

KNOWLEDGE LEVEL OF FARMERS ABOUT MAIZE (*ZEA MAYS*) PRODUCTION TECHNOLOGY IN DURG DISTRICT OF CHHATTISGARH STATE

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Abstract: Knowledge about innovation may be an important factor affecting the adoption behavior of farmers. The farmers who have more knowledge about newly developed technology also have more level of adoption of technology compare than those who have low knowledge. Operationally knowledge was used in this study as actual knowledge of farmers regarding maize production technology. The present study was investigating the overall level of knowledge about maize (*Zea mays*) production technology of rice-maize grower families of Durg district of Chhattisgarh state. Data was collected from rice-maize grower families that were selected randomly from each selected 12 villages to make a sample size of 120 rice-maize farm families, with the help of pre-tested interview schedule. The result reveals that the maximum of the respondents (48.33%) had medium level of overall knowledge, followed by 29.17 per cent of them had high level of knowledge and 22.50 per cent of them had low level of overall knowledge about maize production technology.

Keywords: Knowledge, Maize Production, Technology, Rice-Maize, Cropping system

INTRODUCTION

In India, maize is the third most important food crops after rice and wheat. According to advance estimate its production is likely to be 19.30 million tons (2016-17) mainly during *kharif* season which covers 80 per cent area. Maize in India, contributes nearly 9 per cent in the national food basket. In addition to staple food for human being and quality feed for animals, maize serves as a basic raw material as an ingredient to thousands of industrial products that includes starch, oil, protein, alcoholic beverages, food sweeteners, pharmaceutical, cosmetic, film, textile, gum, package and paper industries etc. Maize is cultivated throughout the year in all states of the country for various purposes including grain, fodder, green cobs, sweet corn, baby corn, popcorn in pry-urban areas. In India the predominant maize growing states that contributes more than 80.00 per cent of the total maize production are Andhra Pradesh (20.90 %), Karnataka (16.50 %), Rajasthan (09.90 %), Maharashtra (09.10 %), Bihar (08.90 %), Uttar Pradesh (06.10 %), Madhya Pradesh (05.70 %), Himachal Pradesh (4.4 %). Apart from these states maize is also grown in Jammu and Kashmir and North-Eastern states. Hence, the maize has emerged as important crop in the non-traditional regions i.e. peninsular India as the state like Andhra Pradesh which ranks 5th in area (0.79 m ha) has recorded the highest production (4.14 m t) and productivity (5.26 t ha⁻¹) in the country although the productivity in some of the districts of Andhra Pradesh is more or equal to the USA. Jat *et al.* (2009) revealed that Rice-maize systems are practiced mostly in the south (Andhra Pradesh, Tamil Nadu, and Karnataka) and in the

northeast (Bihar and West Bengal) parts of India with acreage of more than 0.5 Mha Andhra Pradesh has the highest acreage under R-M system in South India where this system is rapidly increasing under resource-conserving technologies, mostly zero tillage. Dhruw (2008) maize crop is cultivated in Chhattisgarh in 1.51 lakh ha area and its productivity is 1.2 tonnes per ha which is very low compared to national productivity (1.6 tons per ha). Narbaria (2013) reported that the majority of respondents (57.15%) had 2-3 years of experience, followed by 30.15 per cent of respondents had up to 1 years of experience, 07.15per cent had up to 4-5 years of experience and only 5.55 per cent of respondents had above 5 years of experience in rice cultivation. Prajapati *et al.* (2015) mentioned that the land holding had positive and highly significant relationship with the extent of adoption of no-cost and low-cost technologies of animal husbandry. Tailor *et al.* (1998) reported that the knowledge of selected dry land farming practices of the small and big farmers was positively related with their adoption.

MATERIALS AND METHODS

The present study was undertaken in Durg district of Chhattisgarh state during 2016-17 in all three blocks namely Patan, Dhamdha and Durg. From each selected block four villages on the basis of area under rice-maize cropping system were considered for this study. The rice-maize cropping system adopted 10 farmers from each selected block were selected as respondents from all 12 villages, thus a total of 120 farmers (10 X 12 = 120) were selected for data collection. The data were collected by

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personal interview with the help of well prepared, structured and pretested interview schedule. Data were analyzed using frequency distribution, percentages, and correlation coefficient.

RESULT AND DISCUSSION

The findings regarding farming experience of the respondents are presented in Table 1 and Fig 1. It is clear from the data that majority (94.16%) of the respondents had farming experience up to 10 years, followed by 5.84 per cent had farming experience between 11 to 20 years and none of the respondent had farming experience above 20 years.

Table 1. Distribution of respondents according to their farming experience regarding rice-maize cropping system (n=120)

Sl. No	Farming experience	Frequency	Percentage
1.	Up to 10 years	113	94.16
2.	11 to 20 years	07	5.84
3.	Above 20 years	00	0

Since all the respondents belonged to farming community and most of them were involved in farming from their childhood hence farming

experience is solely influenced by their age and found quite high in the study area.

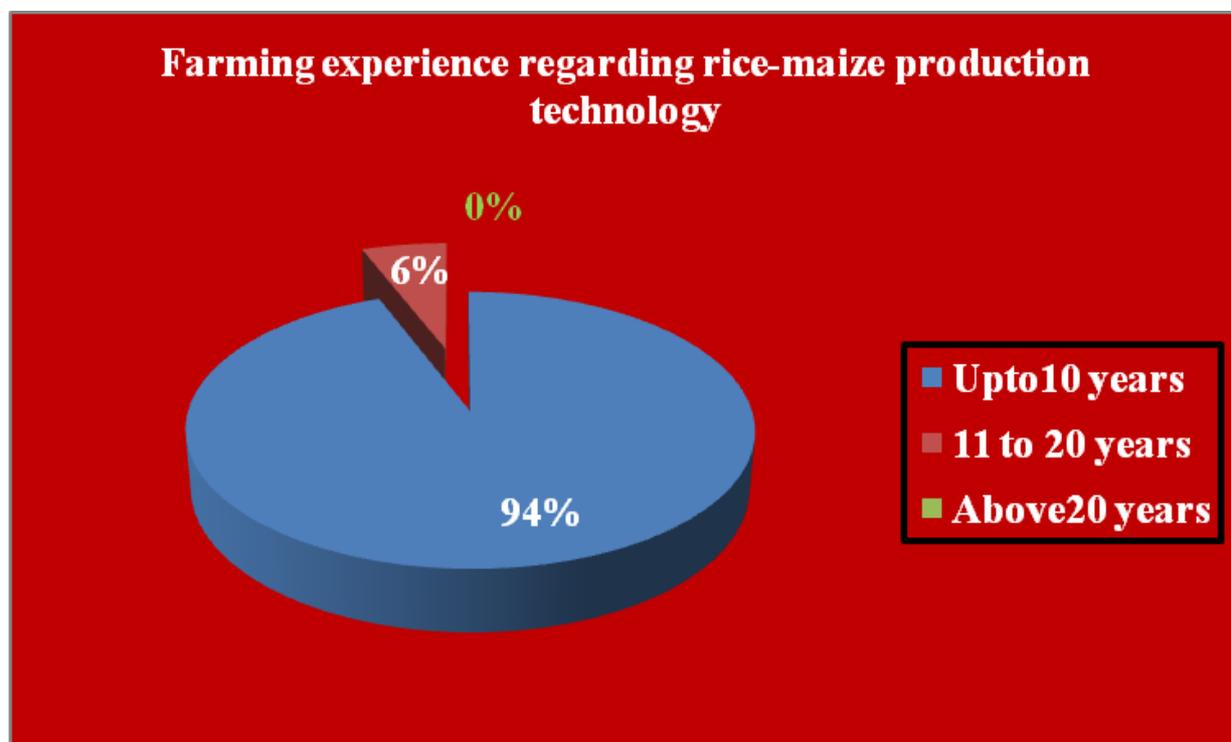


Fig 1: Distribution of respondents according to their farming experience

The data regarding knowledge about practices of recommended maize production technology are presented in Table 2. The data reveals that the majority of the respondents (62.50%) had high level of knowledge regarding preparation of land followed by 27.5 per cent of the respondents had medium level of knowledge and 10 per cent of them had low level of knowledge. Regarding selection of seed, the majority of (55%) the respondents had medium level of knowledge followed by 45 per cent of the respondents had high level of knowledge. Towards seed treatment, majority (60%) of the respondents

had low level of knowledge, followed by 21.66 per cent of the respondents had medium level of knowledge and 18.34 per cent of them had high level of knowledge. Regarding application of manure fertilizers, the majority of (54.20%) the respondents had medium level of knowledge followed by 30 per cent of the respondents had high level of knowledge and 15.80 per cent of them had low level of knowledge. With respect to water management, maximum (49.17%) respondents had medium level of knowledge, followed by 31.66 per cent of the respondents had high level of knowledge and 19.17

per cent of them had low level of knowledge. Concerning to weed management, most (55.83) of the respondents had medium level of knowledge,

followed by 20 per cent of the respondents had high level of knowledge and 24.17 per cent of them had low level of knowledge.

Table 2. Distribution of respondents according to their practice wise level of knowledge about maize production technology (n=120)

Sl. No.	Practices	Level of knowledge		
		Low F (%)	Medium F (%)	High F (%)
1.	Preparation of land	12 (10)	33 (27.50)	75 (62.50)
2.	Selection of seed	00 (0)	66 (55.00)	54 (45.00)
3.	Seed treatment	72 (60.00)	26 (21.66)	22 (18.34)
4.	Application of manure fertilizers	19 (15.80)	65 (54.20)	36 (30.00)
5.	Water management	23 (19.17)	59 (49.17)	38 (31.66)
6.	Weed management	29 (24.17)	67 (55.83)	24 (20.00)
7.	Insect management	22 (18.33)	63 (52.50)	35 (29.17)
8.	Disease management	61 (50.83)	34 (28.34)	25 (20.83)
9.	Time of harvesting and method of cutting	9 (7.5)	67 (54.17)	46 (38.33)

* Figures in parenthesis show percentage F=frequency, (%) = percentage

Regarding insect management, the maximum the respondents (52.5%) had medium level of knowledge, followed by 29.17 per cent of the respondents had high level of knowledge and 18.33 per cent of them had low level of knowledge. Regarding disease management, the most of (50.83%) the respondents had low level of knowledge followed by 28.34 per cent of the

respondents had medium level of knowledge and 20.83 per cent of them had high level of knowledge. Regarding time of harvesting and method of cutting, maximum (54.17%) the respondents had medium level of knowledge followed by 38.33 per cent of the respondents had high level of knowledge and 7.5 per cent of them had low level of knowledge.

Table 3. Distribution of respondents according to their overall knowledge about maize production technology

Sl. No.	Level of knowledge	Frequency	Percentage
1.	Low (up to 12 score)	27	22.50
2.	Medium (13 to 16 score)	58	48.33
3.	High (more than 16 score)	35	29.17

Mean=14.49, S.D. = 2.31

The data regarding overall knowledge about recommended maize production technology are presented in Table 3. The data clearly reveals that the majority of the respondents (48.33%) had medium level of overall knowledge, followed by 29.17 per cent of them had high level of knowledge

and 22.50 per cent of them had low level of overall knowledge.

CONCLUSION

This study reveals, majority of the respondents had medium level of knowledge regarding selection of

seed, application of manure fertilizers, water management, weed management, insect management, and time of harvesting and method of cutting. In case of other practices like seed treatment, disease management most of the respondents had low level of knowledge, with respect preparation of land, majority of the respondents had high level of knowledge may be due to availability of farm machinery like tractor, rotavator on hire basis.

In terms of overall knowledge about maize production technology maximum respondents had medium level of overall knowledge, followed by few of them had high level of knowledge and only some of them had low level of overall knowledge about maize production technology. The knowledge of farmers about maize production technology can be increase by organizing training programme, frequent field visit and timely conduction of demonstration programme at village level by local extension functionaries.

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