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Impact Assessment of Vocational Mushroom Cultivation Training Programme on Knowledge Gain of Rural Women

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ABSTRACT

The present study aims to investigate the change in economic status / profile of rural women entrepreneurs after entering in oyster mushroom cultivation. As per the directive given by the Directorate of BAU, Sabour to KVK, three different women farmer's club were formed after collecting preliminary information through interview. Sixty trainees were imparted training on mushroom cultivation by conducting three vocational training courses at Krishi Vigyan Kendra, Lodipur, Arwal. In order to evaluate these training prgrammes, present study was undertaken to find out knowledge gain by the participants and suggestions from the trainees in order to bring improvement in the coming training courses. They were taught and motivated for starting oyster mushroom cultivation in addition to their other activities. Being inspired by the KVK support a number of women farmer in three villages Bara, Korium and Muradpur Huzra took the initiative for cultivating oyster mushroom. A series of off campus training programmes were also effectively organised by the scientist's of Krishi Vigyan Kendra, Lodipur Farm, Arwal. Besides, KVK scientist's helped them with advice and assistance by distributing leaflet containing information about nutritional and medicinal value of mushroom. Facilitating marketing arrangements and the frequent visit of the scientists from KVK helped these women to take up the employment generating technologies at a higher percentage level. The knowledge level of farm / rural women were improved by attending training programme on quality spawn production in village condition, specific method of mushroom bag preparation, harvesting techniques, grading and packaging of mushroom in small pouches, preservation techniques and value addition by preparing products from oyster mushroom. This analysis of the present investigation further indicated that the women who adopt mushroom cultivation started earning handsome amount. Sales at public gatherings, markets, house to house sales were also adopted as the marketing strategies for selling the products. However, the economic problems for initiating the business are the major constraints to adopt organised mushroom cultivation in these villages. It was also observed that the credit linkage and market support if created locally will encourage other rural farm women to adopt this mushroom cultivation business.

Key words: *Mushroom cultivation, Vocational Training, Gain in knowledge.*

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INTRODUCTION

Empowerment of rural women has emerged as an important issue in today's world. Mushroom farming plays a very significant role to eradicate malnutrition, alleviate poverty and create employment opportunity for rural unemployed folk specially the rural farming community[1]. Now days, mushroom cultivation in rural areas has become an essential activity in order to increase the rural economy. Mushrooms can be used as food supplements, health related food formulations, medicines, cosmetics and as natural biocontrol agents in plant protection with insecticidal, fungicidal, bactericidal and herbicidal activities. Many drugs and dietary food supplement contains some components responsible for improving our immune system produced by mushroom and thus it plays a very significant important role in human health, nutritional and medicinal formulations[2]. Mushroom is not only a rich source for nutritious protein, it is also effectively used in the production of highly effective medicinal products[3,4,5]. Mushroom production was started in the start of 18th century. At present, the world's total edible and medicinal mushrooms production was estimated at over 34 million tonnes. China is the main producer of mushrooms, producing over 30 million tons. This is accounted for about 87% of total production[6]. Besides, mushroom cultivation also helps to reduce pollutants in the environment. The bioconversion of lignocellulosic biomass to food and useful products showed a significant impact on pollution levels[7,8,9].

Oyster mushroom (*Pleurotus sojar-caju*) is an edible mushroom having an excellent taste and flavour[10]. Oyster mushroom mainly cultivated in south east Asia, India, Europe and Africa[11]. They contain appreciable amounts of potassium, phosphorous, copper and iron but have low levels of calcium. It is a good source of protein, vitamins and minerals[12] and its protein is intermediate between animals and vegetable source protein. In addition to this, oyster mushroom showed excellent medicinal properties which includes anticancer, antibiotic, anti-inflammatory, antiviral, immune-modulator effect and lipid lowering effects[13]. In India oyster mushroom have become the most popular for commercial production in recent years. This mushroom has a promising prospect in tropical and subtropical areas. Its cultivation is easy with relatively less complicated procedures[14,15,16]. So, the demand of mushroom has been increasing day by day due to population growth, market expansions, changing of consumer education and awareness along with the developments in the manufacturing industries, storage facilities, and transportation. It is also important to maintain economic vibrancy and development by increasing and diversifying rural farm women in agri-business by creating newer kind of employment opportunities. It is a well established fact that the rural unemployed individuals specially the farm women can be developed, their outlook can be changed and their ideas can be given a true shape of enterprise through regularly organized vocational training / motivational programme. Mushroom cultivation is environment friendly and they biosynthesize their food from agricultural crop residues, which is readily available in rural areas. These crop residues would otherwise cause various kinds of health hazards. Moreover, mushroom production can often be recommended to a situation where large-scale capital-intensive operations are not possible. Mushroom cultivation in Arwal district is negligible during last few years although there is a rising trend in its demand. In comparison to other districts of Bihar, mushroom production is quite low and about 70% people of Arwal district belongs to the category of small and marginal farmers and landless labourers. Their income level is quite low for a sustained livelihood. In order to raise their family income mushroom cultivation was considered to be an alternative source of income generating actively. The entrepreneurial training programmes being planned and organised for rural women through KVK's aims to improve the entrepreneurial attitude of rural women through managing their day to day activities.

An evaluation study of such entrepreneurial training programmes would help to give idea about the possibility of improving the training programme in future. In order to know the impact of these training programmes on knowledge up gradation of the trainees, the present study was conducted.

MATERIAL AND METHODS

This study was conducted in the three schedule / backward caste dominated mahila kisan club formed by KVK, Arwal at Muradpur huzra, Korium and Bara of Arwal district of Bihar by the instruction of Directorate of Extension Education, B.A.U., Sabour, Bhagalpur.

KVK intervention for the present study: Oyster mushroom is grown on agriculture waste and use of such waste is a better and profitable eco-friendly way of waste disposal. The technology involved in mushroom cultivation is very simple and can be performed by any person after attending a short vocational training programme generally conducted at KVK's. The awareness programme for mushroom cultivation has been created a dramatic environment among the poor farmers. Mushroom cultivation showed a new way of socio economic development for the SHG women due to its low capital investment and high yields obtained even under rural condition. It can be used as supplement for protein lacking food items and can also be easily cultivated in indoors and marketed locally and get good profit. Keeping in view the above fact, Front Line Demonstration, off campus training in addition to the short term vocational training courses on oyster mushroom cultivation was organized time to time in the selected villages through newly formed women farmers club namely Saraswati mahila kisan club at Muradpur huzra, Baiderabad, Rani Laxmibai mahila kisan club at Korium, Arwal and Sanghmitra mahila kisan club at Bara, Arwal. Necessary technical literatures were distributed among the selected women farmers; field day was also arranged time to time to create awareness and interest among the farmers for mushroom cultivation. KVK Scientists along with other concerned staff members were instrumental in imparting training to the farm women of these villages. For evaluating the impact of vocational training programme, a questionnaire was prepared comprising of general information, background of selected farm women of three villages such as age, education, occupation, landholding etc. A pre evaluation test was conducted to know the level of knowledge of participants regarding types, nutritive value, diseases of mushrooms, preparation of casing, harvesting techniques as well as their storage and preservation etc. Similarly, after completion of the training course, post evaluation was performed in order to assess the knowledge gained by the trainees and effectiveness of training. To test the knowledge of trainees after completing the vocational training, a set of questions related to mushroom growing, nutrients present in mushroom, different products prepared from mushroom, storage and harvesting of mushroom etc. were asked. Hence, gain in knowledge was calculated from the difference of scores obtained in pre and post knowledge test of the trainees. Likewise, the suggestions from the trainees were discussed for bringing further improvement in the vocational training programme. The data were analyzed using frequency, percentages and ranking.

RESULTS AND DISCUSSION

Socio-economic profile

The participants differed in age, education, occupation and landholding. The data (Table 1) showed that the age of participants was between 20 to 56 years. More than half of trainees were in age group of 26-40 whereas 38.3 per cent were above 40 years of age. It was also inferred (Table-1) that 46.6% per cent farmers were landless farm labourers whereas few farmers (28.3%) were marginal farm women having less than 1 hectare while 25% farm women were having more than 1 hectare farming land. Participants selected for the present study were mainly from two categories, 60% farm women belong to Backward Caste and rest 40% were from Schedule caste. Assessment of the trainees

with respect to education indicated that 45 per cent studied up to primary level followed by middle level (35%) and matriculate level (20%). More than half of trainees belonged to farming background community followed by 17 per cent belonged to housewife whereas 11% are from poor vegetable selling business class. Considering all the above said evaluating parameters it was evident that mushroom farming enterprise does not require much land and therefore, landless farmers were found to be interested to adopt this enterprise to supplement their family income.

Table 1: Socio-economic profile of selected women trainees (n=60)

Sr. No.	Particulars	Frequency	Percent
1.	**Age**		
	Up to 25 yrs	05	8.33
	26-40 yr	32	53.3
	Above 40 yrs	23	38.3
2.	**Landholding**		
	Landless	28	46.6
	Marginal (<1 ha)	17	28.3
	Big (More than 1ha)	15	25.0
3.	**Caste**		
	Scheduled caste	24	40.0
	Backward Caste	36	60.0
4.	**Education**		
	Primary	27	45.0
	Middle level	21	35.0
	Matriculate	12	20.0
5.	**Occupation**		
	Farming	32	53.3
	Vegetable selling Business	11	18.3
	Housewife	17	28.3

Table 2: Reasons of participation in vocational training programme for mushroom cultivation

Sr. No.	Reasons	Number	Percentage
1.	To adopt oyster mushroom production as an enterprise	**46**	**76.6**
2.	To learn about mushroom growing techniques for self consumption	**11**	**18.3**
3.	Just to know about mushroom cultivation	**5**	**8.33**
4.	To get certificate of vocational training course	**19**	**31.6**
6.	To teach other women farmers about mushroom cultivation	**2**	**03.3**
7.	To learn techniques of mushroom spawn production at their home	**4**	**06.6**

Table 3: Gain in knowledge after one week of vocational training for farm women n=60

Sr. No	Parameter	Pre-evaluation (%)	Post-evaluation (%)	Gain in knowledge
1.	Variety and type of mushrooms	22.0	100.0	78.0
2.	Nutritive value of mushroom	12.0	100.0	88.0
3.	Knowledge of diseases controlled by consumption of mushroom	17.6	96.5	77.9
4.	Knowledge about identification of good quality / edible type of mushrooms	28.3	98.0	54.0
5.	Common diseases of mushrooms and its control	5.9	100.0	94.1
6.	Market price and Profit from mushroom	21.1	90.6	69.5
7.	Method of compost / manure making	8.2	96.5	88.3
8.	Preparation of mushroom spawn production	3,5	94.1	90.6
9.	Method of preparation of casing	9.4	97.6	88.2
10.	Storage and harvesting techniques of mushroom	25.9	100.0	74.1
11.	Value addition to mushroom	31.8	100.0	68.2

Table 4: Suggestions given by the farm women received one week vocational training

Sr.No	Suggestion	Frequency	Ranking
1.	More importance to practical classes	51	III
2.	Regular supply of spawn / spawn production unit	56	I
3.	Supply printed information materials / booklets / guide book	33	V
4.	Publicity of mushroom nutritional benefits in rural / semi urban areas for increasing consumption culture	38	IV
5.	Linkages with banks and other government offices engaged in rural development for specially for financial assistance	53	II
6.	To increased training days	06	VII
7.	Organize training at different out stations for better exposure	11	VI

Reasons of participation

The factors which motivated the respondents to join the training course were given for ranking in order of importance as perceived by them. As shown in the table-2, 76.6 per cent respondents joined training course to adopt mushroom growing an enterprise, 18.3 per cent wanted to learn about mushroom growing techniques for self consumption and 31.6 per cent joined the training course just to get the certificate of training. Lesser participants showed their interest to improve their knowledge about mushroom spawn production and to teach fellow farmers about mushroom growing. Similar results were also reported by Suharban *et al* [17]. It was evident that majority of respondents joined the training course to adopt mushroom growing as an enterprise.

Increase in level of knowledge

In pre-evaluation test, the knowledge range of different participants was 3.5 per cent regarding preparation of mushroom spawn to 31.8 percent in case of knowledge about the value addition to mushroom. Post training score of various practices ranged from 90.6 per cent for market price and profit from mushroom to 100 per cent in case of various practices like type of mushrooms, presence of nutrients in mushroom, diseases of mushrooms, storage and harvesting, value addition to mushroom, identification of usable and non usable mushroom (Table 3). Kulvir also observed the similar result[18]. It was thus concluded that pre training knowledge score was not much satisfactory for all the aspects of training programme. However, the knowledge score gained by participants after training was more satisfactory in all aspects. The reason behind the satisfactory gain in knowledge might be the keen interest of all the participants about this entrepreneur.

Suggestions given by the trainees

The suggestions offered by the trainees for further improvement of the training course were presented in table 4. The results showed that more importance to the regular supply of spawn, financial support and linkages with bank, organising more practical classes were the main suggestions. Besides these suggestions, 53 per cent of the respondents felt that financial assistance by government banking institutions should be provided for mushroom growing and 6 per cent respondents also gave stress on increase in duration of training, while 11 per cent were in favour of organising training at different out stations for better exposure

CONCLUSION

Mushroom growing is such an enterprise in which requirement of land is not a big issue so even landless farmers can augment their income through mushroom cultivation. The farm women of these villages were surprised with the success of mushroom cultivation. They could not just believe such a good amount of net profit of 8000 to 10000 rupees per month after selling their product at the rate of Rs 200 per kg and Rs 800 per kg (dried form) to the jai Gurudeo followers. Now women farmer of these villages are interested to take up mushroom cultivation as a major income generating activity throughout the year due to its heavy and regular demand by the Jai gurudeo followers group. The result of this study clearly indicates that the good conduct of vocational / off campus training programme can provide needed information and guidance

to the rural unemployed farm women to start and flourish any agricultural enterprise.

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