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Neelu Vishwakarma
Krishi Vigyan Kendra, Jabalpur,
Madhya Pradesh, India

Dinesh Kumar Singh
Krishi Vigyan Kendra, Jabalpur,
Madhya Pradesh, India

Alpana Sharma
Krishi Vigyan Kendra, Shahdol,
Madhya Pradesh, India

Akshata Tomar
Krishi Vigyan Kendra, Jabalpur,
Madhya Pradesh, India

Rashmi Shukla
Krishi Vigyan Kendra, Jabalpur,
Madhya Pradesh, India

Corresponding Author:
Neelu Vishwakarma
Krishi Vigyan Kendra, Jabalpur,
Madhya Pradesh, India

Impact of Skill development training on mushroom production in Madhya Pradesh District of Jabalpur

Neelu Vishwakarma, Dinesh Kumar Singh, Alpana Sharma, Akshata Tomar and Rashmi Shukla

Abstract

Mushroom production in rural and semi-urban areas offers a simple and affordable way to combat poverty and create employment for educated unemployed youth. A study was conducted to evaluate the impact of training on knowledge gain in mushroom production as a self-employment opportunity. The training program focused on farmers, farm women, and youths interested in pursuing mushroom production. Participants received comprehensive training on cultivation techniques, spawn preparation, substrate preparation, marketing, preservation, and value addition. Out of 125 participants (93 men and 32 women) who completed the five courses, significant improvements were observed in knowledge acquisition. After training, 73.6% of trainees demonstrated improved understanding of different types of mushrooms 75.2% gained knowledge nutrition and health benefits, harvesting methods and preparation of compost 76.8% recognized the preparation of compost. Overall, the study concludes that the training effectively increased participants' knowledge in all aspects of mushroom production, highlighting the potential for successful self-employment in this field.

Keywords: Mushroom production, Skill training, knowledge level, self-employment

Introduction

India is primarily an agriculture-based country due to diversity in soil and climatic conditions that allows a production of variety of crops in different parts of the country. This also provides vast potential for the cultivation of mushrooms due to ample availability of raw materials and favorable climatic conditions. FAO has recommended mushrooms as a food item contributing to protein nutrition of the developing countries. In a country like India, where vegetarians dominate, attempt should be made to popularize a vegetable protein source like mushroom documented by Bahl (2000)^[1]. Mushroom growing has been appreciated as a technically feasible and profitable venture and widely accepted by the researchers as a good venture for higher income, employment generation and rural development. However, 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. Extension trainings have been considered an outlet for exchange of concepts with in a community. Therefore, trainings have been widely accepted strategy with high returns on investment. There is an urgent need to impart technical knowledge to farm women and youth in order to adopt mushroom production as an income generating activity for enhancing their income. In this context, ICAR- Krishi Vigyan Kendra, Jabalpur has conducted 6 training courses on mushroom production technology and its value addition for farmers, farm women and rural youth on various aspects of production of mushroom during the year 2017-18 to 2022. Mushroom production is simple, low cost, and suitable for rural areas, is labour intensive and can provide employment in both the rural areas and semi-urban. Mushroom production will improve their socio-economic condition of farmers, families production is simple, low cost and plays a significant role to alleviate poverty and generate employment opportunity for educated unemployed youth in rural and semi-urban areas.

The objective of this study was to evaluate the effect of training on knowledge learning regarding mushroom production as a self-employment opportunity. The training program targeted farmers, farm women, and young individuals interested in self-employment. Detailed training sessions were conducted on various aspects of mushroom production, including cultivation techniques, spawn preparation, substrate preparation, marketing, preservation, and value addition. A total of 125 participants (93 men and 32 women) attended five courses.

The impact of the training was assessed through pre- and post-evaluation tests, revealing significant improvements in knowledge across different parameters such as mushroom types, preservation techniques, and the importance of casing. These results suggest that the training successfully enhanced the knowledge of participants in all sub-components of mushroom production. Overall, the study concludes that trainees effectively acquired knowledge through the training program, highlighting its potential to address employment challenges and contribute to rural development.

Materials and Methods

Selection of Participants

The training program on mushroom production targeted farmers, farm women, and rural youth interested in self-employment. The study took place at ICAR-KVK in Jabalpur, Madhya Pradesh. A total of 125 trainees, including 93 men and 32 women, received training on mushroom cultivation in six batches.

Collection of Data

A questionnaire was developed to gather general information and background details of the participants, including their landholding. Prior to the training program, a pre-evaluation test was conducted to assess the participants' existing knowledge levels regarding cultivation techniques, spawn preparation, substrate preparation, marketing, preservation, value addition, and other related aspects. The training program provided comprehensive instruction on various aspects of mushroom production. Following the completion of the training course, a post-evaluation was conducted to evaluate the knowledge acquired by the trainees and the effectiveness of the training.

To assess the trainees' knowledge, a set of 11 questions related to mushroom production, nutrient content, different mushroom products, storage, Value addition harvesting and marketing were used. The deviation or gain in knowledge was calculated by comparing the scores obtained in the pre- and post-training knowledge tests.

Post evaluation score – Pre evaluation score Deviation/gain in Knowledge = ----- X 100 Total respondents
Preparation of composting, wheat straw, wheat seeds, potato, Agar, Agar plates, Sprit Lamp, polythene bags, cooking utensils, spawns and polythene sheets were the materials used for mushroom spawn and cultivation.

Results and Discussion

Socio-economic profile: The participants exhibited variations in their socio-economic status, including education, occupation, landholding, and annual income, as shown in Table 1. The findings indicated that 25.6 percent of the participants were female, while 74.4 percent were male. The age range of the participants was up to 18 years, with the majority (49.6%) falling in the 31-40 age group, followed by those below 30 years (30.4%) and above 40 years (20%). In terms of caste, 32.8 percent of the participants belonged to the Backward Caste, followed by the SC/ST (20.8%). Regarding education, 25.6 percent had completed senior secondary level education, 31.2 percent were matriculate and 20.0 percent held Graduates. In relation to occupation, 30.4 percent were housewives, 14.4 percent came from a farming background, and only 9.6 percent were from the service class but majority

were 41.6 percent students most curious. Additionally, it was observed (Table 1) that some participants (29.6%) had small landholdings, with a few (14.4%) falling under the small farmers category. Mostly, 54.4 percent of the participants were landless, indicating that mushroom farming does not require significant land, making it attractive for landless farmers to supplement their family income. The socio-economic factors influencing the adoption of mushroom cultivation did not exhibit consistent relationships with each other. Age was found to have no significant association with the adoption of mushroom Production. Impact of Skill Development Training on Mushroom Production.

Table 1: Socio-economic profile of trainees undergone mushroom production training (n=125)

Sr. No	Particular	Trainees attended Mushroom cultivation	
		Frequency	Percentage
1	Gender		
	Male	93	74.4
	Female	32	25.6
2	Age		
	Up to 18 yr	62	49.6
	31-40 yr	38	30.4
	Above 40 yr	25	20.0
3	Caste		
	SC/ST	26	20.8
	Backward Caste	41	32.8
	Others	58	46.4
4	Education		
	Primary	08	6.4
	Middle Class	21	16.8
	Matriculate	39	31.2
	Senior Secondary	32	25.6
	Graduate	25	20.0
5	Occupation		
	Farming	18	14.4
	Business	05	4.0
	Service	12	9.6
	Housewife	38	30.4
	Student	52	41.6
6	Landholding		
	Landless	68	54.4
	Small (1-2 ha)	18	14.4
	Semi medium (2-4 ha)	37	29.6
	Medium (4-10 ha)	0	0
	Marginal (10 ha)	2	1.6
	Large (>10 ha)	0	0

Reasons for Participation: The participants' motivations for undergoing the training were ranked in order of perceived importance. As shown in Table 2, 54.4% of the respondents joined the training course to pursue the skill of mushroom growing to self-employed, 19.2% wanted to learn mushroom growing techniques for self-consumption, and 12% enrolled to teach fellow farmers about mushroom cultivation. These findings align with similar results reported by Kaur (2016) [1], The 4.8% few participants to learn about developed value added products from mushroom indicating that the majority of participants joined the training course with the intention of adopting mushroom cultivation as an enterprise and increasing their knowledge level.

Table 2: Reasons of participation in training programme in mushroom Production (n=125).

Sr. No.	Reason	Frequency	Percentage	Ranking
1	To adopt the skill of mushroom growing to self employed	68	54.4	I
2	To learn about mushroom growing techniques for self-consumption	24	19.2	II
3	To teach fellow farmers about mushroom growing	15	12	III
4	Just to know about mushroom growing	12	9.6	IV
5	To learn about developed value added products from mushroom	6	4.8	V

Increase in Knowledge Level

Pre-exposure and post-exposure scores were calculated for all sub-components of mushroom production (Table 3). In the pre-evaluation test, participants' knowledge ranged from 20.8% regarding types of mushrooms to 20% in mushroom recipes. Post-evaluation training scores for various practices ranged from 60.8% in spawn production to 62.4% in the importance of casing. It was observed that the pre-training knowledge scores were unsatisfactory for all aspects of the training program. However, participants demonstrated a more satisfactory knowledge score in all aspects after the training. Significant knowledge gain was recorded in sub-components such as nutritive value, optimum growing conditions, types of mushrooms, suitable substrates, importance of casing, quality spawn production, harvesting methodologies, marketing channels, preservation techniques, and mushroom recipes. Furthermore, it was noted that after the training, 73.6% of the respondents showed improved knowledge of mushroom types, while 60.8% exhibited enhanced knowledge of

preservation techniques (Table 3). In addition, 52.8% of the respondents demonstrated increased understanding of the importance of casing during mushroom production. Conversely, 48.8% of the trainees exhibited deviations in knowledge regarding mushroom spawn production, while 44%, 60.8%, and 48% deviated in knowledge of substrate suitability, Self-Growing, and Marketing options, respectively. Based on these findings, it can be concluded that participants successfully acquired knowledge after exposure to the mushroom production training. These results align with the findings reported by (Singh *et al.*, 2010) [2] Impact of the training by knowing the adoption status of mushroom enterprise by the trainees, the problems faced by them in adoption of this enterprise and economic impact of adoption growers.

The satisfactory gain in knowledge can be attributed to the participants' educational backgrounds and their keen interest in the subject matter.

Table 3: Gain in knowledge after training with respect to different components (n=125)

Sr. No	Parameter	Pre training (%)	Post training (%)	Change in knowledge
1	Preparation of compost	18(14.4)	114(91.2)	96(76.8)
2	Choosing of suitable substrate	27(21.6)	82(65.6)	55(44)
3	Importance of casing	12(9.6)	78(62.4)	66(52.8)
4	Self-Growing	22(17.6)	98(78.4)	76(60.8)
5	Different types of mushrooms	26(20.8)	118(94.4)	92(73.6)
6	Nutrition and health benefits	28(22.4)	122(97.6)	94(75.2)
7	Preparation of spawn	15(12)	76(60.8)	61(48.8)
8	Harvesting methods	26(20.8)	120(96.0)	94(75.2)
9	Uses by different mushroom recipes	25(20)	116(92.8)	91(72.8)
10	Preservation techniques	18(14.4)	94(75.2)	76(60.8)
11	Marketing options	22(17.6)	82(65.6)	60(48)

Conclusion

In conclusion, the study demonstrates that participants achieved a significant gain in knowledge through their exposure to training. Mushroom production proves to be an enterprise that does not heavily rely on land availability, allowing even landless farmers to generate additional income through cultivation. The awareness and training provided on mushroom production facilitated income generation, nutrient supplementation, and profitable marketing opportunities among the participants.

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