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RESEARCH ARTICLE :

Impact assessment of vocational training on mushroom production technology to farmers and rural youth at Krishi Vigyan Kendra, Tiruvallur district, Tamil Nadu

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SUMMARY : In Tiruvallur district, Tamil Nadu paddy crop is cultivated in 96000 hectares with the production of 3.9 lakh tonnes. In Tiruvallur district number of operational holdings under marginal (0.00 – 0.99 ha) category is 185059 and under small farmers category is 22572. Effective utilization of farm waste in mushroom cultivation, as an allied agricultural activity under integrated farming system in doubling the income of farmers is being insisted by conducting skill oriented trainings to facilitate the complete knowledge of mushroom production activity on commercial scale in KVK, Tirur, Tiruvallur district. The present study was conducted to assess the impact of vocational training programme on knowledge about mushroom production in commercial scale and for self-employment at Krishi Vigyan Kendra, Tirur, Tiruvallur district Tamil Nadu. The results of the study revealed that knowledge gained from various lectures and demonstrations on mushroom production technologies was analysed by conducting pre and post evaluation tests and the results depicted that the post evaluation scores of gain in knowledge of various practices ranged from 64.00 to 98.00 per cent. The adoption of mushroom production on commercial scale by the participants was evaluated periodically and among the 37 participants of vocational training, 11 participants (29.72%) have started mushroom production at cottage level and are practicing sincerely. Thus, it can be inferred that exposure to training had increased the knowledge of participants regarding mushroom production. The technical support and supply of oyster and milky mushroom spawn through KVK is being facilitated to the farmers and rural youth of Tiruvallur district.

KEY WORDS :
Mushroom, Vocational training, Production technology

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BACKGROUND AND OBJECTIVES

India produces about 600 million tonnes of agricultural wastes per annum and a major part of it is left out to decompose naturally or burnt *in situ* which can effectively be utilized to produce high quality food such as mushrooms followed by utilization of spent mushroom substrate by converting it into organic manure for crop plants. Mushroom

production in the country started in the 70s but with the development of the technologies for environmental controls and understanding of the cropping systems, mushroom production shot up from mere 5000 tonnes in 1990 to about 1,20,000 tonnes at present (Singh and Kamal, 2012).

Mushroom has been cultivated and used as nutritious food since ancient times for their nutritional value and flavour, which is low in calories and rich in carbohydrates, essential amino acids, fibre, important vitamins and minerals. Mushroom growing can help in a long way in the efficient utilization of agricultural and industrial waste. It can also play a significant role to alleviate poverty and generate employment opportunity for educated unemployed youth (Rachna *et al.*, 2013). In this regard, trainings on mushroom production is being conducted at KVK, Tiruvallur to farmers, farm women and rural youth. During the year 2016-17, one vocational training courses of 5 days duration has been conducted. An evaluation study of such self employment oriented programme would help to improve the income and standard of life in future. In order to analyse the impact of these training programmes, the present study was undertaken.

RESOURCES AND METHODS

Field of evaluation research is the application of scientific methods to measure the implementation and impacts of a programme for decision-making purpose (Rutman, 1984). The purpose of evaluation helps in identifying the key evaluation questions, on the basis of which appropriate form of evaluation, appropriate model of evaluation and design of research can be selected (Peshin *et al*., 2009). The training programme on mushroom production at KVK, Tiruvallur was focused on poor farmers, farm women and youths for those who have interest in self-employment. The study was conducted at ICAR-KVK, Tiruvallur, Tamil Nadu. Exposure visit to a mushroom production unit was conducted during the training programme. During the year 2016-17, three trainings for farmers, one training for rural youth, one vocational training and three trainings for extension personal were conducted by KVK, Tiruvallur. Among them a total of 37 respondents attended the vocational training were selected randomly for the impact analysis on training on mushroom production. Among 37 respondents 32 were men and 5 were women. In this evaluative study the reactions with respect to different aspects of teaching/learning situations, learning (knowledge gain) and adoption were studied. Thorough training on various aspects of mushroom production was given which included the cultivation techniques, preparation of spawn, substrates preparation, marketing of fresh product, exposure visit, preservation, demonstration units, cost benefit ratio, etc. Training impact was assessed after a time gap of one year. A pre tested interview schedule was administered with the participants to know the impact of the training programme. Data collected through personnel interview method and the collected data were subjected to simple percentage analysis. The impact of the training was assessed by parameters such as impact of knowledge and change perception level of mushroom growers. Pre test was conducted to know the level of knowledge of participants regarding variety, diseases of mushrooms as well as their storage and preservation etc. Similarly, after completion of training course, post- evaluation was performed in order to assess the knowledge gained by the trainees an effectiveness of training.

OBSERVATIONS AND ANALYSIS

The results obtained from the present study as well as discussions have been summarized under following heads:

Profile of the mushroom production participants:

In the profile characteristics analysis (Table 1), it is observed that the majority of the participants (59.45%) belonged to the middle age (35 – 50 years) category, followed by young age category (29.73 %) and only 10.81 per cent of the participants belonged to old age category. Nearly 54.05 per cent of the participants had primary school education followed by secondary school (24.32 %) and higher secondary (21.62%). About 67.56 per cent of the participants were small farmers followed by medium farmer (10.81%). Majority of participants (75.67%) earning was <Rs. 1 lakh as annual income. Most of them had contact with extension agency and development departments related to agriculture and contact with Deputy Agricultural Officers (67.56%) and KVK scientists (64.86%).

Knowledge gain after acquiring training with respect to the schedule of programme:

Knowledge gained from various lectures and

Table 1 : Distribution of participants as per their profile characteristics **(n= 37)**

Sr. No.	Profile characteristics	Frequency	Percentage
1.	Age		
	Young	11	29.73
	Middle	22	59.45
	Old	4	10.81
2.	Education		
	Functionally Literate		
	Primary school	20	54.05
	Secondary school	9	24.32
	Higher secondary	8	21.62
3.	Annual Income		
	Low (< 1 lakh)	28	75.67
	Medium (1-2 lakh)	8	21.62
	High (>2 Lakhs)	1	0.03
4.	Farm size		
	Nil	8	21.62
	Small farmer	25	67.56
	Medium farmer	4	10.81
	Big farmer	0	0
5.	Mushroom production experience		
	Nil	26	70.27
	Low	6	16.21
	Medium	3	8.10
	High	0	0.00
6.	Mass media participation		
	Low	25	67.56
	Medium	15	40.54
	High	8	21.62
7*.	Social participation		
	Village panchayat	30	81.08
	Co- operative society	16	43.24
	FDG	10	27.02
7.*	Extension Participation		
	Asst.Agrl. Officer	18	35.29
	Agrl. Officer	6	16.21
	Deputy Agrl.Officer	25	67.56
	KVK Scientists	24	64.86
	Input dealers	18	48.64
8.	Urban contact	37	100

* Multiple response

demonstrations on mushroom production technologies was analysed by conducting pre and post evaluation tests and the results depicted that the post evaluation scores of gain in knowledge of various practices ranged from 64.00 to 98.00 per cent (Kaur, 2016) (Table 2). The data on marks scored were analysed by paired 't' test to find out the statistical significance of the observed difference between pre-test and post-test training knowledge scores for mushroom production practices (Singh *et al.*, 2010). The t- values of difference between pre and post training mean knowledge score of all the practices for mushroom production were significant ($p < 0.05$)(Table 3). Pre-test mean knowledge score ranged between 0.04 and 3.77. Maximum knowledge obtained after training was for bed

Table 2 : Knowledge gain after acquiring training with respect to the schedule of programme

Sr. No.	Particulars	Pre evaluation (%)	Post evaluation (%)	Improvement in knowledge
1.	Types of mushroom and nutritional status in mushroom	11.75	93.75	82
2.	Mother spawn production techniques	0	72.00	72.00
3.	Bed spawn preparation techniques	22.50	95.00	72.5
4.	Bed preparation for oyster mushroom and milky mushroom	12	90.00	78.00
5.	Disease infection in mushroom bed	0	78.00	78.00
6.	Income generation from mushroom production	6.00	78.00	72.00
7.	Benefits of mushroom and value addition of Mushroom	16.25	67.75	51.50

Table 3 : Gain in knowledge of trainees on mushroom production practices (n=37; Maximum knowledge score = 72)

Sr. No.	Details	Mean knowledge scores		
		Pre-training	Post-training	t- - value
1.	Types of mushroom and nutritional status in mushroom	0.72	5.71	15.30**
2.	Mother spawn production techniques	0.40	9.63	18.25**
3.	Bed spawn preparation techniques	1.59	6.60	16.82**
4.	Bed preparation for oyster mushroom and milky mushroom	3.77	12.17	27.26**
5.	Disease infection in mushroom bed	0.04	1.03	17.23**
6.	Income generation from mushroom production	0.23	4.17	16.27**
7.	Benefits of mushroom and value addition of Mushroom	0.45	3.11	13.84**

** indicates significance of value at P <0.01 with df = 36

Table 4 : Adoption of mushroom production technology before and after training (%)

Sr. No.	Technologies	Before Training		After Training	
		Adopted%	Not Adopted%	Adopted%	Not Adopted%
1.	Adoption of mushroom production technology	5.40	94.59	29.72	70.03

preparation for oyster and milky mushroom. The post training mean knowledge scores on different practices of mushroom production ranged between 1.03 and 12.17.

Adoption of mushroom production technology analysis :

The adoption of mushroom production by the participants was evaluated periodically. The technical support and supply of oyster mushroom spawn through KVK was facilitated to the beneficiaries. The result on the adoption of oyster mushroom production technology trained during the training programme is presented in Table 4. Among the 37 participants of vocational training, 11 participants (29.72%) have started mushroom production at cottage level and are practicing sincerely. During the year 2016-17 training on mushroom production was given to a total number of 385 beneficiaries *viz.*, farmers, farm women, rural youth and extension functionaries.

Conclusion :

There is as tremendous potential for mushroom production and all commercial edible mushrooms and is increasing in demand for quality products at competitive rate both in domestic and export market. Hence, commercial utilization of agriculture wastes in mushroom cultivation are being emphasized to the farmers trough trainings. Training on mushroom production technology through Krishi Vigyan Kendra, Tiruvallur has showed better influence on the farmers and rural youth to practice mushroom production as agriculture allied activity to increase their income which in turn improve their standard of life.

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