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Constrains and suggestions in adoption of recommended rice production technology by the rice growers of Chhattisgarh

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Abstract

Various technologies are evolved by scientists including high yielding varieties for increasing productivity level and share profits to cultivators but still due to non-adoption of certain technologies, the productivity level is low. So, there still exists large and exploitable rice yield gap in India. Thus, the present study was conducted in Raipur District of Chhattisgarh to find out the constraints faced by the rice growers during adoption of recommended rice production technology and suggestions recommended by the respondents. Out of total four blocks of Raipur district, two blocks namely Arang and Abhanpur blocks from which five villages belonging to each selected block were chosen randomly to complete the proposed study. 10 rice growing farmers were chosen randomly from each of the selected villages (Rasni, Arang, Bhilai, Baihar, Bothali from Arang block and Jhanki, Bendri, Baktara, Abhanpur, Thelka-Bandha from Abhanpur block) for data collection so as to make a total of 100 respondents. The data were collected through personal interview, then compiled, tabulated and analysed by using various suitable and appropriate statistical tools for measurement to derive appropriate answer for the specific objective of the study. The constrains were categorized into four parts *viz.* bio-physical, socio-economic, technological and institutional constraints. The major constraints observed from the study were high cost of inputs (86.00%), lack of suitable technology (62.00%), Non-availability of crop insurance (61.00%) and High cost seeds (59.00%). The respondents suggested mainly on timely visit done by agricultural experts (87.00%), need for organizing more training programs (84.00%) and need of greater extension efforts to increase adoption (80.00%).

Keywords: Rice farming, adoption, technological gap, constraints, suggestion

1. Introduction

Chhattisgarh, the 26th state of the Indian Union, came into existence on November 1, 2000. Rice is the principal crop in the State and the central plains of Chhattisgarh are known as "Rice bowl of central India". About 80 per cent of the population in the State is engaged in agriculture and 43 per cent of the entire arable land is under cultivation. In terms of production of rice, Chhattisgarh comes in eighth position in India with 6.52 million tonnes growing in the area of 3.67 million ha and its productivity was 1773 kg/ha during 2019-20. However, there are around 37.46 lakh farm families in the State, with about 80 per cent farmers falling under small and marginal categories who have benefited only marginally in constrained environment. The growth in agriculture in the country has been quite uneven resulting in inequitable distribution of benefits in the recent years. High cost technologies with liberal use of inputs have resulted increase in production and productivity in agricultural endowed environment. However, in the State like Chhattisgarh where majority of the farmers are medium, small and marginal in constrained environment have benefited only marginally. Therefore, it is high time to pay attention to such farming through systematic studies about their occupational growth and examine whether these farming communities have responded as per expectation with regard to the acceptance and application to the scientific production technologies and techniques in their farming systems.

Various technologies are evolved by scientists including high yielding varieties for increasing productivity level and share profits to cultivators but still due to non-adoption of certain technologies, the productivity level is low. So, there still exists large and exploitable rice yield gap in India. This may be due to lack of technical know-how and either no or poor adoption of recommended technologies by the growers. Thus, there is still technological gap between recommended package of practices and actual adoption of the recommended package of practices by the rice growers. Adoption of recommended package of practices of rice production technology may be increased by finding out the constraints faced by the rice growers. Thus, the present study was conducted to find out the constraints faced by the rice growers during adoption of recommended rice production technology and to obtain the suggestions recommended by the respondents.

2. Methodology

The methodology covers the research design for

investigation. The technique of study which entails data collecting, association, inquiry, and ultimately outcome presentation, was planned in this manner. Hence, it gives information about scientific procedure adopted for the present investigation to draw rational, logical and meaningful conclusions. The present study was carried out in the States of Chhattisgarh during the year of 2021-22 and 2022-23. Out of four blocks of Raipur district, two blocks namely Arang and Abhanpur blocks were chosen for the study in the State of Chhattisgarh. Five villages belonging to each selected block had been chosen randomly to complete the proposed study so as to make a total of 10 villages namely Rasni, Arang, Bhilai, Baihar, Bothali from Arang block and Jhanki, Bendri, Baktara, Abhanpur, Thelka-Bandha from Abhanpur block. In this way, the total number of respondents were 100 rice growers. The data were collected by personal interview with the help of well prepared, structured and pretested interview schedule. Collected data were tabulated and processed by using appropriate statistical methods.

3. Results and Discussion

3.1 Constraints faced during adoption of recommended package of practices of rice

The data regarding the distribution of respondents according to constraints faced during adoption of the recommended package of practices of rice are presented in Table 1. The constraints are categorized into bio-physical constraints, socio-economic constraints, technological constraints and institutional constraints.

Table 1: Distribution of respondents according to constraints faced during adoption of the recommended package of practices of rice

Sl. No.	Constraints	Percentage	Rank
A.	**Bio-physical constraints**		
i.	Lack of quality seeds	44.00	III
ii.	Non-availability of pure HYV	40.00	VI
iii.	Fear of weed problems	43.00	IV
iv.	Inadequate irrigation facilities	41.00	V
v.	Uncertainty in release of canal water	43.00	IV
vi.	High cost seeds	59.00	I
vii.	Incidence of insect pests & diseases	50.00	II
B.	**Socio-economic constraints**		
i.	Labour scarcity and high labour charge	35.00	V
ii.	High cost of inputs	86.00	I
iii.	Non-availability of credit	52.00	III
iv.	Non-availability of suitable inputs	55.00	II
v.	Lack of subsidy for inputs	36.00	IV
vi.	Low market value	29.00	VI
C.	**Technological constraints**		
i.	Lack of technical help	50.00	II
ii.	Lack of knowledge	39.00	III
iii.	Lack of confidence	29.00	IV
iv.	Unwillingness	22.00	V
v.	Lack of suitable technology	62.00	I
D.	**Institutional constraints**		
i.	Lack of marketing	24.00	IV
ii.	Weak extension system	25.00	III
iii.	Non-availability of crop insurance	61.00	I
iv.	Insufficient training programme	53.00	II

From the study it was observed that regarding the bio-physical constraints, the respondents faced the constraints of high cost seeds (59.00%), incidence of insect pests & diseases (50.00%), lack of quality seeds (44.00%), fear of weed problems (43.00%), uncertainty in release of canal water (43.00%), inadequate irrigation facilities (41.00%) and non-availability of pure HYV (40.00%). Regarding the socio-economic constraints, the respondents perceived the constraints of high cost of inputs (86.00%), non-availability of suitable inputs (55.00%), non-availability of credit (52.00%), lack of subsidy for inputs (36.00%), labour scarcity and high labour charge (35.00%) and low market value (29.00%). Regarding the technological constraints, lack of suitable technology (61.00%), lack of technical help (50.00%), lack of knowledge (39.00%), lack of confidence (29.00%) and unwillingness (22.00%). Regarding institutional constraints, the respondents faced the constraints of non-availability of crop insurance (61.00%), insufficient training programme (53.00%), weak extension system (25.00%) and lack of marketing (24.00%).

3.2 Suggestions proposed by the respondents to increase the adoption of recommended package of practices of rice

In order to obtain the suggestions, the respondents were asked to express their opinion to overcome the difficulties while adopting the improved technologies. Thus, the finding reveals the suggestions proposed by the respondents as shown in the Table 2.

Table 2: Distribution of respondents according to suggestions suggested by them

Sl. No.	Suggestions	Percentage	Rank
1.	Improved seed should be provided in time and sufficient quantity.	12.00	IX
2.	Timely availability of fertilizer should be ensured	26.00	VIII
3.	Cost of fertilizers and weedicides should be reduced.	48.00	VI
4.	Credit should be available at low interest	66.00	IV
5.	More facilities of crop insurance should be provided	53.00	V
6.	Need of greater extension efforts to increase adoption	80.00	III
7.	More training programs are needed to be organized	84.00	II
8.	Timely visit should be done by agricultural experts.	87.00	I
9.	Demonstration of improved technology/ cultivation should be organized at village level frequently.	39.00	VII

The data evinces that in Chhattisgarh, almost all (87.00%) the respondents suggested on timely visit done by agricultural experts followed by 84.00 per cent, 80.00 per cent, 66.00 per cent and 53.00 per cent respondents who recommended need for organizing more training programs, need of greater extension efforts to increase adoption, availability of credit at low interest and provision of more facilities of crop insurance, respectively. Further respondents recommended on reduction of cost of fertilizers and weedicides (48.00%), organizing demonstration of improved technology/ cultivation at village level frequently (39.00%), assurance of timely availability of fertilizer (26.00%) and provision of improved seed in time and sufficient quantity (12.00%).

4. Conclusion

Based on the findings, the major constraints observed were high cost of inputs (86.00%), lack of suitable technology (62.00%), non-availability of crop insurance (61.00%) and high cost seeds (59.00%). From the study, it could be observed that since majority of the respondents comes under marginal farmers, so they cannot afford high costly technologies. Therefore, Government departments and related agencies should ensure that the crop insurance as well as the seeds and other required inputs are made available to the farmers in adequate time and quantity before the season starts to enhance adoption of recommended rice production technologies.

From the study, it was also evident that majority of the respondents suggested on timely visit done by agricultural experts, need for organizing more training programs, need of greater extension efforts to increase adoption, availability of credit at low interest and provision of more facilities of crop insurance. This poses a need for State Department of Agriculture, State Agricultural Universities, NGO's and other related agencies to organize more integrated and concentrated extension efforts more frequently to impart the knowledge and information regarding improved technologies on recommended package of practices of rice cultivation and it is also required to emphasis on regular off campus training programs for the farmers to bridge the gap. So, such extension approaches by the line department are necessary to organize in an intensified manner.

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