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FARMERS' ATTITUDE TOWARDS PARIZA RICE CULTIVATION IN NILPHAMARI DISTRICT

M.S. Rahman[1], S.K. Chawdhury[1], M.F. Hasan[1], M.R. Karim[1] and M.H.A. Amin[2]

[1]Department of Agricultural Extension;[2]Department of Agroforestry and Environment, Hajee Mohammad Danesh Science and Technology University, Dinajpur 5200, Bangladesh

ABSTRACT

The main purpose of the study was to determine the attitude of the farmers towards pariza rice. Data were collected from 90 randomly selected farmers out of 500 farmers of Nilphamarisadarupazila under Nilphamari district during April to May, 2015 through personal interview. Simple and direct questions with different scales were used to obtain information. Co-efficient of correlation (r) was computed in order to explore the relationships between the farmers' attitude towards pariza rice cultivation and their nine selected characteristics. The major portion (56.7 percent) of the respondents had moderately favorable attitude compared to 28.9 percent having slightly favorable attitude and only 14.4 percent had highly favorable attitude towards pariza rice cultivation. The correlation test showed that training received, extension media contact and cosmopoliteness had positive significant relationships while age and family size had negative significant relationship. Education, farm size, farm size under pariza rice cultivation and annual income had no significant relationship with the farmers' attitude towards pariza rice cultivation. The highest problem faced by the farmers' in cultivation of pariza rice was 'Pariza rice is highly infested by insect and diseases' and the least problem was 'Market price of this rice is lower than other rice varieties'.

Key words: Attitude, pariza rice and farmers

INTRODUCTION

Bangladesh is making progress in reducing its poverty rate to 32.0 percent of the population (Bhowmick and Nilanjan 2013). Agriculture is an important sector in the economic development and poverty alleviation. The role of agriculture has played in the industrial growth and development of most of the industrialized countries in the world cannot be over emphasized. Agriculture in Bangladesh is the way of life of the rural people. Despite its declining importance as a contributor to the Gross Domestic Product (GDP), agriculture still represents an important sector to the national economy and to rural livelihoods in Bangladesh (Stads*et al.* 2008).

Bangladesh Rice Research Institute (BRRI) evolved short duration rice variety BRRI dhan33 in 1997. During 2003, 2004 and 2005, RDRS experimented on the compatibility of the variety in the local cropping pattern and environment. In 2006 and 2007 RDRS and other agencies in the area extended the variety among the farmers of the region with the intention to integrate the variety in the cropping pattern to mitigate *monga*and create job opportunity for agriculture day laborers.

Recent introduction of another short duration rice variety 'Pariza' has created new hopes for the farmer in the North-West Bangladesh. The variety is suitable for cultivation in the fallow land between Boro rice harvests and planting of T-Aman, as it taken 70-75 days for maturation using 20 days old seedlings. If DSR method is applied, it takes 90 days for maturation from the date of seed sowing.

Pariza rice is cultivated at many villages in northern districts of Bangladesh this year with the technical support of NGO RDRS Bangladesh. A good numbers of farmers in the villages harvested their additional. Pariza rice can be cultivated between Boro and Aman season, when the land remains fallow. Each hectare of land requires around 60-70 agricultural laborers to harvest and post-harvest operations.

Once the regions of Rangpur were considered among remotest in the country and their people among the poorest and least developed. But the years since Independence in 1971 have seen great changes in both physical and the social landscapes. The opening of the Bangabandhu Bridge in 1998 was a significant step forward in linking the northwest to the rest of the country.

*Corresponding author: MS Rahman,Department of Agricultural Extension, Hajee Mohammad Danesh Science and Technology University, Dinajpur 5200, Bangladesh, Cell: 01717 142871

Knowledge and awareness of risks strongly influence how risks are perceived and managed (Peres *et al.* 2006). Awareness can be based on practical experience, but farmers also incorporate new information and concepts from colleague farmers, agricultural extension officers, field schools, input suppliers, the media, development workers and others into their knowledge base. Cropping intensity is the number of crops grown in a year in a same land. The northern Bangladesh remains one of its most vulnerable, with regular flooding and riverbank erosion of the Brahmaputra and other rivers dominating life, particularly in the east of the region. The climate is colder and drier than the rest of the country, also causing problems for the poor, and drought in the west. Therefore, to sustain a new technology in this area farmer's attitude has crucial importance.

Farming is much more diverse than in the past and is often combined with other activities. New knowledge is generated by farmers, researchers (basic and applied) and private companies. The old linear model of technology transfer (from scientists to the users) is therefore outdated and should be replaced by an interactive model of networking systems, which integrate knowledge production, adaptation, advice and education. In order to justify the farmers' attitude about a new release technology named pariza rice this research has been undertaken. In view of the above stated problems, the main objectives of the study was to determine the farmers attitude towards pariza rice cultivation; to explore the relationship between selected characteristics of the farmers with the farmers attitude towards pariza rice cultivation and to identify the problems faced by the farmers in cultivation of pariza rice.

MATERIALS AND METHODS

Locale of the Study: Nilphamarisadarupazila under Nilphamari district was selected as the study area for this research. Nilphamari district was selected purposively due to that most of the farmers are well known about pariza rice in this area. Sadarupazila of Nilphamari district was selected randomly. This research aimed at the population of all the farmers who cultivate pariza rice. Among all the unions of sadarupazilaKundupukur and Topamari unions were selected randomly for conducting the study.

Population and Sample: The farmers of Sadarupazila of Nilphamari district was the population of the study. An updated list of 500 farmers was collected from Upazila Agriculture Office. Out of them, a sample of 90 farmers (18 percent) was selected by random sampling method. Simultaneously, a reserve list of 10 farmers was made in order to use in case of unavailability of sampled farmers.

Measurement of Independent Variables: The nine selected characteristics namely age, education, family size, farm size, farm size under pariza rice cultivation, annual income, training received, extension media contact and cosmopoliteness of the respondent's constitute the independent variables of this study. The variables were measured using appropriate scales and scores.

Measurement of Attitude towards Pariza Rice Cultivation: Ten statements on various aspects of pariza rice cultivation were asked to the respondents. The number of positive statements was 5 and that of negative statements was also 5. The positive and negative items were arranged randomly in the schedule in order to facilitate the respondents' real attitude to be revealed. The respondents were asked to indicate for each of the statement whether they strongly agreed, agreed, undecided, disagreed and strongly disagreed with a corresponding score of 4,3,2,1 and 0 for the positive items and vice-versa for the negative items.

The score of a respondent's attitude towards positive and negative statements of pariza rice cultivation were computed by summing his responses to all the items. Hence, scores of the respondents could range from 0 to 40; 0 indicating highly unfavorable attitude and 40 indicating highly favorable attitudes towards pariza rice cultivation.

Measurement of Problems on Pariza Rice Cultivation: The farmers were requested to mention the problems on pariza rice cultivation problems. In this case an open ended question was used. Then the mentioned problems were ranked on the basis of number of citations on the respective areas.

Data Collection: Data were collected during the period from April to May, 2015. By using the pre-tested questionnaire, the researchers were first established rapport with the respondents and clearly explain the objectives of the study by using local language as far as possible. As a result, the respondents will furnish proper responses to the questions and statements without any hesitation.

Statistical Analysis: The SPSS computer program was used for analyzing the data. Various descriptive statistical measures such as frequency, number, percentage, mean, standard deviation and rank order was used for categorization and describing the variables. Pearson's Product Moment Correlation coefficient (r) was used for testing the relationships between the concerned variables.

RESULTS AND DISCUSSION

Selected Characteristics of the Respondents: Nine selected characteristics of the respondents were studied in this research, which were the independent variables.

Age: The highest proportions (40.0 percent) of the farmers were young aged compared to 38.9 percent

of them being middle aged and 21.1 percent old (Table 1).

Table 1. Distribution of the respondents according to their age

Range	Categories	Respondents (N=90) Frequency	%	Mean	SD
22-75	Young (≤35)	36	40.0	41.26	10.98
	Middle(36-50)	35	38.9		
	Old (>50)	19	21.1		

Education: The highest proportion (55.6 percent) of the farmers had education up to secondary level compared to 18.9 percent having above secondary level education. About 16.6 percent of them can sign only while only 8.9 percent of the farmers were primary level educated (Table 2).

Table 2. Distribution of the respondents according to their education

Range	Categories	Respondents (N=90) Frequency	%	Mean	SD
0.50-14	Can sign only (0.5)	15	16.6	7.71	3.79
	Primary (1-5)	8	8.9		
	Secondary(6-10)	50	55.6		
	Above secondary (>10)	17	18.9		

Family size: The data furnished in the above table reveal that major portion (66.6 percent) of the respondents had small family size while 16.7 percent had medium family size and 16.7 percent had large family (Table 3)

Table 3. Distribution of the respondents according to their family size

Range	Categories	Respondents (N=90) Frequency	%	Mean	SD
2-10	Small (≤4)	60	66.6	5.07	1.41
	Medium (5-6)	15	16.7		
	Large (>6)	15	16.7		

Farm size: Data showed that near about half (47.8 percent) of the farmers were under medium farm size category followed by 43.3 percent and only 8.9 percent under small and large farm size category respectively (Table 4).

Table 4. Distribution of the respondents according to their farm size

Range	Categories	Respondents (N=90) Frequency	%	Mean	SD
0.20-7.5	Small (0.20-1.0)	39	43.3	1.51	1.44
	Medium(1.1-3.0)	43	47.8		
	Large (>3.01)	8	8.9		

Area under pariza rice cultivation: Data showed that overwhelming portion (91.2 percent) of the farmers were under marginal farm size category followed by 4.4 percent under small and 4.4 percent under medium farm size category (Table 5).

Table 5. Distribution of the respondents according to their farm size under pariza rice cultivation

Range	Categories	Respondents (N=90) Frequency	%	Mean	SD
0.05-0.65	Marginal (.02-.30)	82	91.2	0.19	0.12
	Small (.31-.60)	4	4.4		
	Medium (>.60)	4	4.4		

Annual income: Data presented in the Table 6 indicate that slightly more than four-fifths proportion (81.1 percent) of the respondents earned medium income and 11.1 percent of the respondents earned low income while only 7.8 percent of the respondents earned high income (Table 6).

Table 6. Distribution of the respondents according to their annual income

Range	Categories	Respondents (N=90) Frequency	Percent	Mean	SD
13-682	Low (≤32)	10	11.1	168.77	134.63
	Medium (33-312)	73	81.1		
	High (>312)	7	7.8		

Training received: Exactly three-fifth (60.0 percent) of the farmers had short training while 16.6 percent of the respondent had no training. About 15.6 percent had received long training and only 7.8 percent had received medium training on different aspects of agriculture especially on pariza short duration rice variety cultivation (Table 7).

Table 7. Distribution of the respondents according to their training received

Range	Categories	Respondents (N=90) Frequency	%	Mean	SD
0-12	No (0)	15	16.6	3.49	3.07
	Short (≤3)	54	60.0		
	Medium (4-6)	7	7.8		
	Long (>6)	14	15.6		

Extension media contact: A major proportion (65.6 percent) of the farmers had medium extension media contact compared to 23.3 percent of them having low extension media contact and 11.1 percent of the farmers had high extension media contact (Table 8).

Table 8. Distribution of the respondents according to their extension media contact

Range		Categories	Respondents (N=90)		Mean	SD
Possible	Observed		Frequency	%		
0-40	4-27	Low (≤7)	21	23.3	11.71	5.15
		Medium (8-17)	59	65.6		
		High (>17)	10	11.1		

Cosmopoliteness: Data showed that major portion (38.9 percent) of the farmers had high cosmopoliteness while 32.2 percent had medium cosmopoliteness and 28.9 percent had low cosmopoliteness (Table 9).

Table 9. Distribution of the respondents according to their cosmopoliteness

Range	Categories	Respondents (N=90)		Mean	SD
		Frequency	%		
Possible 0-18	Low (≤7)	26	28.9	10.16	3.28
	Medium (8-10)	29	32.2		
	High (>10)	35	38.9		

Farmers' attitude towards pariza rice cultivation: Observed attitude scores of the respondents ranged from 3 to 40. The mean value and the standard deviation were 24.21 and 10.48 respectively. Based on the attitude scores, the respondents were classified into three categories as shown in Table 10.

Table 10. Distribution of the respondents according to their attitude

Range		Categories	Respondents (N=90)		Mean	SD
Possible	Observed		Frequency	Percent		
0-40	3-40	Slightly favorable (≤14)	26	28.9	24.21	10.48
		Moderately favorable (15-34)	51	56.7		
		Highly favorable (>34)	13	14.4		

Data contained in Table 10 indicate that the major portion (56.7%) of the respondents had moderately favorable attitude compared to 28.9 percent having slightly favorable attitude and only 14.4 percent had highly favorable attitude towards pariza rice cultivation. It reveals that the majority (71.1%) of the respondents in the study area were in moderately to highly favorable attitude categories.

Relationship between Selected Characteristics of the Respondents and their Attitude towards Pariza Rice Cultivation

The selected characteristics constituted independent variables and the dependent variable was considered farmers attitude towards pariza rice cultivation. Pearson's Product Moment Correlation Co-efficient 'r' was used to test the null hypothesis concerning the relationship between any two variables. The summary results of test of correlation coefficient are shown in Table 11.

Table 11. Correlation between independent variables and dependent variable

Selected Characteristics	Computed r-value with 88 d.f.	Tabulated value of 'r'	
		5%	1%
Age	-0.345**	± 0.199	±0.259
Education	0.072^{NS}		
Family size	-0.228*		
Farm size	-0.038^{NS}		
Farm size under pariza rice cultivation	0.022^{NS}		
Annual income	-0.033^{NS}		
Training received	0.224*		
Extension media contact	0.357**		
Cosmopoliteness	0.215*		

* Correlation is significant at the 0.05 level.
** Correlation is significant at the 0.01 level.
NS= Not significant

Correlation analyses indicated that among nine selected characteristics training received, extension media contact and cosmopoliteness had positive significant relationships with their attitude towards pariza rice cultivation while age and family size had significant negative relationship. However, education, farm size,farm size under pariza rice cultivation and annual income of the farmers had no relationships with their attitude towards pariza rice cultivation.

Problems faced by the farmers in pariza rice cultivation: Farmers usually face several problems in pariza rice cultivation. For easy understanding of the problems faced by the farmers are listed in this section with their number of citation, percent and rank order (Table 12).

Table 12. Rank order of the problems faced by the farmers in pariza rice cultivation

Problems	No. of citation	%	Rank
Pariza rice is highly infested by insects and diseases.	81	90.00	1
All types of soil are not suitable for cultivating this rice.	72	80.00	2
This variety requires more water which causes difficulties in irrigation management.	60	66.67	3
The cultivation technique is more laborious.	55	61.11	4
Market price of this rice is lower than other rice varieties.	42	46.67	5

'Pariza rice is highly infested by insects and diseases' emerged as the 1st ranked problem opined by the farmers' (90.00 percent). The result might be due to that pariza rice is cultivated in the off season and in a small scale land. There is no other crop in the surrounding lands. So, this rice is extremely infested by the insects and diseases.

'Market price of this rice is lower than other rice varieties' is the last problem in the rank table as opined by the farmers. Pariza rice is an off season rice variety, so management practice is required more than the other on season crops. That is why cost of production become higher. Therefore, compare to other rice varieties market price of this rice is lower.

CONCLUSIONS

From the study it found that major portion (56.7%) of the respondents had moderately favorable attitude towards pariza rice cultivation. Thereafter, attitude of the farmers is not up to the mark. So, it may be concluded that the widespread cultivation of pariza rice will not be possible to a significant extent unless the concerned authorities (relevant GOs and NGOs) take proper steps to improve farmers' attitude towards pariza rice cultivation. Among nine selected characteristics of the respondents' age, family size training received, cosmopoliteness and extension media contact had significant relationship with their response towards pariza rice cultivation. It was thus proved that farmers' attitude is dependent with these characteristics of the respondents. As revealed by the respondents, pariza rice is highly infested by insects and diseases, all types of soil are not suitable for cultivating this rice were the major problems faced by the respondents. It might be recommended that the concerned GOs and NGOs should take necessary steps to increase positive attitude towards pariza rice cultivation for increasing cropping intensity. As farmers faced considerable amount of problems on pariza rice cultivation as it is an off season crop. It is therefore, recommended that concerned authorities should give due attention to the solution of the problems as soon as possible. It is also recommended that adequate technical support and training facilities should be extended to improve the knowledge of pariza rice cultivation of the farmers.

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