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OPINION LEADERSHIP OF IPM FARMERS IN DIFFUSION OF INTEGRATED PEST MANAGEMENT

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ABSTRACT

Maskawat MS, Bhuiyan MH, Ulla MS, Setu MWA, Hasan AFMM (2013) Opinion leadership of IPM farmers in diffusion of integrated pest management. *J. Innov. Dev. Strategy*. 7(2), 1-4.

The purpose of the study was to determine the extent of opinion leadership of the IPM farmers in diffusion of IPM technologies and to explore the relationships of the selected characteristics of the IPM farmers with their opinion leadership in diffusion of IPM technologies. Pearson's Product Moment Correlation was used to explore relationships among variables. Ten villages of Ashulia and Palthalia union of Savar Upazilla under Dhaka District was the locale of the study. Data were collected from 120 IPM farmers by using interview schedule during 15 June to 15 August, 2011. The findings revealed that the highest proportion (61.67%) of the IPM farmers had high extent of opinion leadership in diffusion of IPM while 27.50% of the IPM farmers had medium opinion leadership and 10.83% having low opinion leadership in diffusion of IPM. 61.68% IPM farmers were in young age, 49.17% farmers had secondary level education. Among 12 selected characteristics of the IPM farmers- education, family, organizational participation, contact with extension agents, exposure to agricultural programs through farm radio talk and exposure to agricultural programs through TV channel had significant positive relationship with their opinion leadership in diffusion of IPM technologies. Age, experience and farm size had negative but significant relationship with their opinion leadership in diffusion of IPM. On the other hand, exposure to agricultural programs through printed media and attitude towards the use of IPM had no significant relationships with their opinion leadership in diffusion of IPM.

Key words: farmers, IPM, diffusion, opinion leadership

INTRODUCTION

Agriculture sector is the single largest contributor to income and employment generation and accepted the challenge to achieve self sufficiency in food production. Agrarian economy of Bangladesh with the agriculture sector accounts for about 19.95 percent of Gross Domestic Product (GDP) (BBS 2011). In the past decade, agriculture sector contributed about 3 percent per annum to the annual economic growth rate. Over 80 percent of the population of Bangladesh or roughly 13 million households live in rural areas, and the agriculture sector employ around 60 percent of the labor force among which crop sector alone accounts for 55 percent of employment in Bangladesh (BBS 2011).

Agricultural research all over the world has developed useful technologies which, if used by the farmers in cultivation, will enormously increase agricultural production. So, the prerequisite for agricultural development is having the benefit of communication and knowing how of improved agricultural practices are disseminated among the farmers so that they can move forward to use them in production of crops. Dennis and Jock (1998) reported that regardless of source and socio-metric status, farmers will adopt new technologies and modify their resource and use when they believe that a proposed change is relevant to their circumstances and can help them to achieve their objectives. However, in fulfillment of farmers' objectives extension service has the potential role to increase the rate of adoption of modern agricultural technologies being directly involved in increasing awareness, in facilitating skill acquisition and helping farmers to understand a technology and its relevance to their circumstances and it is difficult for an extension worker alone to perform their duties effectively among such a large number of farmers. Now the question arises how this problem can be solved. Obviously, the answer is to involve the opinion leaders with the extension personnel in technology dissemination. However, rural development depends not only on technology generation but also on dissemination of technology as per the needs of the target groups in a particular farming system (Mettrick 1993). For effective dissemination of generated technologies like IPM, the combined effort of extension personnel along with the opinion leaders is vital. There are some people in the rural areas with better experience and leadership qualities to whom ordinary farmers go for suggestions and advice and their activities are, to a great extent, influenced by the opinion leaders. Agricultural extension work in the rural areas will be greatly facilitated if the extension agents can utilize the opinion leaders properly. Moreover, extension programs for example IPM will receive greater acceptance and participation of the people if their leaders are involved in those programs. Integrated Pest Management (IPM) is a systematic approach to manage pests which focuses on long-term prevention or suppression with minimal impact on human health, the environment and non-target organisms. Diffusion of IPM is taking place by farmer to farmer extension approach. That is through opinion leadership. In order to effective utilization of opinion leadership of IPM farmers, it is necessary to have a clear understanding about the nature of opinion leadership among the farmers in the rural area. Extension workers need to know the extent of opinion leadership exhibited by the farmers. For a clear insight, one also needs to ascertain if the characteristics of the IPM farmers are associated with their opinion leadership. Since opinion leaders play a crucial role in the transformation of information, it is important to study their communication behavior (Rogers 1983). Only few

researches have been conducted regarding the opinion leadership of IPM farmers in the perspective of Bangladesh.

In view of need for understanding the nature of opinion leadership in diffusion of IPM technologies, the researcher undertook this investigation entitled "Opinion Leadership of IPM farmers in diffusion of IPM" with the following purpose:

- To determine the extent of opinion leadership of IPM farmers in diffusion of IPM technologies;
- To discover and describe the socio-economic characteristics of IPM farmers;
- To explore the relationship between extent of opinion leadership of IPM farmers in diffusion of IPM with their selected characteristics.

MATERIALS AND METHODS

Ten randomly selected villages namely Ghughudia, Sinduria, Monohor, Boalia Para, Monodia, Dosaid, Basaid, Charabagh, Gouripur and Kumkumari of Ashulia and Pathalia unions of Savar upazilla under Dhaka District were the locale of the study. A list of 400 IPM farmers of ten villages mentioned by Upazilla Agriculture Officer (UAO) of Savar Upazilla (sub-district) was the population of the study. A randomly selected sample size was drawn from the list with the help of using *fx-570MS* model calculator through commanding (shift) + (Ran#) + (=) button keeping the value which was less than 400 and the value which was more than 400 was avoided. Thus 30 percent of 400 IPM farmers comprising 120 farmers including reserve list of 20 farmers was prepared to be interviewed in time of need. Data were collected from sample farmers with the help of a pretested interview schedule during the period from 15 February to 15 April, 2011.

For measuring extent of opinion leadership in diffusion of IPM score was determined using 5 point rating scale as regularly, often, occasionally, seldom and not at all; and scores were assigned as 4, 3, 2, 1 and 0 respectively. Twenty items were selected to determine the extent of opinion leadership of IPM farmers in diffusion of IPM. Thus, Opinion Leadership in diffusion of IPM score could range from 0 to 80, where 0 indicating no opinion leadership and 80 indicating very high opinion leadership.

Age of a respondent was measured by counting the years from his birth to the time of interview. Education of a respondent was measured in terms of classes passed by his/her formal education system (i.e. school, college and university). Opinion Leadership experience on IPM of a respondent was measured on the basis of his duration of practicing IPM technology. Farm size of the respondent was measured in terms of hectare as the size of his farm on which he continued his farm practices during the period of study. Average family education of a respondent was measured first by adding education score (Score 1 for one year of schooling) of all the family members and it was divided by the total number of family members. Annual family income of a respondent was measured in taka on the basis of total yearly earnings from agriculture and non agricultural sources of the respondents. Organizational participation of the respondents was measured on the basis of two dimension; nature of involvement and number of organizations in which the respondents were involved. The contact with extension agents (eight types) was measured by using five points rating scale as regularly, often, occasionally, rarely and not at all; and score was assigned as 4,3,2,1 and 0 respectively. The score could range from 0 to 32, where 0 indicating no contact with extension agents and 32 indicating high level of contact. Exposure to agricultural programs through farm radio talk, TV channels and printed media score was determined against 4 point rating scale as regularly, frequently, occasionally and not at all; and score was assigned as 3, 2, 1 and 0 respectively. Attitude towards the use of IPM of a farmer was measured by developing an attitude scale, basically Likert method of summated ratings was utilized in developing the scale which contained 10 statements out of which 5 statements were positive and 5 statements were negative. Scoring was done by assigning 5, 4, 3, 2 and 1 scores to the five alternatives: "strongly agree", "agree", "undecided", "disagree", and "strongly disagree", respectively in case of a positive and a negative statement.

RESULTS AND DISCUSSION

Extent of Opinion Leadership in Diffusion of IPM

The extent of Opinion Leadership in diffusion of IPM has been presented in Table 1. They range from 39 to 74 with an average of 64.33 and standard deviation 8.34.

Table 1. Categories of the extent of Opinion Leadership of IPM farmers in diffusion of IPM

Categories	IPM farmers (n=120)		Mean	SD
	Number	Percent		
Low Opinion Leadership (39-51)	13	10.83	64.33	8.34
Medium Opinion Leadership (52-64)	33	27.50		
High Opinion Leadership (>64)	74	61.67		
Total	120	100		

Source: Own study

Data presented in Table 1 reveals that the highest proportion (61.67%) of the IPM farmers have high extent of opinion leadership in diffusion of IPM. Fellow farmers come to their home to know about agricultural information. When a farmer faces any problem, he finds solution with the IPM farmers because he/she has influential power over the fellow farmers. These IPM farmers' opinion leadership qualities should use in the extension services because they can render substantial help to the extension workers to motivate farmers in adopting improved agricultural practices. Extension workers also need to locate such persons and utilize them in planning, execution and evaluation of extension educational programmes.

Selected characteristics of the IPM farmers

The findings on the farmers' selected characteristics have been discussed and a summary profile of these characteristics is presented in Table 2, which indicates an overwhelming majority (80.84%) of the respondents belonged to middle and young aged categories except a few (19.16%) with 'Primary level' and 'Secondary level' of education (77.5%). Large portion of the respondents had low to medium opinion leadership experience (80%), small farm size (78.33%), primary average family education (53.33%), medium to high annual family income (84.17%) and high extension contact with extension agents (59.17%). Majority of them had medium to high exposure to agricultural programs broadcast through farm radio talk (90%) while 75.17% through TV channels and 73.33% through printed media. More than three-fourth (82.50%) of the respondents formed medium to high favorable attitude towards the use of IPM.

Table 2. Salient features of the farmers selected characteristics

Characteristics	Range		Categories	Farmers		Mean	SD
	Possible	Observed		No.	%		
Age (in years)	-	27-56	Young (up to 35)	74	61.68	37.23	9.57
			Middle aged (36-50)	23	19.16		
			Old aged (>50)	23	19.16		
Education (in schooling years)	-	1-12	Primary level (1-5)	34	28.33	7.47	3.00
			Secondary level (6-10)	59	49.17		
			Above secondary level (>10)	27	22.50		
Opinion Leadership experience on IPM (in years)	-	3-10	Low experience (3-5)	41	34.16	6.56	1.93
			Medium experience (6-8)	55	45.84		
			High experience (>8)	24	20.00		
Farm size (in ha)	-	0.21-1.95	Small farm (0.2-1.0)	94	78.33	0.67	0.37
			Medium farm (1.01-3.0)	26	21.67		
			Large farm (>3.0)	00	00		
Average family education (in schooling years)	-	2-9	Primary (2-5)	64	53.33	4.87	1.94
			Secondary (6-10)	56	46.67		
			Above Secondary (≥ 10)	00	00		
Annual family income (in 'Thousand' taka)	-	65-305	Low annual income (65-145)	46	38.33	174.51	53.03
			Medium annual income (146-225)	55	45.84		
			High annual income (≥ 226)	19	15.83		
Organizational participation (in scale score)	-	11-22	Low participation (up to 14)	33	27.50	17.74	3.61
			Medium participation (15-18)	38	31.67		
			High participation (≥ 19)	49	40.83		
Contact with extension agents (in scale score)	0-32	11-26	Low extension contact (up to 9)	36	30.00	19.70	4.49
			Medium extension contact (10-20)	13	10.83		
			High extension contact (>20)	71	59.17		
Exposure to agricultural programs broadcast through farm radio talk (in scale score)	0-27	7-19	Low exposure (up to 11)	12	10.00	14.78	2.79
			Medium exposure (12-16)	67	55.83		
			High exposure (>16)	41	34.17		
Exposure to agricultural programs broadcast through TV channels (in scale score)	0-18	7-17	Low exposure (7-10)	19	15.83	12.60	2.24
			Medium exposure (11-14)	47	39.17		
			High exposure (>14)	54	45.00		
Exposure to agricultural programs through Printed media (in scale score)	0-39	7-26	Low exposure (7-13)	32	26.67	16.91	5.46
			Medium exposure (14-20)	51	42.50		
			High exposure (>20)	37	30.83		
Attitude towards the use of IPM (in scale score)	1-50	32-46	Low favorable attitude (32-36)	21	17.50	39.86	4.06
			Medium favorable attitude (37-41)	62	51.67		
			High favorable attitude (42-46)	37	30.83		

SD = Standard deviation

Source: Own study

Relationship between the selected characteristics of the IPM farmers and extent of opinion leadership of them in diffusion of IPM

An attempt was made to find out the relationship between the selected characteristics of the farmers and extent of opinion leadership of them in diffusion of IPM. Co-efficient of correlation results revealed that out of 12 selected characteristics of the respondents only 6 variables (i.e., education, average family education, organizational participation, contact with extension agents exposure to farm radio talk and exposure to TV channels) had significant positive relationship with extent of opinion leadership of the farmers in diffusion of IPM. Possible reason might be higher level of education, average family education, organizational participation, contact with extension agents, exposure to farm radio talk and exposure to TV channels induce and facilitate individuals to receive more agricultural information which helps individuals to increase his/her understanding and awareness on different aspects of agricultural information. On the other hand, age, experience on IPM and farm size of the respondents had significant negative relationship. Most of the IPM farmers are young in age. They have more opinion leadership in diffusion of IPM technologies than the medium and the old aged farmers. Hence, the age of the IPM farmers has negative influence on opinion leadership in diffusion of IPM technologies. They have little but effective experience than the older. Hence, there was negative but significant relationship between opinion leadership experience on IPM of the IPM farmers and their opinion leadership in diffusion of IPM technologies. They are the small land owners. So there was negative but significant relationship between farm size of the IPM farmers and their opinion leadership in diffusion of IPM technologies. Annual family income, attitude towards the use of IPM and exposure to Printed media had no significant relationship with extent of opinion leadership of the farmers in diffusion of IPM.

Table 3. Co-efficient of correlation between selected characteristics of the IPM farmers and their extent of opinion leadership

Independent variable	Computed value of 'r'	Dependent variable
Age	-.346**	Opinion leadership in diffusion of IPM
Education	.400**	
Experience on IPM	-.217*	
Farm size	-.216*	
Average family education	.273**	
Annual family income	.074 ^{NS}	
Organizational participation	.418**	
Contact with extension agents	.213*	
Exposure to farm radio talk	.182*	
Exposure to TV channels	.363**	
Exposure to Printed media	.102 ^{NS}	
Attitude towards IPM	.091 ^{NS}	

^{NS} Not significant, ** Significant at the 0.01 level, * Significant at the 0.05 level

Source: Own study

CONCLUSION

On the basis of data analysis and their logical interpretation the study revealed that 61.67 percent of the IPM farmers had high extent of opinion leadership in diffusion of IPM. From the findings it may be concluded that high opinion leadership was more or less widespread trait. The study also revealed that relatively younger people would exhibit opinion leadership in diffusion of IPM role to a higher extent than the older people. On the other hand, educational level up to a certain level is a prerequisite to function as opinion leaders effectively. Most of the IPM farmers are young in age and they are experienced but less than the older besides they are more literate than the older. Sometimes technology is diffused on influential power of the farmers rather than their income. Through participation in organizations, contacts with extension agents, exposure to agricultural programs through farm radio talk and TV channels individuals come in contact with other people. Such contacts help them to gain knowledge and skill from various sources as well as technology diffusion. Most of the farmers want quick crop production. But IPM is a slow process but environmentally sound. A careful analysis of the factors that affect diffusion of IPM, as has been revealed by the present investigation the extension worker may locate who are the opinion leaders in his area. This will, no doubt save time and energy of the extension workers to get them involved in implementing extension programmes effectively.

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