



Research Article

RELATIONSHIP BETWEEN THE EXTENT OF ADOPTION OF HIGH YIELDING AROMATIC RICE VARIETIES AND THEIR ASSOCIATED PRACTICES OF THE FARMERS IN JORHAT DISTRICT OF ASSAM

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Abstract: Assam Agricultural University and Regional Agricultural Research station, Titabar have introduced the high yielding aromatic rice varieties to the farming community with modern package and practices for increasing productivity as well as income level of farmers. The objective of the study was to ascertain relationship between the extent of adoption of high yielding aromatic rice varieties and their associated practices with selected social, personal, economic, communication and psychological characteristics of the farmers. Two sub-division under Jorhat district were selected for the study. The study was conducted with dependent variable extent of adoption and 10 independent variables categorized in different factors viz socio-economic, communication and socio-psychological factors. For the study 120 respondents were selected. Data were collected through well-structured interview schedule analyzed by chi-square test, co-efficient of correlation and multiple regression analysis. Education, land holding, annual income, mass media exposure, extension contact and economic motivation were positively significant with the extent of adoption of high yielding aromatic rice varieties of farmers. From regression analysis, the R^2 value indicates that all the variables put together could explain 57.2 percent to the total variation on the extent of adoption of high yielding aromatic rice varieties.

Keywords: Adoption, Aromatic rice, Package and practices

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Introduction

Aromatic rice constitutes a small but special group of rice which is considered best in quality. Scented or aromatic rice is nature's gift to the Indian sub-continent and human kind at large. Most of the trade of aromatic rice is from India, Pakistan and Thailand [1]. India is one of the important countries in the world in export of rice. In this context the Government of India have taken the different programmes for popularization of aromatic rice cultivation in the world. Basmati export market is a lucrative area which is one of aromatic rice that cannot be found anywhere else in the world.

Assam's economy is fundamentally based on agriculture. In Assam rice occupies about two-third of the total cropped area in the state. The soil, topography, rainfall and climate of the state are congenial for producing aromatic rice varieties. The aromatic rice of Assam is a unique class under Sali rice traditionally known as 'Joha'. This class of rice has high demand in domestic market and is used mainly for preparation of special dishes like table rice, Kheer, Pulao. The Joha rice cultivars are known for their unique aroma, superfine kernel, good cooking qualities and excellent palatability. Assam maintains a diverse gene pool of aromatic rice that differs in aroma intensity, durability, grain shape and size, production potentialities etc. No authentic data about area, production and productivity are available. About 5% of Sali rice area is occupied by Joha with an average yield of 1-1.5t/ha [2].

Materials and Methods

Two sub-division (Jorhat and Titabar) under Jorhat district of Assam were selected for the study. From these two sub-division three three ADO circle from each sub-division were randomly selected. And finally, from each selected ADO circle, a list of villages cultivating high yielding aromatic rice varieties (developed at RARS, Titabar) was prepared. From those lists two villages were selected randomly and total being twelve villages.

A list of farmers cultivating high yielding aromatic rice varieties (developed at RARS, Titabar) was prepared for each of the selected villages. From each of twelve villages ten (10) respondents from the total number of farmers growing high yielding aromatic rice varieties (developed at RARS, Titabar) were selected randomly. Thus, there were in total 120 respondents who constituted in the final sample of the study.

Extent of adoption was considered as dependent variable and other variables were categorized in three different factors namely socio-economic factor which includes the variable age, family type, education and land holding, socio-psychological factor includes the variable annual income, social participation, risk preference, and economic motivation and communication factor includes variable mass media exposure and extension contact were taken as independent variables in this study. Data were collected by interviewing the respondents personally with the help of a well-structured pre-tested interview schedule. Chi-square test, correlation co-efficient analysis and multiple regression analysis were applied for interpretation of the result.

Results and Discussion

From the chi-square test, it was found that the education of the respondents was positively and significantly associated with the extent of adoption of high yielding aromatic rice varieties [Table-1]. This reflects that respondents with higher degree of education are more interested in adoption of high yielding aromatic rice varieties.

From the correlation analysis, it was found that other variables i.e. land holding, annual income, mass media exposure, extension contact and economic motivation were positively and significantly correlated with the extent of adoption of high yielding aromatic rice varieties [Table -2]. Thus, it can be inferred that the respondents with higher degree of these variables are more interested in adoption of high yielding aromatic rice varieties.

On the other hand, age, social participation and risk preference had non-significant correlation with extent of adoption of high yielding aromatic rice varieties. This finding support the findings Saikia (1995) [3], Singha and Baruah (2011) [4], Borthakur *et al* (2014) [5], Roy and Bandyopadhyay (2014) [6] and Saikia (2016) [7].

Regression analysis was done to determine the contribution of these ten (10) variables in predicting extent of adoption of high yielding aromatic rice varieties. Since educational level and type of family are dummy variables so it takes the value 0 or 1 to indicate the absence or presence of some categorical effect. Here, for educational level illiterate is valued 0 and for other categories viz. (literate without formal schooling, primary school, middle school, high school, higher secondary, diploma/certificate course, graduate and above) was valued 1 likewise for type of family nuclear is valued 1 and joint is valued 0.

It is appeared from the [Table-3] out of ten (10) variables, the regression coefficient of type of family ($b = 0.9993$), annual income ($b = 1.036$), land holding ($b = 0.631$) and economic motivation ($b = 0.219$) were found to be significant. These four variables could, therefore, be termed as good predictors of extent of adoption of high yielding aromatic rice varieties.

Here, the co-efficient of multiple determinations (R^2) with ten independent variables was found to be 0.572. It indicates that the set of ten variables could explain together 57.2 percent to the total variation on the extent of adoption of high yielding aromatic rice varieties.

Table-1 Association of selected socio-personal characteristics of the respondents with overall extent of adoption of high yielding aromatic rice cultivation practices

SN	Independent variable	Chi test
1	Education level	22.56*
2	Type of Family	5.65 ^{NS}

*denotes significant at 0.05 level of probability, NS= Non-significant

Table-2 Correlation coefficient between independent variables and overall extent of adoption of high yielding aromatic rice cultivation practices

Independent variables	'r' value	't' value
Age	0.135 ^{NS}	1.48
Land holding	0.312*	3.57
Annual income	0.452**	5.504
Mass media exposure	0.206*	2.286
Extension contact	0.193*	2.137
Social participation	0.130 ^{NS}	1.424
Risk preference	-0.034 ^{NS}	0.369
Economic motivation	0.189*	2.090

** denotes significant at 0.01 level of probability

* denotes significant at 0.05 level of probability, NS= Non-significant

Table-3 Influence of the independent variables to the dependent variable-Regression Analysis

Variables	b value	't' value	R ²
Age	0.0297	1.632	
Educational level	0.8190	0.918	
Type of family	0.9993*	2.719	
Annual income	1.036**	3.062	
Land holding	0.631*	2.123	
Mass media exposure	0.1046	1.512	0.572
Extension contact	0.0298	0.230	
Social participation	0.3784	1.278	
Risk preference	-0.0715	-1.043	
Economic motivation	0.219**	2.13	

*Significant at 0.05 level probability (b= estimated regression co-efficient)

**Significant at 0.01 level probability

Conclusion

This study imparts that adoption process is a complex process where different factors play important. This study also revealed that there are some significant factors that influence the adoption of high yielding aromatic rice varieties such as education, land holding, annual income, extension contact and economic motivation. The success of high yielding aromatic rice varieties cultivation will give the benefits to the farming community due to new market segment in Assam as well as in India.

Application of research: To find out the extent of adoption of aromatic rice varieties of farmers in Jorhat district to know the suitability and feasibility of the selected varieties developed by Assam Agricultural University.

Research Category: Extent of Adoption

Abbreviation: NS-Non significant, d.f- Degrees of freedom

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