ADOPTION OF SELECTED TRANSPLANTED AMAN TECHNOLOGIES BY THE FARMERS

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ABSTRACT

The main purpose of the study was to determine the extent of adoption of selected T. Aman technologies and to explore its relationship with the selected characteristics of the farmers. The study was conducted in two villages of Pingna union under Sarishabari upazilla of Jamalpur district. Data were collected from randomly selected 130 T. Aman growers during 12th August to 18th October, 2006. Findings revealed that overwhelming majority (80 %) of the farmers were found to have medium to high adoption while only 20 % farmers belonged to low adoption of selected T. Aman technologies. Data also revealed that among eight selected characteristics, education, farm size, annual family income, organizational participation and extension media contact were found to have positive significant relationships with their adoption of selected T. Aman technologies. Other variables namely age, commercialization and cosmopolitness had no significant relationship with their adoption of selected T. Aman technologies.

Key words: adoption, selected technologies, transplanted aman

INTRODUCTION

Rice is the major food crop in Bangladesh and covers about 80 percent of the total cultivable land. It grows under irrigated, rainfed and deep water conditions in three different seasons. Rice alone constitutes 95 percent of the food grain production in Bangladesh (Julfiquar *et al.* 1998).

Bangladesh has three main rice growing seasons which are Aus, Aman and Boro and among these Aman comprised about 52.46 percent of our gross cropped area of rice production. The cultivation of T. Aman rice shows an increasing trend since several years with rapid intensification of land. It shares about 47.48 percent of total rice production (BBS, 2005).

Cultivation of T. Aman rice consists of a package of technologies such as quality seeds, raising of seedling, balance dose of fertilizers, insect and disease control, irrigation etc. A very few previous research works had tried to find out the adoption of these technologies. Therefore the present researchers felt necessity to conduct the research work with the following objectives:

1. To determine and describe some selected characteristics of the farmers
2. To determine the extent of adoption of selected T. Aman production technologies by the farmers and
3. To explore the relationship between the selected characteristics of the farmers and their extent of adoption of selected T. Aman production technologies.

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METHODOLOGY

Two villages namely Kawamara and Medhur of Pingna union under Sarishabari upazila of Jamalpur district were purposively selected for the study. There were 650 T. Aman growers in these villages which constituted the population of the study. One hundred and thirty T. Aman growers were selected proportionately randomly as the sample of the study by taking 20 percent from the population. Data were collected by using face to face interview with the help of a structured interview schedule during 12th August to 18th October, 2006.

T. Aman growers' characteristics such as age, level of education, farm size, annual family income, organizational participation, extension media contact, commercialization and cosmopoliteness were considered as independent variables while adoption of selected T. Aman production technologies was the dependent variable. The selected technologies were recommended T. Aman varieties, line transplanting method, recommended doses of fertilizers, supplementary irrigation and use of IPM.

Measurement of dependent variable

Adoption of selected T. Aman production technologies was measured by Adoption Quotient as the following formula:

$$AQ = \frac{\sum u/p}{y \times n} \times 100$$

Where,

u = Used area   y = Years of technology use

p = Potential area   n = Number of technologies

Using above formula, adoption of selected T. Aman production technologies score of a respondent could range from 0-100, while 0 indicating no adoption and 100 indicating highest adoption.

Statistical measure: Various statistical measures such as number, percentage, distribution, mean and standard deviation were used in describing the selected characteristics of the farmers. To find out the relationships, Pearson's product moment correlation co-efficient was computed. Five (0.05) percent level of significance with relevant degrees of freedom was considered to reject or accept any null hypothesis throughout the study.

RESULTS AND DISCUSSION

Selected Characteristics of the Farmers

Summary profiles of the selected characteristics of the farmers are presented in Table 1. The data revealed that majority of the respondents were young and middle aged (71.5 %) and illiterate (56.2 %). Most of them possess small to medium farm (80.8 %) and very low to low annual family income (76.9 %). The highest portion of the respondents had no or low participation in organization (60.8 %) and very low to low extension contact (90 %). The majority of the respondents had no or low commercialization (63.8 %) and very low to low cosmopoliteness (92.3 %).

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Table 1. Distribution of the respondents according to the selected characteristics

Characteristics	Categories	Number	Percent	Mean	S.D.
Age	Young	31	23.8	43.57	12.19
	Middle	62	47.7		
	Old	37	28.5		
Education	Illiterate	73	56.2	3.16	3.71
	Primary education	17	13		
	Secondary education	28	29.3		
	Above secondary education	2	1.5		
Farm size	Small farm	41	31.5	0.86	0.48
	Medium farm	64	49.3		
	Large farm	25	19.2		
Annual family income	Very low income	39	30	48176	29175
	Low income	61	46.9		
	Medium income	30	23.1		
Organizational participation	No participation	32	24.6	6.29	5.9
	Low participation	47	36.2		
	Medium participation	28	21.5		
	High participation	23	17.7		
Extension media contact	Very low contact	46	35.4	7.12	2.86
	Low contact	71	54.6		
	Medium contact	13	10		
Commercialization	No commercialization	44	33.8	26.77	26.09
	Low commercialization	39	30		
	Medium commercialization	25	19.3		
	High commercialization	22	16.9		
Cosmopoliteness	Very low cosmopoliteness	67	51.5	6.63	1.97
	Low cosmopoliteness	53	40.8		
	Medium cosmopoliteness	10	7.7		

Adoption of selected T.Aman technologies

In this study five important dimensions were taken into consideration for determining adoption of Transplanted Aman technologies. The five dimensions were recommended Transplanted Aman varieties, use of line transplanting method, recommended doses of fertilizers, supplementary irrigation and use of IPM.

The adoption score of these five technologies ranged from 25.20 - 89.40 against the possible range of 0-100. The average was 56.14 with a standard deviation of 19.19. Based on the adoption score, the farmers were classified into three categories: "low adopters", medium adopters" and "high adopters".

Data presented in the Table 2 that the highest proportion (43 %) of the farmers felt under the medium adopter's category, while 37 % had high adopters and only 20 % had low adopters. Thus, an overwhelming majority (80 %) of the farmers had medium to high adoption.

Table 2. Distribution of the respondents according to their adoption of selected T. Aman production technologies

Categories	Number	Percentage	Mean	Standard deviation
Low adopters (up to 33)	26	20		
Medium adopters (34-66)	58	43.35	56.14	19.19
High adopters (above 66)	46	36.65		
Total	130	100		

Relationships between the selected characteristics of the farmers and their adoption of selected T. Aman production technologies

The summary of the results of the correlations co-efficient between the selected characteristics of the respondents and their adoption of selected Transplanted Aman technologies is shown in Table 3. The findings revealed that among 8 characteristics of the respondents, 5 characteristics namely education, farm size, annual family income, organizational participation, and extension media contact were found to have positive significant relationship with their adoption of selected Transplanted Aman technologies. Education enables individuals to gain knowledge and thus increase their power of understandings. Consequently, their out look is broadened and horizon of knowledge is expanded which is helpful for increasing the adoption of selected Transplanted Aman technologies. This finding also confirm with earlier findings of Hossain (2006).

Farm size and annual family income of the respondents showed significant relationships with their adoption of selected Transplanted Aman technologies. The findings are quite rational, because adoption of selected Transplanted Aman technologies is relatively costly. Hence, large farmers get more scope than the small farmers as they can invest money for adoption of selected rice production technologies. Ahaduzzaman (1999) observed the similar findings in his study.

Organizational participation and extension media contact of the respondents was significantly correlated with their adoption of selected Transplanted Aman technologies in positive direction which means that the farmers are supposed to have better interaction with government officials that make them able to participate in different organizations and obviously they always come in contact with various extension personnel in their daily life and these make their attitude favorable for adoption of selected technologies. Talukder (2006) found significant positive relationship of extension media contact with adoption of rice production technologies.

Table 3. Co-efficient of correlation of the selected characteristics of the farmers and their adoption of selected T. Aman technologies

Dependent variable	Independent variables	Computed value of "r"	Table value of "r" at 128 degree of freedom	
			0.05%	0.01%
Adoption of selected T. Aman technologies	Age	0.167 NS		
	Level of education	0.177*		
	Farm size	0.447**		
	Annual family income	0.396**		
	Organizational participation	0.370**	0.172	0.226
	Extension media contact	0.357**		
	Commercialization	0.140 NS		
	Cosmopoliteness	0.166 NS		

NS = Non significant
*= Significant at 0.05 level of probability
** = Significant at 0.01 level of probability

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Rest of the variables namely age, commercialization and cosmopolitness had insignificant positive relationship with their adoption of selected Transplanted Aman technologies.

CONCLUSION

In this study, it was observed that four-fifth (80 %) of the farmers had medium to high adoption of selected Transplanted Aman technologies. However, to meet the evergrowing demand of food, there is a need to further enhance the rate and extent of adaption of selected transplanted Aman technolosis amongs the farmers. Again it was found that education, farm size, annual family income, organizational participation, and extension media contact of the farmers were found to have positive significant relationships with their adoption of selected Transplanted Aman technologies. So it may be concluded and recommended that the concern authorities should take necessary steps to increase the aforesaid positively related characteristics of the farmers, so that they could increase their adoption of Transplanted Aman technologies.

REFERENCES

Ahaduzzaman, M.S.K. (1999). Adoption of Modern T. Aman Technologies among the Rice Growers in Sadar Thana of Rangpur District. *M.S. (Ag. Ext. Ed.) Thesis.* Department of Agricultural Extension Education. Bangabandhu Sheikh Mujibur Rahman Agricultural University. Gazipur.

BBS, (2005). Statistical Year Book of Bangladesh. Bangladesh Bureau of Statistics. Ministry of planning, Government of the People's Republic of Bangladesh.

Hossain, K. (2006). Adoption of selected high yielding varieties of rice by the farmers of Rajpat union under Kasiani upazila in Gopalganj District. *M. Sc. (Ag. Ext.) Thesis.* Department of Agricultural Extension and Information System, Sher-e-Bangla Agricultural University, Dhaka.

Julfiquar, A. W., Haque M. M. , Enamul Haque A. K.G. M. and Rashid. M. A. (1998). Current Status of Hybrid Rice Research and Future Programme in Bangladesh. A country report presented in the workshop on use and development of hybrid rice in Bangladesh. May 18-19, BARC, Dhaka.

Talukder, M M.R (2006). Adoption of Selected Rice Production Practices by the Farmers of Char-land of Gomoti River. *M.Sc. (Ag. Ext. Ed.) Thesis.* Department of Agricultural Extension and Information System, Sher-e-Bangla Agricultural University, Dhaka.