

PROBLEM CONFRONTATION IN MUSHROOM CULTIVATION OF THE CULTIVATORS

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ABSTRACT

The purpose of the study was to determine the problems confrontation of the cultivators in mushroom cultivation and to explore the relationship between the selected characteristics of the cultivators and their problem confrontation in mushroom cultivation. Cultivators 16 problems in mushroom cultivation were considered for the study. The study was conducted in Savar upazila under Dhaka district. Data were collected from randomly selected 100 cultivators by using an interview schedule. Scale score was used to determine cultivators problem in mushroom cultivation while a Problem confrontation Index (PCI) was used to make comparison among the 16 selected problems. Pearson's product Moment Correlation was used for statistical test. Majority (65 %) of the cultivators were found confronted medium problem, while 24 percent of the cultivators confronted low problem and 11 percent confronted high problem in mushroom cultivation. Among the selected characteristics of the cultivators education, land possession, mushroom cultivation area, annual family income, organizational participation, cosmopolitanness, extension contact, training exposure in mushroom cultivation and mushroom cultivation knowledge showed significant negative relationship with their problem confrontation and other two variables namely family size and experiences in mushroom cultivation had no significant relationship with problem confrontation in mushroom cultivation. On the basis of Problem Confrontation Index (PCI) boundness of the cultivators to supply commodities to middle man in low price ranked first followed by high price of spawn, complexity to get credit for mushroom cultivation, low demand in the local market, high rate of interest for credit. Lack of knowledge on proper doses of pesticide for pest control of mushroom ranked last.

Key Words: Problem Confrontation and Mushroom Cultivators

INTRODUCTION

Mushroom is an edible vegetable which is delicious, nutritious and having medicinal value cultivated scientifically from seeds invented in the laboratory in the neat and clean environment (Siddiqui, 2002). It comprises a large heterogeneous group having various shapes, sizes, appearance and edibility. They are recognized as the alternate source of good quality protein and are capable of producing the highest quantity of protein per unit area and time from the worthless agro-wastes (Chadha and Sharma, 1995). They are good source of protein, vitamins and minerals (Khan *et al.* 2001). Mushroom is called 'vegetable meet' due to its taste and nutritious value.

Recently, Bangladesh produces and markets commercially 60 thousands packets of spawn per year through Mushroom Cultivation Center, Savar, Dhaka under the Department of Agriculture Extension (DAE) (Bashar, 1994). But this amount of mushroom production is very less in compared to other countries due to lack of higher technology. Use of proper media and substrate instead of traditional culture media can increase the production of our country. Besides these, mushroom cultivators face some problems in mushroom cultivation. But there was no research work that find out problems of mushroom cultivators. Therefore, the present researchers felt necessity to conduct this research work on the following objectives:

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1. To determine and describe the extent of problem confronted by the Mushroom Cultivators,
2. To compare among different problems in mushroom cultivation,
3. To determine and describe some selected characteristic of the Mushroom Cultivators, and
4. To explore the relationship between the selected characteristics of the mushroom cultivators and their extent of problem confrontation in Mushroom cultivation.

METHODOLOGY

Savár upazilla was selected as the locale of study. Five hundred and four mushroom cultivators of this upazilla constituted the population of the study. Out of these 504 mushroom cultivators a sample of 100 farmers were selected for the study by following random sampling method. A structured interview schedule was used for collection of relevant data by face to face interview. Problems confronted by the farmers in Mushroom cultivation was the main focus of this study and it was considered as the dependent variable. Education, family size, experiences in mushroom cultivation, land possession, mushroom cultivation area, annul family income, organizational participation, cosmopoliteness, extension contact, training exposure in mushroom cultivation and mushroom cultivation knowledge were considered as independent variables. Education of a respondent was measured in times of classes passed by him/her in formal education system. Family size of a respondent was determined in terms of the total number of members included in the family of the respondent. Mushroom cultivation experiences was measured on the basis of years, the respondent involved in mushroom cultivation. Land possession of a cultivator was measured by the land area possessed by him. Mushroom cultivation area was measured by the area used for mushroom cultivation in terms of square feet. Annul family income of a respondent was measured on the basis of total yearly earning of the respondent and the members of his/her family. Organizational participation of a respondent was measured on the basis of the nature and duration of his/her participation in different organizations. Cosmopoliteness of the respondents was measured by the nature of visit made by the respondent to seven selected places. The extension contact of a respondent was measured on the basis of nature of contact with 15 selected information sources by taking six individual, four group and five mass contact media. Training exposure on mushroom cultivation was measured by the total number of days a respondent received training in his/her entire life on mushroom cultivation. Knowledge on mushroom cultivation of the respondents was measured by asking 10 questions selected from the different aspects of mushroom cultivation. Two (2) score was assigned for correct answer of each question. Partial score was given for partially correct answer. For measuring problem confrontation in mushroom cultivation by the farmers 16 problems were selected through consultation with the relevant experts, researchers and from other available sources. The nature of responses of the respondents to each of the 16 problems were high problem, medium problem, low problem and no problem at all and scores were assigned as 3, 2, 1, and 0 respectively. Finally problem confrontation in mushroom cultivation score of a cultivator was calculated by adding up all the scores of all the responses of that respondent.

For having a clear understanding of the comparative problem confrontation by the farmers, problem confrontation index (PCI) for each problem was computed by using the following formula:

$$PCI = (P_h \times 3) + (P_m \times 2) + (P_l \times 1) + (P_n \times 0)$$

Where, P_h = Number of respondents confronted the problem as high

P_m = Number of respondents confronted the problem as medium

P_l = Number of respondents confronted the problem as low

P_n = Number of respondents confronted the problem as not at all

Data from all the interview schedules were coded, compiled, tabulated and analyzed in accordance with the objectives of the study. The analysis was performed using SPSS (Statistical Package for Social Sciences) computer package. Null hypotheses was formulated to test the relationships of independent variables with dependent variable as “There is no relationship between the problem confronted by the cultivators in Mushroom cultivation and each of the independent variables of the study.” Descriptive analysis such as range, numbers and percentage distribution, mean, standard deviation and rank order were used whenever necessary. Pearson’s Product Moment Co-efficient of Correlation (r) was used in order to explore the relationship between the concerned variables.

RESULTS AND DISCUSSION

Problem Confrontation in Mushroom cultivation

The salient features of the problem confrontation in Mushroom cultivation by the cultivators have been presented in Table 1. The observed scores of problem confrontation in Mushroom cultivation ranged from 25-38 against the possible score of 0-48. The average score was 30.60 with a standard deviation of 2.49. On the basis of problem confrontation in Mushroom cultivation, the cultivators were classified into three categories (Table 1).

Table 1. Salient features of the problem confrontation in mushroom cultivation of the cultivators

Categories according to problem confrontation in Mushroom cultivation	Farmers		Mean	Standard deviation
	Number	Percent		
Low problem	24	24	30.60	2.49
Medium problem	65	65		
High problem	11	11		
Total	100	100		

Data presented in the Table 1 indicate that all the farmers were facing problems with varying degrees of problems. It was due to that the mushroom cultivation is complex process as it is a new crop. The highest proportion (65 %) of the cultivators had medium problem confrontation as compared to 24 percent having low problem and 11 percent high problem confrontation in mushroom cultivation. This means that the majority (76 %) of the farmers had medium to high problem confrontation in mushroom cultivation.

Comparative Problem Confrontation in Mushroom Cultivation

The computed Problem Confrontation Index (PCI) of the 16 problems ranged from 98 to 275 against the possible range of 0-300 which are arranged in rank order according to their PCI as shown in Table 2.

Table 2. Rank order of 16 selected problems confronted by mushroom multivators

Sl. No.	Problems	Extent of problem confrontation				PCI	Rank Order
		High Problem (3)	Medium Problem (2)	Low Problem (1)	Not at all Problem (0)		
1	Boundness of the cultivators to supply commodities to middle man in low price	79	17	4	0	275	1
2	High price of spawn	68	30	2	0	266	2
3	Complexity to get credit for mushroom cultivation	65	31	3	1	260	3
4	Low demand in the local market	61	36	1	0	256	4
5	High rate of interest of credit for mushroom cultivation	55	36	8	1	245	5
6	Inadequate supply of credit for mushroom cultivation	52	34	8	6	232	6
7	Unavailability of spawn packets in time	53	34	4	9	231	7
8	Problem of transportation facilitation	44	35	10	11	212	8
9	Lack of storage facilities	42	31	18	9	206	9
10	Lack of proper knowledge on spawn	45	30	7	18	202	10
11	Irrigation problem	18	44	31	7	173	11
12	Lack of knowledge on preparing organic manure for mushroom	19	22	46	13	147	12
13	Shortage of organic manure for mushroom cultivation	27	14	30	29	139	13
14	low spawn germination rate	25	16	27	32	134	14
15	Lack of knowledge on balance fertilizer for mushroom cultivation	16	29	19	36	125	15
16	Lack of knowledge on proper doses of pesticide for pest control of mushroom	9	32	7	52	98	16

Data presented in Table 2 indicated that cultivators face the problems in different degrees. It is so happened because the cultivation procedure of mushroom is a bit different from the other known crops. According to PCI boundness of the cultivators to supply commodities to middle man in low price ranked first followed by high price of spawn, complexity to get credit for mushroom cultivation, low demand in the local market, high rate of interest of credit for mushroom cultivation, inadequate supply of credit for mushroom cultivation, unavailability of spawn packets in time, problem of transportation facilitation, lack of storage facilities, lack of proper knowledge on spawn, irrigation problem, lack of knowledge on preparing organic manure for mushroom, shortage of organic manure for mushroom cultivation, low spawn germination rate, lack of knowledge on balance fertilizer for mushroom cultivation and lack of knowledge on proper doses of pesticide for pest control of mushroom.

Selected Characteristics of the Cultivators

The salient features of different selected characteristics of the respondent cultivators have been presented in Table 3 and described below:

Table 3. Salient features of different characteristics of the respondents

Sl. No	Characteristics	Possible range	Observed range	Categories	Farmers (n = 100)		Mean	SD
					No.	%		
1.	Education	--	0-16	Illiterate (0)	5	5	8.735	4.5139
				Can sign only (0.5)	9	9		
				Primary level (1-5)	5	5		
				Secondary level (6-10)	53	53		
				Higher secondary (11- 12)	11	11		
Higher educated (above 12)	17	17						
2.	Family size	--	4-12	Small (up to 4)	12	12	5.97	1.417
				Medium (5-7)	77	77		
				Large (8 and above)	11	11		
3.	Experience in Mushroom cultivation	--	1-5	Low experience (0-2)	70	70	2.02	0.7879
				Medium experience (2.1-3)	27	27		
				High experience (3)	3	3		
4.	Land possession	--	.017-2.133	Marginal (.001-.2)	23	23	.542	0.4817
				Small (.2001-1)	61	61		
				Medium (above 1)	16	16		
5.	Area for Mushroom cultivation area	--	100-400	Small area (<mean- 0.5 Sd. i.e <196.055)	34	34	270.4	74.345
				Medium area (mean ± 0.5 sd. i.e. 196.055-344.745)	50	50		
				Large area (> mean + 0.5 sd. i.e >344.745)	16	16		
6.	Annual family income	--	54.0-300	Low (up to 100)	43	43	129.78	60.88
				Medium (>100 – 160)	29	29		
				High (above 160)	28	28		
7.	Organizational participation	--	1-18	Low (up to 6)	45	45	7.98	4.40
				Medium (7-14)	43	43		
				High (above 14)	12	12		
8.	Cosmopolitaness	0-28	6-26	Low (1-10)	9	9	18.04	4.95
				Medium (11- 20)	58	58		
				High (above 20)	33	33		
9.	Extension contact	0-60	18-54	Low (1-20)	2	2	37.30	8.86
				Medium (21-40)	60	60		
				High (above 40)	38	38		
10.	Training exposure in mushroom cultivation	--	0-48	Low (1-3)	46	46	12.15	17.43
				Medium (4-20)	35	35		
				High (above 20)	19	19		
11.	Mushroom cultivation knowledge	0-20	8-19	Low (<mean- 1 Sd. i.e <13.47)	13	13	15.87	2.46
				Medium (mean ± 1 sd. i.e 13.47-18.33)	71	71		
				High (> mean +1 sd. i.e > 18.33)	16	16		

Data revealed in Table. 3 indicated majority (81 %) of the farmers had schooling from secondary level to higher education. Majority (89 %) of the respondent had low to medium family size. Most (97 %) of cultivators had low to medium experience in mushroom cultivation. Most (84 %) of the cultivators had marginal to small land possession. Majority proportion (84 %) of the respondents had low to medium mushroom cultivation area. An overwhelming majority (72 %) of the cultivators had low to medium annul family income. A large proportion (88 %) of the respondent had low to medium organization participation. About two third (67 %) of the cultivators had low to medium cosmopoliteness. About two third (62 %) cultivators had low to medium extension contact. An overwhelming majority (81 %) of the cultivators had low to medium training exposure and the majority (84 %) of the cultivators had low to medium knowledge on mushroom cultivation.

Relationship between the Selected Characteristics of the Mushroom Cultivators and Their Problem Confrontation in Mushroom cultivation

The summary of the results of the correlation analysis has been presented in Table 4 showing the relationship between selected characteristics of the cultivators and their problem confrontation in Mushroom cultivation.

Table 4. Co-efficient of correlation showing the relationship between the selected characteristics of the cultivators and their problem confrontation in mushroom cultivation (N =100)

Dependent variable	Independent variables	Computed value of "r"	Tabulated value of "r"	
			at 5% level	at 1% level
Problem confrontation in Mushroom cultivation	Education	-.238*	.196	.256
	Family size	-0.126 ^{NS}		
	Experience in Mushroom cultivation	-.181 ^{NS}		
	Land possession	-.255*		
	Mushroom cultivation area	-.246*		
	Annual family income	-.328**		
	Organizational participation	-.349**		
	Cosmopoliteness	-.197*		
	Extension contact	-.241*		
	Training exposure in mushroom cultivation	-.291**		
	Mushroom cultivation knowledge	-.248*		

NS = Not signification

** Significant at 0.01 level of probability with 98 df.

* Significant at 0.05 level of probability with 98 df.

Table 4. revealed that education, land possession, mushroom cultivation area, annul family income, organization participation, cosmopoliteness, extension contact, training exposure in mushroom cultivation and mushroom cultivation knowledge of the cultivators had significant negative relationship with their problem confrontation in mushroom cultivation. This is quite

logical that higher education, annual family income, organizational participation, cosmopolitanism, extension contact, training exposure in mushroom cultivation and mushroom cultivation knowledge can decrease the problems of the cultivators in mushroom cultivation. Other variables like family size and experience in mushroom cultivation had no significant relationship with problem confrontation in mushroom cultivation.

From the above findings, it may be concluded that higher education, annual family income, organizational participation, cosmopolitanism and extension contact of the cultivators can perform to overcome the problems of the cultivators in mushroom cultivation. Training in mushroom cultivation can increase the level of knowledge on mushroom cultivation and knowledgeable cultivators have the ability to minimize their problems in mushroom cultivation.

Therefore, it may be recommended that steps should be taken by the concern authority so that the cultivators can increase their education level, annual family income, organizational participation, cosmopolitanism and extension contact. More training on mushroom cultivation should be arranged by the concern authority so that the cultivators could increase their mushroom cultivation knowledge and ultimately they could minimize their problems in mushroom cultivation.

REFERENCES

- Bashar, M. A. 1994. Lavjanak Mushroom Chash (Profitabl Mushroom Cultivation) Dainik Dinkal, the daily newspaper, published in 9th November.
- Chanda, K. L. and S. R. Sharma. 1995. Mushroom research in India history, infra structure and achievements. In advances in horticulture Vol. 13-Mushroom 1995. Eds. Malhotra Pub., New Delhi, India. 1-33pp.
- Khan-A. M., Khan S. M. and Khan, S. M. 2001. Studies on the cultivation of oyster mushroom *Pleurotus ostreatus* on different substrates. Department of Plant Pathology, University of Agriculture, Faisalabad, Pakistan. : *Pak.J.of Phytopathology*.13: 2, 140-143; 10 ref.
- Siddiqui, A. B. 2002. Mushroom Production Technology. Integrated Horticulture and Nutrition Development Project (GOB/UNDP/FAO-BGD/97/041).