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Knowledge of the farmers of Kheda district in Gujarat about improved cultivation practices of kharif rice crop

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ABSTRACT

Rice is the most important and extensively grown food crop in India. It is the staple food crop for more than half of the world. Rice is grown on about 44 per cent of the total area under cereal crops and contributes about 45 per cent of the total cereal production in India. In Gujarat state, district Kheda is ranked first in area and production with 0.095 million ha and 0.23 million ton production. The present study was undertaken in Matar Taluka of Kheda district with the specific objectives of studying the socio-personal characteristics and knowledge level of rice growers about the improved cultivation practices of the crop and find out the knowledge gap. Majority of the respondents had medium level of knowledge about improved cultivation practices of rice. About 64 per cent of the respondents had medium, whereas, 24 per cent had low level of knowledge about improved cultivation practices. Majority of the respondents knew the practices viz suitable soil type, land preparation, improved varieties, seed rate, area of nursery needed for one ha of selected cultivation and age of nursery plants appropriate for transplanting. The practices viz latest varieties recommended by researchers, recommended doses of fertilizers in nursery, disease control methods in nursery, application for seed treatment, seed treatment by bio-fertilizers, application of nitrogenous fertilizers, chemical weed control, knowledge about the beneficial insects in rice crop were least known to the rice growers.

Key words: Socio-personal characteristics, knowledge level, production technology, rice.

INTRODUCTION

Rice (*Oryza sativa* L) is the most important and extensively grown food crop in India and is the staple food for more than half of the world. It is not only a cereal crop, but also a way of life in Asian countries. Rice is grown on about 44 per cent of the total area under cereals and it contributes about 45 per cent of the total cereal production in India. It also contributes about 40 to 70 per cent of the human total calorie intake. Hence, sustained production and increased productivity of rice crop is critical for food and nutritional security in Asia. Rice has recognition as a supreme commodity to mankind, because it is truly life, culture, tradition and a means of livelihood to millions of people all over the world.

India has the largest area (43.3 million ha in 1996-97) under the rice in the world, yet the average productivity of rice

in India is only 2.9 tons/ha which is less than half of that of USA (6.75 tons/ha) China (6.3 tons/ha) and Japan (6.4 tons/ha) (Prasad 1999).

The present level of rice production in India needs to be increased in order to meet the ever increasing demand. It is estimated that India will require 100 million tons in 2010 and 140 million tons of rice in 2025 against the present requirement of 91.79 million tons. The required level of production can be achieved through the increased production which requires high management practices; efficient input supply system and quality genetic material. Above all the understanding and knowledge of the practicing farmers need to be strengthened to respond to the challenge. Kheda district is first in the area and production in Gujarat state.

METHODOLOGY

The present study was carried out in the Kheda district of Gujarat state. A multistage sampling design was adopted to select sample for data collection for the present study. For this purpose, the study was conducted by interviewing 100 Kharif rice growers from four villages of the Matar Taluka of Kheda district. An interview schedule was prepared so as to collect the information in line with the objectives of the study. Personal interview technique was used for data collection. All the practices for Kharif rice cultivation recommended by Anand Agricultural University, Anand were applied. Score '1' and '0' were given for correct and incorrect responses, respectively. Based on the cumulative knowledge score obtained, the respondents were categorized into three categories viz low, medium and high. Percentile was used to find out the knowledge level of the farmers. Some study on the subject has also been done by Gupta et al (2001) in J&K.

RESULTS AND DISCUSSION

The data shown in the Table 1 reveal that majority of respondents (38%) were in the age group of 36-50 years and 36 per cent were in the age group of up to 35 years, whereas, only 26 per cent of them had age above 50 years. The majority of respondents (40%) had education up to primary standard (up to 7th standard) followed by secondary school (33%) and higher secondary school level education (16%), whereas only two per cent respondent had education of graduation and above. Nine per cent of the respondents were illiterate. In case of family structure, majority (64%) had nuclear family and 52 per cent of them had big size family. The majority of the respondents (44%) had semi Pucca houses followed by Pucca houses (37%), whereas, only 19 per cent of the respondents still had Kacha houses. Most of the respondents (64%) were having membership in various organizations, whereas, rest of the respondents had no association with any institution. Majority

(67%) rice growers had agriculture as their main occupation along with animal husbandry. Majority of the respondents (64%) had at least two milch animals followed by respondents with 2 to 4 milch animals. Thirty nine per cent farmers were marginal, 38 per cent small and 17 per cent medium land holders. Only two per cent of the respondents were landless who cultivated rice on leased land (Table 1).

Table 1. Distribution of the rice growing respondents according to their socio- personal characteristics (n=100)

Characteristics	Category		Number	Percent
Age	i)	Young (18 to 35 years)	36	36.00
	ii)	Middle (36 to 50 years)	38	38.00
	iii)	Old (above 50 years)	26	26.00
Education	i)	Illiterate	9	9.00
	ii)	Primary (Std 1 to 7)	40	40.00
	iii)	Secondary (Std 8 to 10)	33	33.00
	iv)	Higher (11 to 12 Std)	16	16.00
	v)	Graduate & above	2	2.00
Type of family	i)	Nuclear	64	64.00
	ii)	Joint	36	36.00
Size of family	i)	Small (up to 5 members)	48	48.00
	ii)	Big (above 5 members)	52	52.00
Type of house	i)	Kacha	19	19.00
	ii)	Pucca	37	37.00
	iii)	Semi Pucca	44	44.00
Membership in	i)	No membership	36	36.00
organizations	ii)	Membership in organization	64	64.00
Profession	i)	Agriculture	13	13.00
	ii)	Agri + AH	67	67.00
	iii)	Agri + AH + Farm Labour	18	18.00
	iv)	Agri + Job	2	2.00
	v)	Agri + Business	0	0.00
No of milch animals	i)	up to 2	64	64.00
	ii)	2 to 4	22	22.00
	iii)	above 4	6	6.00
Land Holdings	i)	Land less	2	2.00
	ii)	Marginal farmers (below 1.0 ha)	39	39.00
	iii)	Small farmers (1.01 to 2.0 ha)	38	38.00
	iv)	Medium (2.01 to 4.0 ha)	17	17.00
	v)	Big farmers (above 4.0 ha)	4	4.00

Data given in Table 2 reveal that majority (64%) of the farmers were having medium, 24 per cent having low and only 12 per cent of them had a high level of knowledge about improved cultivation practices of rice which shows that majority of the farmers had medium level of knowledge regarding improved cultivation practices of rice.

Data pertaining to knowledge of the farmers wrt cultivation practices of rice are given in Table 3. It can be observed that majority of the respondents were knowing the practices viz suitable soil type, land preparation, improved varieties, seed rate, area of nursery needed for one ha of selected cultivation, age of nursery plants appropriate for transplanting, insect control methods in nursery, type of disease infestation found in nursery, spacing between rows and plants, quantity of FYM to be applied, water management, hand weeding, number of hand weedings, knowledge of harmful insects, insect control methods, disease infestation in the crop, maturity duration of crop, crop yield /ha and marketing of harvested produce.

The practices viz latest varieties recommended by researchers, recommended doses of fertilizers in nursery, disease control methods in nursery, application for seed treatment, seed treatment by bio-fertilizers, application of nitrogenous fertilizers, chemical weed control, knowledge about beneficial insects in the crop were least known to the growers. These findings are in agreement with those reported by Tambat and Shindesai (2009).

CONCLUSION

The study indicated that majority of the respondents had medium level of knowledge about improved cultivation practices of rice. About 64 per cent of the respondents had medium level of knowledge, whereas, 24 per cent respondents had low level of knowledge about improved cultivation practices of rice. Majority of the respondents knew the practices viz suitable soil type, land preparation, improved varieties, seed rate, area of nursery needed for one ha of selected cultivation, age of nursery plants appropriate for transplanting, insect control methods in nursery, type of disease infestation found in nursery, spacing between rows and plants, quantity of FYM to be applied, water management, hand weeding and number of hand weedings required, knowledge about harmful insects, insect control methods, disease infestation in the crop, maturity duration of crop, crop yield/ha and marketing of harvested produce. The practices viz latest varieties recommended by researchers, recommended doses of fertilizers in nursery, disease control methods in nursery, application for seed treatment, seed treatment by bio-fertilizers, application of nitrogenous fertilizers, chemical weed

Table 2. Distribution of the respondents according to their overall knowledge about improved cultivation practices of rice (n = 100)

Sr No	Knowledge level	Number	Percentage
1	Low (upto 15.27)	24	24
2	Medium (15.27 to 24.29)	64	64
3	High (24.29 and above)	12	12
	Total	100	100

Table 3. Knowledge about improved cultivation practices of Rice (n = 100)

Sr No	Improved practices	Knowledge score obtained	
		Frequency	Percentage
1	Suitable soil type	81	81
2	Land preparation	92	92
3	Improved varieties	91	91
4	Latest varieties recommended by researchers	47	47
5	Seed rate	64	64
6	Area of nursery needed for one ha of selected cultivation	83	83
7	Land for nursery	67	67
8	Recommended dose of fertilizer in nursery	45	45
9	Age of nursery plant appropriate for transplanting	86	86
10	Month suitable for transplanting	61	61
11	Transplanting system (line method etc)	81	81
12	Type of insect infestation found in nursery	76	76
13	Insect control method in nursery	54	54
14	Type of disease infestation found in nursery	53	53
15	Disease control method in nursery	28	28

16	Application for seed treatment	15	15
17	Seed treatment by bio-fertilizer	34	34
18	Spacing between row and plant	71	71
19	Application of FYM (quantity)	98	98
20	Application of chemical fertilizers		
	Nitrogen	47	47
	Phosphorus	55	55
22	Water management	63	63
23	Hand weeding & no of hand weedings	96	96
24	Chemical weed control	34	34
25	Knowledge of harmful insects	97	97
26	Knowledge of beneficiary insects	31	31
27	Insect control methods in use	61	61
28	Disease infestation in crop	67	67
29	Disease control methods	53	53
30	Maturity duration of crop	92	92
31	Crop yield / ha	85	85
32	Marketing of harvested produce	91	91

control, knowledge about beneficial insects in rice crop were least known by the rice growers. So it is urgent to organise training programmes on these above mentioned less known practices viz latest varieties recommended by researchers, recommended doses of fertilizers in nursery, disease control methods in nursery, application for seed treatment, seed treatment by bio-fertilizers, quantity of nitrogenous fertilizers, chemical weed control and knowledge about beneficial insects.

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