Constraint of Improved Rice Production Technology by the Farmers in Dungarpur District of Rajasthan

Ram Lal Khatik[1] and B. S. Bhimawat[2]

ABSTRACT

India is the second leading producer of rice in the entire world, preceded by China. Rice remains a staple food for the majority of the world's population. More than two-thirds of the world relies on the nutritional benefits of rice. Rice is naturally fat, cholesterol and sodium free. Rice is primarily a high energy or high calorie food. In Rajasthan rice is grown on an area of 131126 Lakh hectares with a production of 265545 lakh tones (Anonymous, 2010-11). The major rice growing districts in Rajasthan are Banswara, Dungarpur, Kota, Bundi, Sriganganagar and Hanumangarh. The present study was conducted in Dungarpur district of Southern Rajasthan. There are total four tehsils in Dungarpur district of Rajasthan, out of which two tehsil namely Simalwara and Dungarpur have been selected on the basis of maximum area under cultivation of rice. For selection of respondents total 120 rice growers (60 small and 60 marginal farmers) were selected on the basis of random sampling method from the identified villages for the present study. It was found that 62 (51.67%) of total rice producers faced medium level of constraints in adoption of rice production technology. Whereas, 34 (28.33%) respondents were reported from the group of low constraints level and 24 (20.00%) respondents were in the high constraints level.

Key words: Constraint, improved rice production, technology, low price of produce.

INTRODUCTION

India is the second leading producer of rice in the entire world, preceded only by China. Rice is grown extensively in India in about 42.56 m ha area with an annual production of 95.33 mt having an average yield of 2240 kg per hectare (Anonymous, 2010). Annual consumption is around 85 million tonnes. In India, Rice is cultivated in both seasons - winter and summer. West Bengal, Uttar Pradesh, Andhra Pradesh, Punjab, Tamil Nadu, Bihar, Orissa, Assam, Karnataka and Haryana are the major rice producing states. More than 50 per cent of total production comes from the first four states. Food Corporation of India purchases around 20 to 25 per cent of the total rice production in the country both under levy from the rice mills and directly in the form of paddy from the farmers at Minimum Support Prices announced by the Government. More than 4000 varieties of rice are grown in India. In Rajasthan rice is grown in an area of 131126 lakh hectares with a production of 265545 lakh tonnes (Anonymous, 2010). The major rice growing districts are Banswara, Dungarpur, Kota, Bundi, Ganganagar and Hanumangarh. Dungarpur district contributes maximum production in the southern Rajasthan, while the productivity is far below (660 kg/ha) as against the state average of 2025 kg/ha. This is due to cultivation of poor yielding local genotypes under rainfed and irrigated conditions. The soil and climatic conditions of Dungarpur district is suitable for rice cultivation. The improved cultivation practices have been deffused among the farmers by scientific community in the reason but level of adoption of rice technology by the farmers is not yet known. Likewise the constraint that hinders the adoption needs to be known by research and extension systems for its improvements. The production of rice can be increased through timely adoption of recommended improved rice production technology by the farmers.

Considering these facts in view, the present study entitled "Constraint of Improved Rice Production Technology by the Farmers in Dungarpur District of Rajasthan" was taken up with following specific objectives, to identify the constraints being perceived by the farmers in adoption of recommended rice cultivation technology and to see the significant difference between small and marginal farmers about constraints in adoption of improved rice cultivation technology.

METHODOLOGY

The present study was conducted in Dungarpur district of Southern Rajasthan. There are total four tehsils in Dungarpur district of Rajasthan, out of which two tehsil namely Simalwara and Dungarpur have been selected on the basis of maximum area under cultivation of rice. A complete list of all the major rice growing villages was

[1] M. Sc. Student, Department of Extension Education, Rajasthan college of Agriculture, Udaipur-313001 (Rajasthan)
[2] Professor & Programme Cordinator at KVK Dungarpur, MPUAT, Udaipur-313001(Rajasthan)

prepared in consultation with the personnel of revenue and agriculture department from the identified tehsils. From the list so prepared, five villages from each identified tehsil were selected on the basis of maximum area under rice cultivation. Thus, 10 villages were selected for present investigation. For selection of respondents, a comprehensive list of rice growers was prepared with the help of village *Patwari* and agricultural supervisor of respective villages and was categorized into small and marginal farmers category. Total 120 rice growers (60 small and 60 marginal farmers) were selected on the basis of random sampling method from the identified villages for the present study.

RESULTS AND DISCUSSION

In the present study, the term constraint means the barriers or obstacles, which were perceived by the rice growers in the adoption of improved rice production technology. It is needless to mention that pace of adoption can be augmented by overcoming the perceived constraints. So it was felt necessary to find out the major constraints which prevented the farmers from adoption of improved rice production technology. In the present context, the constraints perceived by the farmers about improved rice production technology were identified and the results are presented in subsequent tables.

To get an overview of the rice growers regarding the constraints encountered by them in adoption of recommended improved rice cultivation technology, they were ramified into three strata i.e. low, medium and high level of constraints on the basis of calculated mean and standard deviation of the score given to the constraints by the respondents.

The data in table 1 reveals that 62 (51.67%) of total rice producers faced medium level of constraints in adoption of rice production technology. Where as, 34 (28.33%) respondents were reported from the group of low constraints level and 24 (20.00%) respondents were in the high constraints level.

Table 1: Distribution of farmers according to level of constraints faced by them in improved rice cultivation

n=120

Level of constraints	Small farmers		Marginal farmers		Total	
	F	%	f	%	F	%
Low (< 30)	21	35.00	13	21.67	34	28.33
Medium (30-35)	32	53.33	30	50.00	62	51.67
High (> 35)	07	11.67	17	28.33	24	20.00
Total	60	100.00	60	100.00	120	100.00

f = Frequency, % = Per cent

While analyzing the case of small and marginal respondents regarding constraints in adoption of improved rice production practices, it was reported that 07 (11.67%) small farmers were in the high constraints level and 21 (35.00%) small farmers in the low constraints group, while 53.33 per cent small farmers were found in the medium level constraints category. In case of marginal farmers it was observed that 28.33, 50.00 and 21.67 per cent respondents had high, medium and low level of constraints in adoption of recommended improved rice cultivation practices.

It can be inferred that majority of marginal and small farmers fell under category of medium level of constraints regarding adoption of recommended improved rice production technology. Whereas, majority of marginal farmers were under high level of constraints as compared to small farmers.

Data presented in Table 2 reveals that "low price of produce at the time of harvesting" was expressed as one of the most important constraints and ranked first by small and marginal farmers with 92.78 and 93.33 per cent respectively. It means that farmers of both the categories wants remunerative price of rice produce at the time of harvesting in the study area. The next important constraints like "Poor economic conditions of the rice growers for purchasing of inputs", lack of proper market in the area" which were also expressed as important constraints by both the categories of farmers and ranked second and third respectively in the priority of constraints. The problem related to poor economic condition of the rice growers might be because of the reason that research area is in tribal dominated district of Rajasthan, so majority of the farmers are poor in economic condition and they can't purchase the costly inputs for crops.

Further analysis of Table 2 reveals that "scattered land holding" was also perceived as important constraint by the small and marginal farmers with MPS 78.89 and 80.00 respectively, and it was ranked fourth by both the categories of respondents. Likewise, the constraints "high insect-pest incidence" and "improper transport facilities" were considered as major constraints in adoption of rice cultivation technology by the respondents and ranked fifth and sixth in the priority of constraints by the rice growers in the study area.

Table 2 also showed that "high cost of improved seeds", "timely unavailability of inputs at their locality", "non- availability of high yielding seeds", "high cost of plant protection measures", "lack of improved storage structure", "lack of knowledge about high yielding varieties" and "inadequate facility for nursery raising"

were also important constraints considered by the rice growers in adoption of rice cultivation technology. The overall mean per cent score of these constraints was 69.17, 64.44, 60.83, 53.61, 52.22, 50.00 and 46.11 respectively. The least important constraint faced by the respondents was "poor produce procurement policy of government" with overall MPS 33.89. The last priority given to this constraint may be because of the reason that majority of the farmers were not acquainted with the procurement policy of government in the study area.

From the above discussion it could be concluded that low price of produce at the time of harvesting, poor economic condition of the farmers, lack of proper market in the area, scattered land holding and high insect pest incidence were major constraints perceived by marginal and small farmers in adoption of improved rice cultivation technology in the study area.

Table 2: Constraints perceived by the farmers in adoption of recommended improved rice cultivation practices

n=120

Constraints	Small Farmers		Marginal Farmers		Total	
	MPS	Rank	MPS	Rank	MPS	Rank
Lack of knowledge about rice cultivation technology	35.56	16	41.11	16	38.33	16
Timely unavailability of inputs at their locality	61.67	8	67.22	8	64.44	8
Lack of knowledge about High Yielding Varieties	48.89	12	51.11	12	50.00	12
Seed treatment is complex in nature	41.11	14	43.89	14	42.50	14
Poor economic conditions of the rice growers for purchasing of inputs	89.44	2	91.67	2	90.56	2
Non- availability of high yielding seeds	58.33	9	63.33	9	60.83	9
High cost of plant protection measures	51.67	10	55.56	10	53.61	10
Non availability of irrigation water in time	38.33	15	40.00	15	39.17	15
Unavailability of electricity for water lifting from well and tube well	35.56	17	33.33	18	34.44	17
High cost of improved seeds	68.33	7	70.00	7	69.17	7
Lack of improved storage structure	51.11	11	53.33	11	52.22	11
Inadequate facility for nursery raising	45.00	13	47.22	13	46.11	13
Low price of produce at time of harvesting	92.78	1	93.33	1	93.06	1
Lack of proper market in the area	81.11	3	84.44	3	82.78	3
High insect pest incidence	72.22	5	73.33	5	72.78	5
Poor produce procurement policy of government	33.33	18	34.44	17	33.89	18
Improper transport facilities	68.89	6	70.56	6	69.72	6
Scattered land holding	78.89	4	80.00	4	79.44	4

MPS = Mean per cent score

The present findings are supported with the findings of Singh *et al.* (2007) who reported that lack of technical guidance, lack of knowledge, high cost of inputs and non-availability of inputs at proper time were the major constraints which influenced the adoption of rice production practices by the farmers.

To find out difference in the constraints perceived by the small and marginal farmers in improved rice cultivation technology, 'Z' test was applied. The results are presented in Table 3.

Hypotheses:

NH_{01} : There is no significant difference between small and marginal farmers about constraints in adoption of improved rice cultivation technology.

RH_1 : There is significant difference between small and marginal farmer about constraints in adoption of improved rice cultivation technology.

Table 3: Comparison of constraints among small and marginal farmers in adoption of recommended improved rice cultivation technology

Category of respondents	Mean	±S.D.	Difference	'Z' Value
Small farmers	31.57	2.67	1.25	2.44**
Marginal farmers	32.82	2.93		

** Significant at 1 per cent level of significance

Table 3 reveals that calculated 'Z' value (2.44) is higher than tabulated 'Z' value at 1 per cent level of significance. So the result is statistically significant. Thus, null hypothesis (NH_{01}) was rejected and alternate hypothesis RH_1 entitled "There is significant difference among small and marginal farmers about constraints in adoption of improved rice cultivation technology" was accepted. It means that there was significant difference among both the categories of rice growers with respect to constraints perceived by them in adoption of rice production technology.

Further analysis of table clearly shows that small farmers have lower mean as compared to the marginal farmers. This reveals that small farmers had less constraint than marginal farmers in improved rice cultivation technology. The marginal farmers possessed more constraints which might be due to the fact that they have poor economic condition and knowledge level than small farmers so that results seems to be obvious in the study area.

CONCLUSION

The result of the study showed that 51.67 per cent respondent faced medium level of constraints in adoption of improved rice production technology. Whereas, 28.33 and 20.00 per cent respondents possessed low and high level of constraints respectively. It was also indicated that low price of produce at the time of harvesting, poor economic condition of the farmers, lack of proper market in the area, scattered land holding and insect pest incidence were major constraints perceived by the rice growers in adoption of improved rice cultivation technology in the study area. Findings indicated that there was a significant difference between small and marginal farmers with respect to constraints perceived by them in adoption of improved rice production technology.

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