A study on level of knowledge on recommended package of practices of rice growers

■ **Maddina Sreekanth, A.H. Hakeem, Qadri Javid Ahmad Peer and Farhana**

SUMMARY : The study was conducted in 3 tehsils of Baramulla district namely Sopore, Bomai and Pattan from which 4 villages from each tehsil were selected randomly that makes a total of 12 villages and 10 rice growers from each village those who cultivate rice above half an acre were purposively selected that makes a sample size of 120 rice growers for the study. It was found that majority of the respondents were middle aged and literates with medium family size, possessing land holding of 4-10 kanals. Majority of the respondents dependent on agriculture for their livelihood with medium farming experience, annual income, mass media exposure and scientific orientation whereas majority of the respondents had low social participation and extension contacts. Independent variables education, occupation, social participation, annual income, mass media exposure, extension contacts and scientific orientation had positive and significant relation with the knowledge level of respondents. Majority of the respondents had medium knowledge regarding the package of practices for rice cultivation recommended by SKUAST-Kashmir.

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BACKGROUND AND OBJECTIVES

Rice (*Oryza sativa* L.) is grown all over the world. India is the second leading producer of rice in the world after China. Rice is grown extensively in India on an area of 43.38 million hectares with a production of 104.32 million tones and productivity of 3093 kg/ha. Rice accounts for about 41.36 per cent of total food grains production and 44.34 per cent of cereals production of the country (Anonymous, 2017). In Kashmir valley rice is grown over an area of 1.44 lakh hectares with a production of 3.8 lakh tons and a

productivity of 2688.3 kg/ha (Anonymous, 2016).

In Baramulla district of J&K, the area under rice during 2011- 12 to 2014 – 15 has increased from 8094 to 8514 hectares whereas production during the said period has decreased from 194.39 to 144.39 thousand metric tons (Anonymous, 2016a). It has been found that the production levels over the decade have remained stagnant mainly due to poor and deteriorating soils. One of the probable reason could be that the farmers are not having proper knowledge on the

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recommendations of SKUAST-Kashmir with respect to rice crop. Keeping the above mentioned issues, a study on level of knowledge of rice growers on recommended package of practices of Baramulla district of Jammu and Kashmir has been planned with the following specific objectives:

-To study the selected characteristics of rice growers.

-To know the level of knowledge of rice growers regarding various practices of rice cultivation as recommended by SKUAST-K.

- Relationship between selected characteristics of respondents and knowledge.

RESOURCES AND METHODS

The study was carried out in 3 tehsils of Baramulla district of Jammu and Kashmir which were purposively selected, where rice is grown. Ex- post- facto research design was adopted for the study. From each tehsil four villages were randomly selected thus, twelve villages were selected for the present study. A sample of 120 farmers from twelve villages were purposively selected those who cultivate rice over an area of half an acre. The data were collected by personal interview method containing questions regarding rice cultivation, which were prepared after consulting experts from division of agronomy, plant pathology and agricultural extension and by referring to the package of practices of cereals crops published by the Sher-e-Kashmir University of Agricultural Sciences and Technology of Kashmir. Later the responses were tabulated, analyzed and results were presented.

OBSERVATIONS AND ANALYSIS

The results obtained from the present study as well as discussions have been summarized under following heads:

To study the selected characteristics of rice growers:

The data regarding the personal characteristics of farmers *viz.,* age, education, family size, land holding, occupation, annual income, social participation and information source used are presented in Table 1.

Age:

The data in Table 1 reveal that, majority 50.83 per

cent of the respondents were middle age group, followed by old age group with 28.83 per cent and 20.83 per cent were young age group.

Educational qualification:

It is clear from the Table 1 that, majority 36.66 per cent of the respondents were illiterates, 2.5 per cent of the respondents had education upto primary level, 22.50 per cent of the respondents had education upto middle school and metric, whereas 8.33 per cent of the respondents were educated upto 12th standard, 5.00 per cent of the respondents were graduates and only 2.5 per cent of the respondents were post graduates.

Family size:

It is clear from the Table 1 that, majority 63.33 per cent of respondents were having medium family size followed by small family size with 24.16 per cent of respondents and 12.50 per cent of the respondents with big family size.

Land holding:

The data in Table 1 show that, majority 74.16 per cent of the respondents were having land holding measuring from 4-10 kanals, 21.66 per cent of the respondents were having land holdings of 11 to 20 kanals, 2.5 per cent of the respondents had a holding of 21-30 kanals whereas only 1.6 per cent of respondents had holding above 30 kanals of land.

Occupation:

The data presented in Table 1 reveal that, majority 43.33 per cent of the respondents were engaged only in agriculture, while 40.00 per cent of the respondents were engaged both in agriculture and business and only 16.66 per cent of the respondents were engaged both in agriculture and service sector.

Annual income:

It is clear from the Table 1 that, majority 72.50 per cent of the respondents were having low annual income, 16.66 per cent of the respondents were having medium level of annual income and 10.83 per cent of the respondents with high level of annual income.

Farming experience:

It is evident from the Table 1 that, majority 72.50

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Table 1 : Selected characteristics of rice growers (n=120)

Sr. No.	Variable	Category	Respondents	
			Frequency	Percentage
1.	Age	Young (21-35years)	25	20.83
		Middle (36-58 years)	61	50.83
		Old (above 58 years)	34	28.33
2.	Educational qualification	Illiterate	44	36.66
		Primary	03	02.50
		Middle	27	22.50
		Matric	27	22.50
		10+2	10	08.33
		Graduate	06	05.00
		Postgraduate	03	02.50
3.	Family size	Small (Upto 5 members)	29	24.16
		Medium (6-10members)	76	63.33
		Big (above10 members)	15	12.50
4.	Land holding	4-10 kanals	89	74.16
	(20 Kanals=1 ha)	11-20 kanals	26	21.66
		21-30 kanals	03	02.50
		Above 30 kanals	02	01.66
5.	Occupation	Only agriculture	52	43.33
		Agriculture + Business	48	40.00
		Agriculture + Service	20	16.66
6.	Annual income	Low (Upto 2 lakhs)	87	72.50
		Medium (2-4 lakhs)	20	16.66
		High (above 4 lakhs)	13	10.83
7.	Farming experience	Low (Below mean-S.D)	14	11.66
		Medium (Between mean±S.D)	87	72.50
		High (Above mean+S.D)	19	15.83
		Mean:30.07, S.D:15.12		
8.	Social participation	Low (Below mean-S.D)	61	50.83
		Medium (Between mean±S.D)	49	40.83
		High (Above mean+S.D)	10	8.33
		Mean:1.18, ½S.D: 0.80		
9.	Mass media exposure	Low (Below mean-S.D)	11	9.16
		Medium (Between mean±S.D)	96	80.00
		High (Above mean+S.D)	13	10.83
		Mean:6.48, S.D:1.71		
10.	Extension contacts	Low (Below mean-S.D)	91	75.83
		Medium (Between mean±S.D)	13	10.83
		High (Above mean+S.D)	16	13.33
		Mean:0.67, ½S.D:0.49		
11.	Scientific orientation	Low (Below mean-S.D)	16	13.33
		Medium (Between mean±S.D)	91	75.83
		High (Above mean+S.D)	13	10.83
		Mean:10.77, S.D:3.61		

per cent of the respondents were having medium level of farming experience, 15.83 per cent of the respondents were having high level of farming experience and only 11.66 per cent of the respondents with low level of farming experience.

Social participation:

From Table 1, it depicts that, majority 50.83 per cent of the respondents had low level of social participation followed by medium and high levels of social participation with 40.83 per cent and 8.33 per cent of respondents, respectively.

Mass media exposure:

From Table 1, it is evident that, majority 80.00 per cent of the respondents were having medium level of mass media exposure followed by high and low level of mass media exposure by 10.83 per cent and 9.16 per cent of respondents, respectively.

Extension contacts:

The data presented in Table 1 reveal that, majority 75.83 per cent of the respondents were having low level of extension contacts, 13.33 per cent of the respondents were having high level of extension contacts and only 10.83 per cent of the respondents had medium level of extension contacts.

Scientific orientation:

From Table 1, it is clear that, majority 75.83 per cent of the respondents were having medium level of scientific orientation followed by low and high level of scientific orientation with 13.33 per cent and 10.83 per cent of respondents, respectively.

To know the level of knowledge of rice growers regarding cultivation of rice:

In the present study, knowledge referred to the body of information understood and retained by the respondents about rice cultivation practices. To measure the knowledge level of rice growers a teacher made test of 44 questions pertaining to rice cultivation were prepared and were put to discrimination index and difficulty index and the questions whose difficulty index was between 25-85 and discrimination index was above 25 were retained and out of 44 questions 22 questions were retained. The answers to the question were quantified by giving 2 score to full knowledge answer, 1 score for partial knowledge and zero score for no knowledge answer. On the basis of mean (27.77) and S.D. (3.61) the classification of respondents in low, medium and high knowledge was done following the procedure Low: (Below mean-S.D.), Medium: (Between mean±S.D.) and High: (Above mean+S.D.).

Difficulty index:

$$P = \frac{\text{No. of respondents giving correct answer}}{\text{Total no. of respondents}} \times 100$$

Discrimination index:

$$3\sqrt{E} = \frac{(S_1 + S_2) - (S_5 + S_6)}{N/3}$$

Overall knowledge level of respondents:

From the Table 2, it is clear that, majority 61.66 per cent of the respondents were having medium level of knowledge, whereas 22.50 per cent and 15.83 per cent of the respondents were having high and low level of knowledge, respectively. This finding is line with findings of Meena *et al.* (2012) and Vijayakumar (2012).

Data furnished in the Table 3 illustrate that majority of respondents had complete knowledge about recommended rice varieties (55.83%), types of soil (72.50%), time for sowing of rice nursery (93.33%), number of ploughings for puddling (71.66%), common micro-nutrient applying to rice crop (53.33%), major pest of rice crop (80.33%), chemicals for pest management (45.83%), major disease of rice crop (60.00%), chemical

Table 2 : Overall knowledge level of respondents				
Sr. No.	Variable	Categories	Respondents	
			Frequency	Percentage
1.	Knowledge	Low (Below mean-S.D)	19	15.83
		Medium (Between mean ± S.D.)	74	61.66
		High (Above mean + S.D.)	27	22.50
			Mean:27.77, S.D:3.61	

Table 3 : Distribution of rice growers according to practice-wise knowledge level of rice cultivation practices   **(n=120)**

| Sr. No. | Practices | Level of knowledge | | | | | |
| | | Full knowledge | | Partial knowledge | | No knowledge | |
		F	%	F	%	F	%
1.	Recommended rice varieties suitable for cultivation in your area (Jhelum, SR-1)	67	55.83	58	48.33	0	0.00
2.	Type of soil is best suitable for rice cultivation (Heavy clay soils)	87	72.50	33	27.50	0	0.00
3.	The most suitable time for sowing of rice nursery (April 15th –15th May)	112	93.33	08	06.66	0	0.00
4.	Seed rate to raise nursery per kanal (2.5-3kg/kanal)	11	09.16	109	91.84	0	0.00
5.	Chemicals for seed treatment [Mancozeb 75 WP + Carbendazium 50WP (3g/kg seed)]	28	23.33	0	0.00	92	76.66
6.	No.of ploughings for proper puddling (2-3 ploughings)	86	71.66	34	28.33	0	0.00
7.	Perfect age seedling for transplanting (25-30 days)	36	30.00	77	64.16	07	05.83
8.	No.of seedlings per hill (2-3 seedlings)	0	0.00	120	100	0	0.00
9.	Quantity of FYM required per kanal (500kg)	27	22.50	90	75.00	03	02.50
10.	Quantity of urea required per kanal (10 kg)	55	45.83	65	54.16	0	0.00
11.	Quantity of DAP required per kanal (6.5kg)	48	40.00	72	60.00	0	0.00
12.	Quantity of MOP required per kanal (2.5kg)	52	43.33	68	55.83	0	0.00
13.	Common micro-nutrient applying to rice crop ($ZnSo_4$)	64	53.33	0	0.00	56	46.66
14.	Recommended spacing in rice (15x15cm)	25	20.83	95	79.16	0	0.00
15.	Frequency of irrigation to be maintained (6 days)	0	0.00	120	100	0	0.00
16.	Recommended weedicide for the control of weeds (Butachlor)	46	38.33	43	35.83	31	25.83
17.	Major pest of rice crop in your area (Paddy grass hopper)	97	80.33	0	0.00	23	19.66
18.	Chemical used for pest management (Chloropyriphos)	55	45.83	42	35.00	23	19.66
19.	Major diseases of rice crop in your area (Rice blast and brown spot)	72	60.00	0	0.00	48	40.00
20.	Chemical used for disease management of rice (Carbendazium and Tricyclazole)	49	40.83	23	19.16	48	40.00
21.	How many days will rice take to attain harvesting maturity? (150-165 days)	107	89.16	13	10.83	0	0.00
22.	How much yield can be obtained from one kanal area? (3.5 –3.75 q/k)	103	85.83	17	14.16	0	0.00

Note: F= Frequency, %= Percentage, 1 ha= 20 kanals

Table 4 : Relationship of independent variables of respondents with their knowledge   **(n=120)**

Sr. No.	Variable	Correlation co-efficients ('r' Value)	'p' Value
1.	Age	0.054NS	0.556
2.	Education	0.449**	0.000
3.	Family size	0.063NS	0.496
4.	Occupation	0.356**	0.000
5.	Land holding	0.150NS	0.103
6.	Farming experience	0.079NS	0.390
7.	Social participation	0.205**	0.000
8.	Annual income	0.229*	0.012
9.	Mass media exposure	0.375**	0.000
10.	Extension contacts	0.219*	0.016
11.	Scientific orientation	0.341**	0.000

# 'p' value less than 0 .05 implies that correlation is significant,* and ** indicate significance of values at P=0.05 and 0.01, respectively
NS= Non-significant

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control for diseases (40.83%), time required for obtaining harvesting maturity of rice (89.16%) and yield (85.83%).

However, majority of the respondents had partial knowledge regarding seed rate of rice (91.84%), perfect age seedling for transplanting (64.16%), number of seedlings / hill (100%), quantity of FYM required for rice (75.00%), quantity of urea required for rice (54.16 %), quantity of DAP required for rice (60.00%), quantity of MOP required for rice (55.83%), spacing for transplanting of seedlings (79.16%) and irrigation interval (100%) whereas majority (76.66%) of the respondents had no knowledge about seed treatment chemicals.

Relationship between selected characteristics of respondents and knowledge:

In order to study the nature of relationship between the selected profile characteristics of rice growers and their level knowledge, correlation analysis was followed using standard statistical package.

Independent variables vs knowledge:

From the Table 4 it is evident that independent variables, age, family size, land holding and farming experience were not associated with knowledge level of respondents. But education, occupation, social participation, annual income, mass media exposure, extension contacts and scientific orientation were significantly and positively related with the knowledge level of respondents. It explains that independent variables age, family size, land holding and farming experience had no influence on the knowledge of rice growers. This findings is in line with the findings of Manjunadh (2010). Similar work related to the present investigation was also carried out by Reddy (2003 and 2006); Singh and Yadav (2014); Sophiasatyavathy (2001); Thippeswamy (2007); Vasantha (2000) and Vijayakumar (2012).

Conclusion:

In present study on level of knowledge of rice growers it can be concluded that three-fourth of the rice growers had no knowledge about seed treatment chemicals, nearly half of the respondents had no knowledge about disease management and nearly half of the respondents had partial knowledge about the nutrient management of rice crop. Independent variables, age, family size, land holding and farming experience were not associated with knowledge level of respondents. It can be concluded that rice growers were having poor knowledge on recommended rice cultivation practices which can be efficiently improved by regular farm and home visits and training programmes.

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