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Constraints Faced by the CAU-R1 Rice Growers in Adoption of Rice Variety CAU-R1

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A B S T R A C T

The study was conducted in Sawombung Block of Imphal East District, Manipur. The present study was undertaken with an objective to analyse the constraints faced by the CAU-R1 rice growers in adoption of the rice variety CAU-R1. The results revealed that the CAU-R1 rice growers faced bio-physical, socio-economic, technological and institutional constraints more severely. In case of bio-physical constraints, inadequate irrigation facilities (98.00%) stood first, followed by weed problems (97.00%),incidence of insect pest and diseases (86.00%) and lack of certified seed (53.00%). In case of socio-economic constraints, high cost of inputs (96.00%) was found to be the first constraint followed by non-availability of credit (93.00%), low market value (86.00%), lack of subsidy for inputs (85.00%) and high labour charge (76.00%). In case of technological constraints, unavailability of power tiller for ploughing in time (96.00%) was found to be the first constraint followed by lack of knowledge of package of practices (82.00%) and lack of technical help/ less contact with technical expert (76.00%). In case of institutional constraints, non-availability of insurance when crop fails (100.00%) was found to be the first constraint followed by insufficient training programme (96.00%), lack of co-ordination with Department of Agriculture, Marketing cooperatives and CAU-R1 growers (63.00%), lack of marketing (58.00%) and lack of storage facilities (35.00%).

Introduction

CAU-R1 locally known as *Tamphaphou* was released by Central Agricultural University (CAU) and this variety is widely grown in Imphal East district of Manipur. The rice variety CAU-R1 evolved from the cross between *Leimaphou*x BR1 with an objective to improve the leading high yielding variety (HYV) *Leimpaphou*in terms of better head rice recovery and genetic tolerance from most of the prevailing rice diseases and insect pests. The variety is suitable for cultivation in other North East Hill (NEH) states like Sikkim, Meghalaya, Mizoram, Nagaland, Arunachal Pradesh having similar situations as found in Manipur valley and hills. The variety is suitable for cultivation under all

possible methods of rice cultivation like direct seeding with sprouted seeds, conventional, System of Rice Intensification (SRI) and Integrated Crop Management (ICM) practices depending on the sources, technical capability and interest of the farmer. Keeping these facts in view, the present studied entitled "Constraints Faced by the CAU-R1 Rice Growers in Adoption of Rice variety CAU-R1" was undertaken with an objective to analyse the bio-physical, socio-economic, technological and institutional constraints.

Materials and Methods

Ex-post facto research design was adopted for the study. The present study was conducted in Imphal East district of Manipur. Imphal East district is divided into three blocks namely KeiraoBitra Block, Porompat Block and Sawombung Block.Out of these three blocks, Front Line Demonstration (FLD) on CAU-R1 rice variety was not demonstrated in Porompat Block. During the last four years from 2017-2020. CAU, Imphal has conducted Front Line Demonstrations (FLD) particularly in KeiraoBitra and Sawombung Block of Imphal East district. For the present study, Sawombung block was selected purposively as it has the maximum number of CAU-R1 rice growers and villages under CAU-R1 cultivation as compared to KeiraoBitra Block. Seven villages namely U-yumpok, Phaknung, Nongdam, Yumnam Khunou, Lamlai, Nongpok Kakching and Loushangkhong were purposively selected from Sawombung Block because these villages have the highest number of CAU-R1 growers as per secondary data obtained. We selected 50 per cent of the total registered CAU-R1 rice growers from seven villages ie., 26 farmers, 15 farmers, 12 farmers, 5 farmers, 7 farmers, 25 farmers and 10 farmers each from U-Yumpok, Phaknung, Nongdam, YumnamKhunou, Lamlai, Nongpokkakching and Loushangkhong respectively making a sample size of 100 respondents through random sampling without replacement method. The data were collected through personnel interview method. Similar research findings of various researchers revealed that the constraints faced by farmers were related to pest and control (90%), farm yard manure (70%), insufficient water for crop irrigation (62.50%); constraints like high cost of inputs, lack of finance and expensive labour were main financial constraints faced by rice farmers at 48.75 percent, 45.00 percent and 41.25 percent respectively (Augustin *et al.*, 2013). The constraints faced by paddy growers were lack of knowledge in the practices namely recommended dose of fertilizers, control measures of pests and diseases, identification of pests and diseases, recommendation of chemical weed control measures in paddy, high cost of fertilizers and pesticides, high labour charges at the time of transplanting and harvesting, labour shortage at the time of transplanting and harvesting and short supply of fertilizers at required time, low market price of paddy and poor contacts of extension workers with farmers (Maheriya *et al.*, 2014). The major constraint in cultivation of rice was as pest and disease followed by weed problem and labour non-availability (Churpal *et al.*, 2015). The major constraints faced by farmers in adoption of selected agricultural technologies of rice crop were shortage of labourers, unavailability of fertilizer at proper time and lower market price of produce (Karangami *et al.*, 2019). The major problem faced by the rice cultivators were inadequate availability of quality seed at proper time (Medhi *et al.*, 2020). The draft schedule was pre-tested in the non-sample area to detect any ambiguity or confusion of wordings in the statement.

After the pre-testing, the questions/ statements of the schedule were revised keeping in context the views of the respondent. After making necessary modifications, the final schedule was administered to draw the response from the respondents. The respondents were requested to discuss the problems faced by them during CAU-R1 cultivation. Each respondent were asked to indicate his/her opinion on the basis of their response (Yes/No). If the response was positive, a score of 1 was assigned and a score of 2 was assigned for negative response. The constraints faced by the CAU-R1 rice growers were categorized on the following basis:

Sl.No.	Category	Score
1.	Yes	1
2.	No	2

Results and Discussion

Bio-physical constraints

Inadequate irrigation facilities (98.00%) ranks first under bio-physical constraints followed by weed problems (97.00%), incidence of insect pest and diseases (86.00%) and lack of certified seed (53.00%).

Socio-economic constraints

High cost of inputs (96.00%) was found to be the first constraint followed by non-availability of credit (93.00%), low market value (86.00%), lack of subsidy for inputs (85.00%) and high labour charge (76.00%).

Technological constraints

Unavailability of power tiller for ploughing in time (96.00%) was found to be the first constraint followed by lack of knowledge of package of practices (82.00%) and lack of technical help/ less contact with technical expert (76.00%).

Institutional constraints

Non-availability of insurance when crop fails (100.00%) was found to be the first constraint followed by insufficient training programme (96.00%), lack of co-ordination with Department of Agriculture, Marketing cooperatives and CAU-R1 growers (63.00%), lack of marketing (58.00%) and lack of storage facilities (35.00%).

Table.1 Constraints faced by the CAU-R1 rice growers

Sl. No.	Constraints	Frequency	Frequency in (%)	Rank
A	**Bio-Physical constraints**			
1.	Lack of certified seed	53	53.00	IV
2.	Incidence of insect pest and diseases	86	86.00	III
3.	Weed problems	97	97.00	II
4.	Inadequate irrigation facilities	98	98.00	I
B	**Socio-economic constraints**			
1.	High cost of inputs	96	96.00	I
2.	High labour charge	76	76.00	V
3.	Non-availability of credit	93	93.00	II
4.	Lack of subsidy for inputs	85	85.00	IV
5.	Low market value	86	86.00	III
C.	**Technological constraints**			
1.	Lack of technical help/less contact with technical expert	76	76.00	III
2.	Unavailability of power tiller for ploughing in time	96	96.00	I
3.	Lack of knowledge of package of practices	82	82.00	II
D	**Institutional constraints**			
1.	Lack of marketing	58	58.00	IV
2.	Non-availability of insurance when crop fails	100	100.00	I
3.	Insufficient training programme	96	96.00	II
4.	Lack of co-ordination with Department of Agriculture, Marketing cooperatives and CAU-R1 growers	63	63.00	III
5.	Lack of storage facilities	35	35.00	V

In the present study, it was found that CAU-R1 rice growers faced bio-physical, socio-economic, technological and institutional constraints more severely. To overcome these constraints, this calls for attention of agriculture related departments and organisations to eliminate these constraints for enhancing adoption and increase in production. There is lack of coordination between the institutes and the farmers in regard to credit facilities and subsidy distribution. Government should take initiative for providing funds to the farmers. Crop insurance was found to be nil in the region. The insurance agencies should look in the matter and initiate crop insurance scheme in the region. Media owners should broadcast more agricultural programmes on both radio and television and make sure that the programmes are broadcast at appropriate and convenient times for farmers.

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