FARMERS' ATTITUDE TOWARDS ENVIRONMENT FRIENDLY VEGETABLE CULTIVATION

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Abstract

The study was conducted to determine farmers' attitude towards environment friendly vegetable cultivation and to explore the relationship of the selected characteristics with farmers' attitude. The study also identified constraints faced by farmers in relation to environment friendly vegetable cultivation. Data were collected from 100 randomly selected respondents of three selected villages under Sadar upazila of Moulvibazar district using a pre-tested interview schedule during February-March 2018. Farmers' attitude towards environment friendly vegetable cultivation (dependent variable) and was measured by 20 statements on 5-point scale and the eleven selected characteristics of the respondents. The highest proportion (40%) of the respondents had unfavorable attitude, 20% respondents had highly unfavorable attitude, 1% of them had neutral attitude, while 33% respondents had favorable attitude and 6% had highly favorable attitude towards environment friendly vegetable cultivation. The correlation analysis revealed that education, training received, time spent in vegetable cultivation, annual family income, annual income from vegetable cultivation, knowledge on environment friendly vegetable cultivation, organizational participation and credit received had significant positive relationship with the farmers' attitude towards environment friendly vegetable cultivation. The majority (70%) of the farmers faced medium constraints while 3% faced high and 27% faced low constraints during environment friendly vegetable cultivation.

Keywords: Farmers' attitude, vegetable cultivation, environment friendly.

Introduction

Vegetables are the cheapest source of vitamins, minerals and proteins which majority of people can buy easily. According to BBS (2019), vegetables are cultivated in 8.593 lakh hectares of land and annual production of vegetable is only 172.472 lakh metric tons. According to FAO, vegetable production has increased five times in the past 40 years. Bangladesh has scored 3rd in global vegetable production, next to China and India. The farmers are getting a huge profit from vegetable production which is changing their life. The farmers of Bangladesh are mostly dependent on pesticides to control the pests. Use of pesticides is expensive with some negative environmental consequences and

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increased health hazards to the growers and consumers of vegetables. It helps developing pest resistance to insecticides, destroys beneficial insects. To avoid such consequences and to increase the vegetable production at the same time, environment friendly practices are best for pest management. Environment friendly refers to those practices inflict minimum or no harm on the environment. The main idea behind environment-friendly vegetable cultivation has zero impact on environment. Environment- friendly practices can make major positive impact on environment. Nowadays DAE (Department of Agricultural Extension) is working with several projects all over the country. Every project has the major attention on environmental consideration in vegetable production by removal or reducing agro- chemicals. However, farmers of Bangladesh have poor knowledge on environment friendly vegetable cultivation. Most of the farmers of Bangladesh are poor. They have no enough money for buying expensive pesticides. Environment friendly practices help them to utilize the readily available source of biological control agents, tolerant genetic resource, modern cultivation practices, organic green manure and bio-fertilizer. So there is an urgent need to understand the potentiality and limits of environment friendly practices so that appropriate development choices can be made. Extension people can make new technology available to the vegetable growers through environment friendly vegetable cultivation training. However, before designing environment friendly practices training, it done for promoting sustainable production of safe vegetables.

Objectives of the Study

1. To determine farmers' attitude towards environment friendly vegetable cultivation and describe the socio-economic characteristics of the vegetable growers.

2. To find out the constraints faced by farmers in relation to environment friendly vegetable cultivation

3. To explore the relationships between farmers' attitude towards environment friendly vegetable cultivation and their selected characteristics.

Materials and Methods

The locale of the study was Durlovpur, Noldaria and Damia villages of Kanakpur union under Sadar upazila of Moulvibazar district. The selection was made on the basis of suggestions made by Upazila Agriculture Officer (UAO), Sub Assistant Agriculture Officer (SAAO), Union Parishad Member and officials of Sadar Upazila. A total number of 400 vegetable growers were listed. Out of 400, The lighted farmers 100 were was taken as randomly selected. Eleven socio-economic characteristics of the farmers viz age, education; family size, farm size,

training received, time spent in vegetable field, annual family income, annual income from vegetable cultivation, knowledge on environment friendly vegetable cultivation, organizational participation and credit received were independent variables. A interview schedule was used as data gathering instrument. Data were collected from the sample farmers through the personal interview schedule during February to March 2018.

If any respondent failed to understand any question, the researcher took utmost care explain the issue as far as possible. After completion of the interview, it was checked and editing was done in case of necessity. Data from the entire interview schedule were compiled, tabulated and analyzed according to the objectives of the study. If a respondent did not know how to read and write his literacy score was taken as zero (0). A score of 0.5 was given to that respondent who could sign his name only. Besides a respondent got actual score of one for every year of schooling i.e. '1' for class one, '2' for class two and soon. Training received score of a respondent was measured on the basis of number of days of training received from different agricultural organization. How much time a respondent spent in vegetable field was measured in hours/day considering average time spent per day. Annual income of a respondent was measured in Taka on the basis of last year total earnings from crop cultivation (without vegetables) and other sources in which the respondent as well as his family members were involved. Annual income of a respondent was measured in taka on the basis of last year total earnings from vegetable cultivation and was measured in thousand Taka and a score of 1 was assigned for each one thousand Taka. Possible scores for the knowledge on environment friendly vegetable cultivation of the respondents could range from 0 to 40, where 0 indicating no knowledge on environment friendly vegetable cultivation and40 indicate the very high knowledge on environment friendly vegetable cultivation. The organizational participation scores of a respondent could range from 0 to 30, where '0' indicated no participation and 30 indicated very high organizational participation. Credit received by farmers was expressed in Taka. A score of one (1) is given for each thousand taka. Measurement of the dependent variable was measuring the attitude of farmers a 5 point Likert scale was used. Constraints faced by the farmers in relation to environment friendly vegetable cultivation score obtained from all the constraints were added together to got the constraint confrontation score for a respondent. Score of a respondent could range from 0 to 27, while '0' indicating no constraint and 27 indicating high constraint. The procedure for categorization of data in respect of different variables will be elaborately discussed while describing those variables in chapter 4.

The data after collection were coded, compiled, tabulated and analyzed. Various statistical measures such as range, mean, percentage, standard deviation were used in categorizing and describing the dependent and the independent variables. For clarity of understanding, tables were used for presentation of

data. Pearson's Product Moment Coefficient of Correlation (r) was used to explore the relationship between the independent and the dependent variables. Throughout the study 1% and 5% level of probability was used to reject any null hypothesis.

Results and Discussion

Socio-economic characteristics of the vegetable growers

Eleven socio-economic characteristics of the vegetable growers were selected to describe and find out their relationships with attitude towards environment friendly vegetable cultivation. The characterizations are discussed in the following sections.

Age

The age score of the respondents ranged from 18 to 62 with an average of 39.4 and standard deviation of 10.30.Based on their age score, respondents were classified into three categories on the basis of their age following Hossain *et al.* (2011) as shown in Table 1.

Table 1. Distribution of the vegetable growers according to their age

Age group	Respondents		Mean	Standard deviation
	Number	Percent		
Young aged (up to 35 years)	34	34		
Middle aged (36 -50 years)	53	53		
Old aged (above 50 years)	13	13	39.4	10.30
Total	100	100		

Table 1 indicates that the middle aged category vegetable growers comprised the highest proportion (53%) followed by young aged category (34%) and the lowest proportion were made by the old aged category (13%). Data also indicate that the middle and young aged respondents constitute about 87% of the respondents. Young and middle aged people are generally receptive to new ideas and things. However, they might have valuable opinion in regard to use of environment friendly vegetable cultivation. Therefore, the extension worker should give proper attention to include the young and middle aged groups in their programs.

Education

The education score of the respondents ranged from 0-12, with an average of 4.94 and standard deviation of 3.98. Based on their education score, respondents were classified into four categories as shown in (Table 2).

Table 2. Distribution of the vegetable growers according to their education

Level of education	Respondents		Mean	Standard deviation
	Number	Percent		
Illiterate (0-0.5)	28	28		
Primary education (1-5)	26	26		
Secondary education(6-10)	42	42	4.94	3.98
Above secondary education (>10)	4	4		
Total	100	100		

Table 2 shows that vegetable growers under 'secondary education category' constitute the highest proportion 42% compared to 28% 'illiterate' category, 26% primary and 4% above secondary level category. Education broadens the horizon of outlook of vegetable growers and expands their capability to analyze any situation related to vegetable cultivation.

Family size

The family size score of the respondents ranged from 2 to 12 with the mean and standard deviation of 6.77 and 2.09 respectively. Based on their family size score, the respondents were classified into three categories as shown in (Table 3).

Table 3. Distribution of the vegetable growers according to their family size

Family size	Respondents		Mean	Standard deviation
	Number	Percent		
Small (up to 4)	15	15		
Medium (5-8)	65	65		
Large (above 8)	20	20	6.77	2.09
Total	100	100		

Table 3 shows that medium family size constituted the highest proportion 65% and the lowest 15% in small family size and 20% were large family size. The existence of traditional joint family culture, lack of awareness about family planning and lack of recreational facilities might be responsible for the highest proportion medium sized family in that area. The average family size of the vegetable growers of the study area (6.77) was higher than that of national average of 4.06 (BBS, 2016).

Farm size

The farm size score of the respondents ranged from 0.05 to 1.85 with an average of 0.39 and standard deviation of 0.36. Based on their farm size score, the

respondents were classified into three categories following (Hossain *et al.*, 2011) as shown in (Table 4).

Table 4. Distribution of the vegetable growers according to their farm size

Family size categories	Respondents		Mean	Standard deviation
	Number	Percent		
Marginal (< 0.2 ha)	39	39		
Small (0.2 - <1.0 ha)	56	56		
Medium (1- 3ha)	5	5	0.39	0.36
All	100	100		

Table 4 indicates that the small farm holder constituted the highest proportion 56% and the lowest 5% in medium farm holder and 39% had marginal farm. This was due to inheritance of little land from parents, selling of land for going foreign country; etc. The average farm size of the vegetable growers of the study area (0.39 hectares) was higher than that of national average (0.06 hectares).

Training received

The training received score of the respondents ranged from 0 to 8 with a mean and standard deviation of 2.85 and 2.24 respectively. Based on their length of training scores, the respondents were classified into three categories as shown in (Table 65).

Table 5. Distribution of the vegetable growers according to their training received

Duration/Length of training	Respondents		Mean	Standard deviation
	Number	Percent		
No training	19	19		
1 -5 days	68	68		
above 5 days	13	13	2.85	2.24
All	100	100		

Table 5 indicates that majority 68% of the respondents had low training, while 19% of them had no training and only 13% had medium training. Training makes the farmers skilled and helps them to acquire knowledge about the environment friendly vegetable cultivation. Trained farmers can face any kind of challenges about the adverse situation in their vegetable cultivation.

Time spent in vegetable field

Time spent in vegetable field score of the respondents ranged from 2 to 10 hrs/day with a mean of 5.81hrs/day and standard deviation of 1.82. Based on

their time spent in vegetable field score, the respondents were classified into three categories as shown in (Table 6).

Table 6. Distribution of the vegetable growers according to their time spent in vegetable field

Length of time	Respondents		Mean	Standard deviation
	Number	Percent		
up to 3 hrs	7	7		
4-7 hrs	69	69		
above 7 hrs	24	24	5.81	1.82
All	100	100		

Table 6 indicates that majority 69% of the respondents spent moderate time in vegetable field where24% spent long time and 7% spent short time in vegetable field. The findings of the study reveal that 93% of the farmers spent moderate to long time in their vegetable field. For that reason high income from vegetable cultivation were found. The study reveals that majority 94% of the respondents had medium to high income from vegetable cultivation. Another reason is that moderate or long time spent in the vegetable field ensures intensive care which ultimately increases the maximum production of yield.

Annual family income

The annual family income score of the respondents ranged from 62.30 to 700.00 with the mean and standard deviation of 157.08 and 81.91respectively. Based on their annual family income score, the respondents were classified into three categories as shown in (Table 7).

Table 7. Distribution of the vegetable growers according to their annual family income

Range of income	Respondents		Mean	Standard deviation
	Number	Percent		
up to 150.00	2	2		
150.00-250.00	86	86		
above 250.00	12	12	157.08	81.91
All	100	100		

Table 7 shows that majority 86% of the respondents had medium annual family income, 2% had low annual family income and 12% had high annual family income. The annual family income of the farmers of the study area was medium.

The reason might be due to the fact that most of the respondents of the study area were not only engaged in vegetable cultivation but also in other sources such as service, business etc.

Annual income from vegetable cultivation

The annual income from vegetable cultivation score of the respondents ranged from 17.70 to 247.00 with the mean and standard deviation of 45.83 and 27.95 respectively shown in (Table 8).

Table 8. Distribution of the vegetable growers according to their annual income from vegetable cultivation

Ranges of income from vegetable cultivation	Respondents		Mean	Standard deviation
	Number	Percent		
up to 18.00	6	6		
19.00- 73.00	85	85		
above 73.00	9	9	45.83	27.95
All	100	100		

Table 8 indicates that majority 85% of the respondents had medium annual income from vegetable cultivation, 9% had high annual income from vegetable cultivation and 6% had low annual income from vegetable cultivation. It also indicates that 91% of the respondents had medium to high annual income from vegetable cultivation. The average annual income from vegetable cultivation of the respondents of the study area was medium. The reason might be because they cultivate different types of vegetables in all year round.

Knowledge on environment friendly vegetable cultivation

Knowledge on environment friendly vegetable cultivation score of the respondents ranged from 7 to 32 against the possible range from 0 to 40 with a mean of 17.00 and standard deviation of 6.02 shown in (Table 9).

Table 9. Distribution of the vegetable growers according to their environment friendly vegetable cultivation

Knowledge Score	Respondents		Mean	Standard deviation
	Number	Percent		
up to 10	16	16		
11 -23	66	66		
above 23	18	18	17.00	6.02
All	100	100		

Organizational participation

The observed organizational participation score of the respondents ranged from 0 to 10 with a mean of 5.19 and standard deviation of 2.56. Based on their organizational participation score, the respondents were classified into three categories as shown in (Table 10).

Table 9 shows that majority 66% of the respondents had medium knowledge, 16% had poor knowledge and 18% of the respondents had high knowledge on environment friendly vegetable cultivation. The study showed that most of the respondents of the study area were more or less had some educational quality and they were very conscious about environmental pollution. Again most of the farmers of the study area were poor and they had little land for vegetable production. They preferred environment friendly practices as they rarely sell their vegetables at market rather they consumed it.

Table 10. Distribution of the vegetable growers according to their organizational participation

Participation Score	Respondents		Mean	Standard deviation
	Number	Percent		
up to 2.00	17	17		
3.00-7.00	64	64		
above 7.00	19	19	5.19	2.56
All	100	100		

Table 10 shows that majority 81% of the respondents had low to medium participation in different organization where 17% had low organizational participation, 64% had medium organizational participation, and another total 19% respondents had high organizational participation. Organizational participation helps an individual to find out solutions to their own problems as well as other social issues. A great majority of the farmers in the study area had less organizational participation. The study revealed that farmers felt less interest in organizational participation. Again their education level was not so high and they felt hesitate in organizational participation. They were busy in earning their livelihood, so most of the farmers were indifferent in organizational participation. More organizational participation could create coordinated capability and capacity to adopt environment friendly vegetable cultivation.

Credit received

The credit received score of the respondents ranged from 0 to 30 with the mean and standard deviation of 10.70 and 6.89 respectively shown in (Table 11).

Table 11. Distribution of the vegetable growers according to their credit received

Credit Score	Respondents		Mean	Standard deviation
	Number	Percent		
up to 3	14	14		
4-17	68	68		
above 17-30	18	18	10.70	6.89
All	100	100		

Table11 indicates that highest portion (68 %) of the respondents had received medium amount of credit, while 14 % low and 18 % received high amount of credit. Analysis of data indicates that most of the respondents (86 percent) were medium to high credit recipients and few respondents (14 percent) were supported by low credit facility. Almost all beneficiaries received credit for vegetable cultivation.

Farmers' attitude towards environment friendly vegetable cultivation

The observed scores for attitude towards environment friendly vegetable cultivation ranged from 34 to 83 against the possible range of 20 to 100 with a mean of 54.82 and standard deviation of 15.59 shown in (Table 12).

Table 12. Distribution of the vegetable growers according to their attitude towards environment friendly vegetable cultivation

Farmer attituude	Respondents		Mean	Standard deviation
	Number	Percent		
Highlyunfavorable attitude (<40)	20	20		
Unfavorable attitude (40- <60)	40	40		
Neutral attitude (60)	1	1	54.82	15.59
Favorable attitude(>60-80)	33	33		
Highly favorable attitude (>80)	6	6		
Total	100	100		

List of environment friendly vegetable cultivation practices of the respondents given below in the Table 13.

Table 13. Practice wise attitude score of the respondents towards environment friendly vegetable cultivation

Sl. no.	Environment friendly vegetable cultivation practices	Categories	Respondents		Mean	Standard deviation
			Number	Percent		
1.	Mechanical control	Strongly disagree	43	43		
		Disagree	25	25	2.28	0.78
		No opinion	16	16		
		Agree	13	13		
		Strongly agree	3	3		
2.	Biological control	Strongly disagree	19	19		
		Disagree	31	31	2.64	1.21
		No opinion	27	27		
		Agree	13	13		
		Strongly agree	10	10		
3.	Cultural control	Strongly disagree	0	0		
		Disagree	14	14	3.11	0.95
		No opinion	21	21		
		Agree	24	24		
		Strongly agree	41	41		
4.	Genetic control	Strongly disagree	28	28		
		Disagree	23	23	2.81	1.56
		No opinion	14	14		
		Agree	10	10		
		Strongly agree	25	25		

Table 12 shows that the majority (40%) of the respondents had unfavorable attitude, 20% respondents had highly unfavorable attitude, 1% of them had neutral attitude while 33% respondents had favorable attitude and 6% had highly favorable attitude towards environment friendly vegetable cultivation. The findings indicate that majority (40%) of the respondents had unfavorable attitude towards environment friendly vegetable cultivation.

Table 13 indicates that four environment friendly practices in vegetable cultivation were taken to measure responses from the respondents. Practices were mechanical control, biological control, cultural control and genetic control. Responses for these practices were measured in 5 categories. In mechanical control 43% were strongly disagree,25% were disagree,16% were no

opinion,13% were agree and 3% were strongly agree. In biological control 19% were strongly disagree,31% were disagree, 27% were no opinion,13% were agree and 10% were strongly agree. In cultural control 0% were strongly disagree,14% were disagree,21% were no opinion, 24% were agree and 41% were strongly agree. In genetic control, total 28% were strongly disagree, 23% were disagree, 14% were no opinion, 10% were agree and 25% were strongly agree. Above that it can be said that, respondents showed more favorable attitude to the cultural control and showed less favorable attitude to the mechanical control. Genetic and biological control were in 2nd and 3rd position respectively.

Relationship between selected characteristics of the vegetable growers and their attitude towards environment friendly vegetable cultivation

Pearson's product moment correlation co-efficient was computed in order to find out the extent of relationship between attitude towards environment friendly vegetable cultivation and their selected characteristics. To reject or accept the null hypothesis, 1% and 5% level of probability was used. A statistically significant and non-significant relationship was observed when the computed value or "r" was greater or smaller than the tabulated value, respectively.

The result of correlation test is shown in (Table14).

Table 14. Correlation co-efficient showing relationship of each of the selected characteristics of the vegetable growers and their attitude

Dependent variable	Independent variables	Computed value of co-efficient of correlation 'r'	Tabulated value at 98 df	
			0.05 level	0.01 level
Farmers' attitude towards environment friendly vegetable cultivation	Age	-0.028^{NS}	0.196	0.256
	Education	0.655**		
	Family size	-0.083^{NS}		
	Farm size	0.193^{NS}		
	Training received	0.234*		
	Time spent in vegetable field	0.308**		
	Annual family income	0.292**		
	Annual income from vegetable cultivation	0.324**		
	Knowledge on environment friendly practices (IPM) in vegetable cultivation	0.504**		
	Organizational participation	0.542**		
	Credit received	0.240*		

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

Relationship between age and attitude towards environment friendly vegetable cultivation

The coefficient of correlation (r) between the concerned variables was found - 0.028 (Table 14), which is non significant and thus the null hypothesis could not be rejected.

Based on the above finding, it was concluded that age of the farmers had negative and non significant relationship with the farmers' attitude towards environment friendly vegetable cultivation. This represent that age of the respondents was not an important factor to show attitude towards environment friendly vegetable cultivation. But with the increase of age of the respondents' attitude towards environment friendly vegetable cultivation also decreases. *Patel et, al.* (2007) also found similar findings in their study.

Relationship between education and attitude towards environment friendly vegetable cultivation

The coefficient of correlation (r) between the concerned variables was found 0.655 (table 14), which is significant and thus the null hypothesis was rejected. Based on the above finding, it was concluded that education of the farmers had significant and positive relationship with the farmers' attitude towards environment friendly vegetable cultivation. Thus it can be said that, education is an important factor and as the education increase or decrease, attitude towards environment friendly vegetable cultivation is also increased or decreased respectively. Patel et al. (2007), Farhad and Kashem (2004) also found similar findings in their studies.

Relationship between family size and attitude towards environment friendly vegetable cultivation

The coefficient of correlation (r) between the concerned variables was found - 0.083 (table 14), which is non significant and thus the null hypothesis could not be rejected.

Based on the above findings, it was concluded that family size of the farmers had negative and non significant relationship with the farmers' attitude towards environment friendly vegetable cultivation. Thus, it can be said that farm size of the farmers had shown no impact on their attitude towards environment friendly vegetable cultivation. Rahman (2010) and Parvez (2007) also found non significant relationship between family size and attitude towards environment friendly vegetable cultivation.

Relationship between farm size and attitude towards environment friendly vegetable cultivation

The coefficient of correlation (r) between the concerned variables was found 0.193 (table 14), which is non significant and thus the null hypothesis could not be rejected.

Based on the above findings, it was concluded that farm size of the farmers had positive and non significant relationship with the farmers' attitude towards environment friendly vegetable cultivation .Thus, it can be said that farm size of the farmers had shown no impact on their attitude towards environment friendly vegetable cultivation. Rahman (2010) and Parvez (2007) also found non significant relationship between farm size and attitude towards environment friendly vegetable cultivation.

Relationship between training received and attitude towards environment friendly vegetable cultivation

The coefficient of correlation (r) between the concerned variables was found 0.234 (table 14), which is significant and thus the null hypothesis was rejected. Based on the above finding, it was concluded that training received had significant positive relationship with the farmers' attitude towards environment friendly vegetable cultivation. Environment friendly practices require the manipulation of local natural resources for conservation and augmentation of natural enemies which can be achieved by successful participation of farmers in training. It means that, the farmers with more training received had favorable attitude towards environment friendly vegetable cultivation. Sarker (2002) and Rahman (2010) also found similar significant positive relationship in their studies.

Relationship between time spent in vegetable field and attitude towards environment friendly vegetable cultivation

The coefficient of correlation (r) between the concerned variables was found 0.308 (table 14), which is significant and thus the null hypothesis was rejected.

Based on the above finding, it was concluded that time spent in vegetable field had significant positive relationship with the farmers' attitude towards environment friendly vegetable cultivation. It means that, with the increase or decrease of time spent in vegetable field, the favorable attitude towards environment friendly vegetable cultivation by the farmers is also increased or decreased. Roy (2014) found similar significant positive relationship in his study.

Relationship between annual family income and attitude towards environment friendly vegetable cultivation

The coefficient of correlation (r) between the concerned variables was found 0.292(table 14), which is significant and thus the null hypothesis was rejected.

Based on the above finding, it was concluded that annual family income of the farmers had significant and positive relationship with the farmers' attitude towards environment friendly vegetable cultivation. Thus it can be said that, annual family income of farmers had effect on attitude of farmers. If annual

family income increase or decrease, farmers' attitude towards environment friendly vegetable cultivation will also respectively increased or decreased. Parvez (2007) and Rahman (2010) also found significant relationship between annual income of the farmers and their attitude towards environment friendly vegetable cultivation.

Relationship between annual income from vegetable cultivation and attitude towards environment friendly vegetable cultivation

The coefficient of correlation (r) between the concerned variables was found 0.324 (table 14), which is significant and thus the null hypothesis was rejected.

Based on the above finding, it was concluded that annual income from vegetable cultivation had positive significant relationship with the attitude of the farmers towards environment friendly vegetable cultivation. The positive relation implies that attitude towards environment friendly vegetable cultivation was observed favorable among those farmers who had high annual income from vegetable cultivation. Haider (2005)   also found significant relationship between annual income of the farmers from vegetable cultivation and their attitude towards environment friendly vegetable cultivation.

Relationship between Knowledge on environment friendly vegetable cultivation and attitude towards environment friendly vegetable cultivation

The coefficient of correlation (r) between the concerned variables was found 0.504 (table 14), which is significant and thus the null hypothesis was rejected.

Based on the above finding, it was concluded that knowledge on environment friendly vegetable cultivation had significant positive relationship with the farmers' attitude towards environment friendly vegetable cultivation. It means that, with the increase of knowledge on environment friendly vegetable cultivation, favorable attitude towards environment friendly vegetable cultivation is also increased. Farhad (2004) and Rahman (2010) also found similar findings in their study.

Relationship between organizational participation and attitude towards environment friendly vegetable cultivation

The coefficient of correlation (r) between the concerned variables was found 0.542 (table 14), which is significant and thus the null hypothesis was rejected.

Based on the above finding, it was concluded that organizational participation had significant positive relationship with the farmers' attitude towards environment friendly vegetable cultivation. Higher the participation in different organization, higher is the scope of exchanging information that leads to higher the level of attitude towards environment friendly vegetable cultivation. Rahman (2010) found similar findings in his study.

Relationship between credit received and attitude towards environment friendly vegetable cultivation

The coefficient of correlation (r) between the concerned variables was found 0.240 (table 14), which is significant and thus the null hypothesis was rejected.

The finding indicates that the attitude of the farmers increased with the increase of credit availability. This seems to be logical, because high amount of credit leads to high amount of investment and subsequently high profit and high favorable attitude. So, it could be concluded that loan or credit play a significant and vital role in enhancing attitude towards environment friendly vegetable cultivation. Farhad (2003) and Rahman (2010) also found similar findings in their study.

Ranking of the constraints faced by the farmers in using environment friendly vegetable cultivation

In order to ascertain the extent of severity of constraint faced by the farmers in using environment friendly vegetable cultivation, constraint facing index (CFI) was computed. The CFI of any constraint could range from 0 to 300, where 0 indicated no constraint and 300 indicated high constraint. However, the computed Constraint facing index (CFI) of the 9 constraints ranged from 67 to 195 and has been arranged in rank order according to their constraint indices which appears in table 4.17.

Table 15. Ranking of the constraints faced by the farmers in using environment friendly vegetable cultivation

Sl No.	Constraints	Frequency of extent of constraint faced (N=100)					
		H	M	L	N	CFI	Rank
1.	Lack of resistant variety	35	34	22	9	195	1
2.	Lack of quality seed	33	28	28	11	183	2
3.	Expensive in using light trap	20	32	20	28	144	5
4.	Time consuming in mechanical control to the pests	29	24	22	25	157	4
5.	Lack of pesticides with short residual effect	38	18	16	28	166	3
6.	Lack of knowledge about the beneficial insects and harmful insects	12	29	25	34	119	6
7.	Unavailability of organic farming practices	9	23	35	33	108	7
8.	Lack of cooperation among the farmers	9	16	45	30	104	8
9.	Criticize to other farmers for use of environment friendly practices	4	9	37	50	67	9

Elaborations:

H = High, M = Medium, L = Low, N = Not at all, CFI = Constraint facing Index

Data contained in (Table 15) indicate that the farmers faced highest constraint in "lack of resistant variety "as indicated by its CFI of 195. This is the main constraint faced by the farmers in relation to environment friendly vegetable cultivation. The second and third constraints faced by them are "lack of quality seed "(CFI 183) and "lack of pesticides with short residual effect" (CFI 166) respectively. The fourth constraint was "time consuming in mechanical control to the pests" (CFI 157). Fifth constraint was "expensive in using light trap" (CFI 144). Sixth constraint was "lack of knowledge about the beneficial insects and harmful insects" (CFI 119). Seventh constraint was "unavailability of organic farming practices" (CFI 108). Eighth constraint was "lack of cooperation among the farmers" (CFI 104). In this way, comparatively less constraint (ninth) faced by the fanners is "criticize to other farmers for use of environment friendly practices" (CFI 67) that means it is not a serious constraint for the farmers in using environment friendly vegetable cultivation.

Conclusions

Majority (40%) of the respondents had unfavorable attitude towards environment friendly vegetable cultivation. Unfavorable attitude should be changed into favorable attitude towards environment friendly vegetable cultivation through increasing their educational level, organizational participation, training received, credit received etc. In this study (28%) of the respondents were illiterate and rests of all were literate. Training received had significant positive relationship with their attitude towards environment friendly vegetable cultivation. 87% of the respondents had no to low training. 76% of the respondents were short to moderate time spender in their vegetable field. It also showed that 86% of the respondents had medium family income. It plays a vital role in any socio-economic development of the farmers. 82% of the respondents had poor to medium knowledge on environment friendly vegetable cultivation. 81% of the respondents was low to medium organizational participation. 82% of the respondents were low to medium credit recipient. So, it can be concluded that increase of credit availability may improve their situation and more favorable attitude towards environment friendly vegetable cultivation can be seen.

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