scientists have resulted into development of improved varieties of different crops which has much higher production potential as compared to the local one. Similarly, the extension scientists of KVK's and field functionaries working under Broad Based Agriculture Extension System are actively engaged in dissemination of technologies among the farming community in the state. Despite the efforts of research and extension, the expected results in crop productivity could not be achieved leading exists vast gap in productivity between the highest yield recorded at the research farm and those representing the mean performance in the zone. This is basically due to non-adoption of technologies by the farmers. Keeping this point in view, the study was conducted with following specific objectivists to find out the extent of knowledge and adoption of improved maize production technologies by the farmers.

RESEARCH METHODOLOGY

The present study was conducted in agro-climatic zone IV b of Rajasthan. Out of 20 panchayat samities of zone IV b, three panachayat samities namely, Ghatol, Banswara and Bagidora were selected on the basis of maximum area under selected crop variety. Further, three villages from each identified panchayat samiti were selected on the basis of maximum TOT work carried out by the

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extension agencies. For the selection of respondents, a list of beneficiaries who have been benefited under TOT programme either by government or non government agencies from each village was prepared with the help of personnel of disseminating agencies. Thereafter, 100 beneficiaries were selected villages A simple of 50 non beneficiary farmers was also selected who have not been benefited under TOT programmes. The data were gathered by pre-tested structural schedule with the help of interview method. Then data were analyzed, tabulated an results were interpreted in the light of objective of study.

RESULTS AND DISCUSSION

To get an overview of level of knowledge and adoption about improved maize production technologies, the respondents were categorized into three groups on the basis of mea score and standard deviation of the knowledge and adoption score. The results of the same have been presented in Table 1.

Table 1. Categorization of beneficiary and non-beneficiary farmers on the basis of knowledge and adoption of maize production technologies

S. No.	Category	Beneficiary				Non beneficiary farmers			
		Knowledge		Adoption		Knowledge		Adoption	
		f	%	f	%	f	%	f	%
1.	Low	32	32.00	36	36.00	17	34.00	17	34.00
2.	Medium	38	38.00	44	44.00	25	50.00	24	48.00
3.	High	30	30.00	20	20.00	8	16.00	9	18.00
	Total	**100**	**100.00**	**100**	**100.00**	**50**	**100.00**	**50**	**100.00**

f = Frequency, % = per cent

Data presented in Table 1 reveal that majority of beneficiary respondents possessed medium level of knowledge about maize production technologies. Whereas, 32 per cent beneficiaries had low level of knowledge and 30 per cent farmers possessed high level of knowledge about improved maize cultivation technologies. In case of non-beneficiaries, 50 34 and 16 per cent respondents were found in medium, low and high knowledge group, respectively.

Further analysis of the table shows that 44 per cent beneficiary respondents were reported in medium adoption group, 36 per cent were found in low adoption category, while 20 per cent beneficiary farmers had high level of adoption about maize production technologies. In case of non-beneficiary farmers 48, 34 and 18 per cent farmers were found in medium, low and high level of adoption.

A critical examination of Table 2 reveals that beneficiary farmers of Humid Southern Plain Zone IV b were having highest knowledge about improved variety of maize among the various recommended maize production technologies, followed by manure and fertilizers application. The non-beneficiaries farmers knew more about recommended spacing following by seed rate. The extent of knowledge was least about seed treatment among beneficiaries where as non beneficiaries know least about plant protection measures. The overall average knowledge of beneficiary farmers (MPS 70.74) of the zone was much higher than non beneficiary farmers (MPS 48.12).

The above table further reveals that out of the various recommended maize production technologies beneficiary farmers of the zone adopted seed rate on first priority following by weeding and hoeing and improved variety, while non-beneficiary farmer had highest adoption about weeding and hoeing practices following by sowing time and recommended spacing. The overall average adoption of various recommended maize production technologies among the beneficiary farmers (MPS 56.91) was much higher than the non beneficiary farmers (MPS 30.19).

The perusal of Table 2 further reveals that recommended maize production technologies, beneficiary farmers of zone IV b were having maximum knowledge about improved varieties but their adoption was highest in seed rate. Their knowledge and adoption was greatly varying in manure and fertilizers application. There was big

gap between extent of knowledge (MPS 70.74) and level of adoption (MPS 56.91) of recommended maize production technologies by the beneficiary farmers of the zone.

Table 2. Knowledge and adoption of Maize production technologies among farmers of Humid Southern plain zone IV b

S. No.	Crop Production technologies	Beneficiary farmers(n=100)				Non-beneficiary farmers(n=50)			
		Knowledge		Adoption		Knowledge		Adoption	
		MPS	Rank	MPS	Rank	MPS	Rank	MPS	Rank
1.	Improved Variety	86.41	1	68.35	3	55.25	4	30.83	7
2.	Seed rate	79.92	3	72.94	1	58.63	2	32.77	6
3.	Soil treatment	62.96	9	48.26	8	36.36	10	22.51	8
4.	Seed treatment	44.14	11	31.36	10	38.26	9	18.46	10
5.	Sowing time	78.01	5	68.03	4	54.77	5	40.93	2
6.	Recommended spacing	78.90	4	64.58	5	63.56	1	39.83	3
7.	Manure & fertilizers	80.84	2	61.99	7	43.76	7	21.92	9
8.	Weeding & hoeing	75.51	6	70.04	2	47.18	8	40.94	1
9.	Plant Protection Meansures	44.62	10	29.74	11	28.48	11	10.68	11
10.	Irrigation Management	70.67	8	47.52	9	56.16	3	38.18	5
11.	Harvesting, storage and marting	74.15	7	63.30	6	52.05	6	38.82	4
	Average	**70.74**		**56.91**		**48.12**		**30.19**	

Note: r_s between extent of knowledge of beneficiary and non-beneficiary farmers was 0.663* (significant at 5% level of significance)

r_s between level of adoption of beneficiary and non-beneficiary farmers was 0.663* (significant at 5% level of significance)

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The further reveals that among non-beneficiary farmers of zone IV b were having maximum knowledge about recommended specing but having highest adoption of weeding & hoeing aspect among maize production technologies. On the other hand, their knowledge and adoption was least towards plant protection measures. It is surprising that knowledge of non-beneficiary respondents about weeding and hoeing was ranked at eighth position. The overall extent of knowledge (MPS 48.12) of non beneficiary farmers of the zone about weeding and hoeing was ranked at eighth position. The overall average extent of knowledge (MPS 48.12) of non-beneficiary farmers of the zone about recommended maize production technologies was quite higher than their level of adoption (MPS 30.19). Which indicates a scope for more adoption in future. Findings are similar to the findings reported by Singh (1968) and Pandey (1989)

The calculated value of r (0.663) between ranks of extent of knowledge about recommended maize production technologies of beneficiary and non beneficiary farmers of Humid Southern plain zone IV was found significant at 5 per cent level of significance. Inference therefore, can be drawn that rank assigned to extent of knowledge about various recommended technologies of maize among beneficiary and non beneficiary respondents was similar.

Further it was observed that value of r (0.663) between ranks of level of adoption of recommended maize production technologies of beneficiary and non-beneficiary farmers of Humid Southern plain zone IV b was found non-signification at 5 per cent level of significance. It can be inferred that ranks assigned to different recommended technologies of maize among beneficiary and non beneficiary respondents was not similar.

Data in Table 3 reveal that calculated values of Z (15.46 and 10.24. respectively) for comparison of mean extent of knowledge and adoption between beneficiary and non beneficiary farmers of zone IV b about recommended maize production technologies are significant at 1 per cent of significance. Inferences therefore can be drawn that mean extent of knowledge and adoption of beneficiary farmers about recommended crop production technologies of maize was significantly higher than non beneficiary farmers. The above

finding are similar to Singh (1999) and Chandawat (2002).

Table 3. Comparison of knowledge and adoption about recommended production technologies of maize between beneficiary and non beneficiary farmers of zone IV b

Aspect	Mean score		Standard deviation		'Z' value
	Beneficiary farmers	Non-beneficiary farmers	Beneficiary farmers	Non-beneficiary farmers	
Knowledge	42.34	23.59	8.52	6.12	15.46
Adoption	34.15	17.89	9.21	6.10	10.24

Significant at 1 per cent level.

CONCLUSION

From the above discussion it can concluded that the beneficiary farmers of maize crop had highest existing knowledge about improved varieties (MPS 86.41) whereas their adoption was highest in case of seed rate application. It was also found that the existing knowledge of non-beneficiary farmers was highest for recommended spacing whereas, the extent of adoption was highest for weeding and hoeing practices. Further, it was observed that the over all existing knowledge and adoption of beneficiary respondests about recommended maize technologies was higher as compared to non-beneficiaries.

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