KNOWLEDGE OF FARMERS ABOUT IMPROVED RABI MAIZE PRODUCTION TECHNOLOGY IN BANSWARA DISTRICT OF RAJASTHAN

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ABSTRACT

Maize is the third most important cereal crop of world. It is a principal staple food in many countries particularly in the tropics and subtropics it is widely cultivated throughout the world. There are total five tehsils in Banswara district, out of which two tehsils namely, Banswara and Ghatol were selected on the basis of maximum area under rabi maize cultivation. Eight villages from two identified tehsils were selected on the basis of maximum area under rabi maize cultivation. For selection of respondents, 120 rabi maize growers (40 marginal, 40 small and 40 large farmers) were randomly selected from identified village for data collection.

The study revealed that 28.33 percent of the total respondents possessed in medium level of knowledge while, 15.00 and 56.67 percent rabi maize growers had low and high level of knowledge about rabi maize production technology. It was further observed that the extent of knowledge among marginal farmers was from 25.00 to 76.88 percent. Whereas in case of small farmers and large farmers it was from 35.00 to 87.50 and 45.00to 88.75 percent in all the practices of rabi maize production, respectively. There existed a difference among marginal, small and large with respect to knowledge about rabi maize production technology.

INTRODUCTION

Maize is the third most important cereal crop of world. It is a principal staple food in many countries particularly in the tropics and subtropics it is widely cultivated throughout the world, and a greater weight of maize is produced each year than only other grain. The United States produced 40 per cent of the world's harvest; other top producing countries include China, Brazil, Mexico, Indonesia, India, France and Argentina. Maize is regarded as the "Queen of Cereals". Being a C_4 plant, it utilizes solar radiation more efficiently even at higher radiation intensity. In general, it has greater worldwide significance as human food, animal feed and a source of large number of industrial products. In Indian agriculture, maize assumes a special significance on account of its utilization as food, feed and fodder besides several industrial uses. Maize is cultivated in diverse production environments ranging from Temperate Hill Zone of Himachal Pradesh to the Semi- arid Region of Rajasthan. It is the versatile crop that adapt easily to a wide range of production environments and fits well in the existing cropping systems of India. Being a source of diversified products obtained from industrial inputs, such as starch, corn oil; glucose etc., the demand of maize crop has been constantly mounting. Maize grain has elevated nutritive value as it contains about 72% starch, 10% protein, 4.8% oil, 5.8% fiber and 3.0% sugar.

RESEARCH METHODOLGOY

The present study was conducted in the purposely selected Banswara district of Rajasthan. There are total five tehsils in Banswara district of Rajasthan, out of which, two tehsils namely Banswara and Ghatol were selected on the basis of maximum area under cultivation of rabi maize Further, a comprehensive list of all the major rabi maize growing villages was prepared in consultation with the personnel of Revenue and Agriculture Department from the identified tehsils. Four villages from each selected tehsil were taken on the basis of maximum area under rabi maize cultivation. Thus, total eight villages were selected for the present investigation. For selection of respon-

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dents, comprehensive list of rabi maize growers was prepared with the help of village patwari and agriculture supervisor of respective villages. From the list so prepared, 5 marginal, 5 small and 5 large growers were selected randomly from each identified village. Thus, in all 120 farmers (40 marginal, 40 small and 40 large farmers) were included in the sample of the study.

RESULTS AND DISCUSSION

Knowledge of farmers about improved rabi maize production technology

This part of chapter deals with existing knowledge of farmers about rabi maize production technology. Knowledge as a body of understood information possessed by an individual is one of the important components of behavior and plays an important role in adoption of an innovation. Keeping this view in mind, the level of knowledge of farmers about improved rabi maize production technology was assessed. The results are presented in subsequent Tables.

Distribution of respondents according to their knowledge about rabi maize production technology

To get an overview of the knowledge level, the respondents were grouped into (i) low (< 77.27), (ii) medium (77.27 to 82.89) and (iii) high (> 82.89) knowledge level on the basis of calculated mean and standard deviation of the obtained knowledge scores. The distribution of respondents in each category is given in table 1.

Table 1: Distribution of respondents on the basis of level of knowledge about rabi maize production technology   **n =120**

S. No.	Knowledge level		Marginal farmers		Small farmers		Large farmers		Total	
			f	%	f	%	f	%	f	%
1	Low	(<77.27)	9	22.50	5	12.50	4	10.00	18	15.00
2	Medium	(77.27 to 82.89)	23	57.50	7	17.50	4	10.00	34	28.33
3	High	(>82.89)	8	20.00	28	70.00	32	80.00	68	56.67
	Total	**40**	**100.00**	**40**	**100.0**	**40**	**100.0**	**120**	**100.0**	

f = Frequency, % = per cent

The data in table 11 reveal that out of 120 respondents, majority of respondents 56.67 per cent fell in high level knowledge group whereas, 28.33 per cent maize growers were observed in the medium level knowledge group and remaining 15 per cent respondents possessed low level of knowledge about improved rabi maize cultivation technology.

Further analysis of data in table indicates that 20.00 per cent marginal farmers, 70.00 per cent small farmers and 80 per cent large farmers had high level of knowledge about improved rabi maize cultivation technology. Whereas, 57.50, 17.50 and 10.0 per cent marginal, small and large farmers possessed medium level of knowledge about improved rabi maize cultivation technology respectively. On the other hand, 22.50 per cent marginal farmers, 12.50 per cent small farmers and 10.0 per cent large farmers were kept in the low level of knowledge group as they had poor knowledge about improved rabi maize cultivation technology.

14.16 per cent and 20.00 per cent of beneficiaries and non-beneficiaries had low knowledge level. Only 16.67 per cent beneficiaries and 14.17 per cent non-beneficiaries had high knowledge level about maize production technology.

Extent of knowledge of farmers about improved rabi maize cultivation Technology

The data presented in table 2 shows that small farmers of the study area possessed 87.50 per cent of knowledge about soil and field preparation aspect of rabi maize production technology whereas, knowledge of marginal and large farmers about this practice was comparatively less with 69.58 per cent and 83.75 per cent. The knowledge about soil treatment, it was noted that marginal, small and large had knowledge 50.0, 35.0 and 45.0 per cent respectively. Majority of the respondents were not aware of chemicals

Table 2: Extent of knowledge of farmers about improved rabi maize cultivation practices   **n=120**

S. No	Aspect/ Practices	Marginal farmers		Small farmers		Large farmers		Total	
		MPS	Rank	MPS	Rank	MPS	Rank	MPS	Rank
1.	Soil and field preparation	69.58	iv	87.50	i	83.75	iv	80.28	Ii
2.	Soil treatment	50.00	x	35.00	x	45.00	xi	43.33	X
3.	High yielding varieties	66.42	v	77.00	iii	79.58	v	74.36	V
4.	Seed treatment	25.00	xi	27.50	xi	46.67	x	33.06	Xi
5.	Time of sowing	75.28	ii	85.83	ii	87.50	ii	82.87	I
6.	Seed rate & spacing	76.88	i	74.38	iv	88.75	i	80.00	iii
7.	Fertilizer application	51.25	viii	55.36	ix	55.89	ix	54.17	ix
8.	Irrigation management	50.83	ix	57.50	viii	59.17	viii	55.83	viii
9.	Weed management	70.50	iii	73.75	vi	85.00	iii	76.42	iv
10.	Plant protection measures	62.69	vi	66.67	vii	76.30	vi	68.55	vi
11.	Harvesting, threshing & storage	58.96	vii	73.33	v	69.79	vii	67.36	vii

MPS = Mean per cent score,

used for the soil treatment for killing termites in their fields in small group of farmers.

Further, analysis of table shows the marginal, small and large farmers had extent of knowledge about seed treatment was 25.0, 27.50 and 46.67 MPS respectively. The knowledge about time of sowing, it was found that 87.50, 85.83 and 75.28 per cent knowledge was recorded in large, small and marginal farmers and ranked second by marginal, small and large farmers respectively.

Regarding knowledge about seed rate and spacing, it was noted that marginal, small and large farmers had 76.88, 74.38 and 88.75 per cent extent of knowledge respectively. Majority of the respondents from all categories of farmers had fully knowledge about recommended seed rate 20 – 25 kg/ha and plant to plant distance 25 cm and row to row distance 60 cm is the most appropriate spacing for rabi maize. In case of fertilizers application, marginal, small and large farmers had 51.25, 55.36 and 55.89 per cent knowledge and ranked ninth by small, large and eight by marginal farmers respectively. Whereas, in case of irrigation management, marginal, small and large farmers had 50.83, 57.50 and 59.17 per cent knowledge and ranked eight by small and large farmers and ninth by marginal farmers respectively.

Regarding knowledge about weed management practice was placed at third rank by marginal farmers

and large farmers, sixth rank by small farmers with 70.50, 73.75 and 85.00 MPS respectively. The knowledge about quantity of chemicals used in weed management was observed poor in the study area.

Regarding knowledge about plant protection measures, it was found that marginal, small and large farmers had knowledge 62.69, 66.67 and 76.30 per cent respectively. Table clearly shows that all the category of farmers had high knowledge about plant protection measures and this aspect ranked sixth by marginal and large farmers, seventh by small farmers. It means that rabi maize growers were acquainted with plant protection measures, they have fair knowledge about insect-pest of rabi maize in comparison with chemicals quantity used to control them. At last the knowledge about harvesting, threshing and storage, it was found that 58.96, 73.33 and 69.79 per cent was recorded in marginal, small and large farmers respectively. The knowledge about this aspect at seventh ranked by the marginal and large farmers, fifth rank by small farmers respectively.

Thus, from the above discussion, it could be concluded that the extent of knowledge in marginal farmers was 25.0 to 76.88 per cent, in small farmers it was from 35.0 to 87.50 per cent, whereas in case of large farmers the extent of knowledge was observed to be from 45.0 to 88.75 per cent in all the improved practices of rabi maize cultivation technology. Fur-

ther, it was concluded that large farmers had more knowledge than small and marginal farmers about all the rabi maize cultivation practices in the study area.

Comparison of knowledge among marginal, small and large farmers about improved rabi maize production technology

To find out the significance of difference among the marginal, small and large farmers with respect to knowledge about improved rabi maize production technology, analysis of variance test (f test) was applied. The results are presented in table 3.

Table 3: Comparison of knowledge among marginal, small and large farmers about rabi maize production practices   n=120

Source of variation	d.f.	SS	MSS	'F' Value
Between the categories of farmers	2	1209.85	604.85	15.71**
Error	117	4503.07	38.48	
Total	119	5712.79		

**Significant at 1 per cent level of significance.

Mean value Table

S. No.	Categories of farmers	Mean value	CD	SEm
1.2.3.	Marginal farmersSmall farmersLarge farmers	78.1381.8585.90	0.57	0.15

The data recorded in table 3 shows that calculated 'F' value 15.71 is higher than tabulated value at 1 per cent level of significance. Thus, the hypothesis (NH_{01}) is rejected and alternative hypothesis which stated that "there is a difference among marginal, small and large farmers with respect to knowledge about improved rabi maize production technology" was accepted. It infers that there was a significant difference in knowledge among marginal, small and large farmers about rabi maize production technology. By comparing the mean value with critical difference (C.D.) value, it was found that there was a difference between large and small, and marginal, large and marginal farmers about knowledge of improved rabi maize production technology. This reveals that large farmers possessed more knowledge than marginal and small farmers about rabi maize production technology. Higher knowledge of large farmers about improved practices of rabi maize cultivation was not unexpected. The large farmers of the study area had contacts with scientists of Krishi Vigyan Kendra located in the district. Furthermore they have better mass media exposure and cosmopolitan outlook due to higher socio-economic status which might have contributed in increasing the knowledge of this category in comparison to others.

CONCLUSION

From the above results it may be concluded that overall more than half of the respondents was having high level of knowledge about rabi maize production technology. Practice wise analysis indicated that the respondents were having insight knowledge about time of sowing however respondents were having poor knowledge about seed treatment. It is further reported that there was significant difference in possession of knowledge about rabi maize production technology between marginal small and large farmers' efforts be made to enhance the knowledge about rabi maize production technology among all the categories of farmers by using different methodologies of transfer of technology.

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