Perceived importance and benefits of mushroom cultivation among KVK-trained rural farmers

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ABSTRACT

Mushroom cultivation has emerged as a viable enterprise for income generation, nutritional security and employment creation in rural and semi-urban areas. The present study was undertaken to evaluate the perceived importance and benefits of mushroom cultivation among the rural farmers undergone vocational trainings organized by Krishi Vigyan Kendra (KVK), Bawal, Haryana. During 2022-23 to 2024-25, eight training programmes were conducted, in which 280 farmers, farm women and rural youth participated. The study assessed the socio-economic profile of trainees, their perceived importance of different components of mushroom cultivation and their perception regarding the benefits of mushroom production. Data were collected through a structured interview schedule and analyzed using frequency, percentage and weighted mean scores. Results revealed that most trainees were middle-aged, moderately educated and marginal farmers. Spawn production techniques received the highest priority among training components. A large proportion of trainees perceived mushroom cultivation as a low-capital, low-labour and profitable enterprise requiring less time and space. However, some respondents expressed reservations regarding its environmental benefits and health-related aspects. Overall, the findings indicate that mushroom cultivation training programmes significantly enhanced knowledge, perception and acceptance of mushroom production as an income-generating enterprise, highlighting the need for continued capacity-building efforts to strengthen rural livelihoods.

Keywords: Mushroom cultivation; vocational training; perception; rural youth; income generation

INTRODUCTION

Mushroom cultivation is a simple, low-cost and labour-intensive enterprise well suited to rural and semi-urban areas. It can generate employment opportunities and improve the socio-economic conditions of farmers and their families, while helping to address unemployment among both literate and illiterate populations (Biswas 2014). It has emerged as a potential source of employment generation and a means of ensuring food, nutritional and medicinal security in tribal-dominated rural India (Thakur 2020). Beyond improving livelihoods, this practice also provides substantial employment opportunities (Markam et al 2018).

To assess the success of any training programme, periodic appraisal and evaluation of ongoing activities are essential so that suitable modifications can be made to enhance its effectiveness. Evaluation of training is one of the most critical components of any training programme. Generally, well-designed training programmes begin with the identification of training needs and conclude with an evaluation of the training outcomes (Gopal 2008). Training evaluation helps determine whether participants are able to apply the knowledge and skills gained to their respective workplaces or routine activities (Nagar 2009).

Krishi Vigyan Kendra (KVK) is a noble initiative established by the Indian Council of

Agricultural Research with the objective of transferring technologies from laboratories to farmers' fields in areas such as agriculture, horticulture, animal husbandry, floriculture, beekeeping, mushroom cultivation, broiler farming and other allied disciplines (Chandran 2021). Khalid et al (2020) reported that vocational training plays a vital role in improving economic status of youth and has not only increased their income, but has also increased their food, education and health expenditures as well. Krishi Vigyan Kendra, Bawal, Haryana has been imparting training on mushroom cultivation to farmers, farm women and rural youth. During the period from 2022-23 to 2024-25, eight vocational training programmes on mushroom cultivation were organized, in which 280 farmers participated. To evaluate the outcome of these programmes, a study was conducted in Kaithal district, Haryana to assess the socio-economic profile of the trainees and their perception about importance and benefits of mushroom cultivation.

MATERIAL and METHODS

The study was carried out in Rewari district of Haryana. A structured proforma was developed to collect information on the general and socio-economic background of the participants, including age, education, family type and farm size. Data were collected through personal contact with respondents who had undergone training in mushroom cultivation.

Comprehensive training was imparted on various aspects of mushroom cultivation, including cultivation techniques, spawn production, insect and pest management, mushroom preservation and processing, management of spent mushroom substrate and preparation of value-added mushroom recipes. In addition, skill demonstrations and video shows on mushroom production were organized for the participants to enhance practical understanding and learning outcomes.

For the evaluation of trainings, these components were systematically incorporated in the interview schedule. Responses of the respondents were recorded on 3 point continuum scale such as very important (VI), important (I) and not important (NI) by assigning scores 3, 2 and 1 respectively (Sanjeev and Singha 2010). The results were calculated as weighted scores for each minor component.

$$\text{Weighted score (WS)} = \frac{\text{Number of VI} \times 3 + \text{Number of I} \times 2 + \text{Number of NI} \times 1}{\text{Total number of VI} + \text{I} + \text{NI}}$$

Weighted scores were ranked within each discipline. Based on the rankings, the component that sought maximum attention under each thrust area was determined. The data were depicted in the form of percentage of farmers giving response in very important category in each component. Data on the perception of beneficiaries about importance and benefits of mushroom cultivation were also recorded through their responses on different aspects.

RESULTS and DISCUSSION

Data in Table 1 show that more than half of the trainees (25-45 years) were middle aged (57.85%) followed by more than three-fourth (28.57%) who were young (18-25 years). Most of them were middle pass (45.00%) followed by primary pass (25.71%). They lived in nuclear (52.85%) and joint (47.14%) families. Most of the trainees (43.92%) trainees were marginal farmers having land less than 1 hectare followed by 22.14 per cent small farmers with 1-2 hectares of land.

In a study conducted in Kaithal district of Haryana, Kumar et al (2021) reported that maximum number of the trainees belonged to middle age group (62.18%) having education up to middle (48.28%) and primary (28.89%). Gupta et al (2022b), in a study conducted in Bilaspur district of Chhattisgarh, reported that every mushroom farmer and the majority of their families were literate. Only small farmers liked mushroom growing. In Kangra valley of Himachal Pradesh, Walia et al (2025) observed that the proportion of joint families was higher (51.67%) compared to that of nuclear families (48.33%). It was found that not even a single mushroom grower was younger than 25 years. The overall literacy rate of the head was 91.67 per cent. Sharma et al (2025) reported that in Solan district of Himachal Pradesh, most mushroom growers were literate and above 40 years of age. Sahu et al (2025), while conducting a study on mushroom growing women in Raipur district of Chhattisgarh, found that the majority of respondents were between the age of 35 and 45 and the highest percentage of respondents

Table 1. Socio-economic profile of the trainees

Variable	Respondents (n = 280)	
	Frequency	Percentage
Age (years)		
18-25 (Young)	80	28.57
25-45 (Middle age)	162	57.85
>45 (Old)	38	13.57
Education level		
Illiterate	18	6.42
Primary pass	72	25.71
Middle pass	126	45.00
Matriculate	32	11.42
Higher secondary pass	12	4.28
Graduation and above	20	7.14
Family type		
Nuclear	148	52.85
Joint	132	47.14
Farm size (ha)		
Landless	54	19.28
Marginal (<1)	123	43.92
Small (1-2)	62	22.14
Semi-medium (2-4)	24	8.57
Medium (4-10)	7	2.50
Large (>10)	10	3.57

(25.64%) were studied up to high school. Pandey et al (2018) reported that maximum number of the trainees of mushroom cultivation belonged to middle age group (61.11%), having education up to middle (47.78%) and primary (28.89%). Singh et al (2024) reported that of the total respondents 58.33 per cent were in the age group of 31-40 years; 71.67 were from backward class; mainly senior secondary (35.00%).

Data presented in Table 2 indicate the weighted scores given by the trainee farmers to different components of mushroom production. It was found that spawn production techniques ranked first with 2.58 weighted score, followed by preparation of various recipes from mushrooms (Rank II, weighted score 2.38), mushroom cultivation techniques (Rank III, weighted score 2.29), insect pest management (Rank IV, weighted score 2.26), mushroom preservation and processing (Rank V, weighted score 2.24) and management of spent mushroom substrate (Rank VI, weighted score 1.82).

Pandey et al (2018) recorded the maximum weighted score of 2.51 and minimum 1.82 by spawn production techniques and management of spent mushroom respectively. Kumar et al (2021) also observed the maximum weighted score (2.51) and minimum (1.82) for spawn production techniques and management of spent mushroom respectively.

Table 3 presents the trainees' perceptions regarding the benefits of mushroom production. A majority of the trainees perceived mushroom cultivation to be advantageous, particularly in terms of resource efficiency and economic returns. The highest percentage (87.86%) opined that mushroom production requires less time and space, followed by 85.71 per cent who believed that mushrooms fetch a high market price and 77.86 per cent who agreed that the enterprise requires relatively low capital investment. However, notable proportions of respondents expressed reservations, with 33.93 per cent disagreeing that mushroom cultivation is environmentally beneficial, 32.14 per cent disagreeing that mushrooms strengthen the immune system and 28.93 per cent disagreeing that waste farm produce is utilized in mushroom cultivation.

Gupta et al (2022a) reported that mushroom cultivation contributes to sustainable and environment-friendly farming practices. The use of agricultural waste as a growing substrate and the recycling of spent mushroom substrate add value through applications in horticulture, organic fertilization and animal feed. In addition, mushrooms are highly valued as nutritious foods, being low in calories, carbohydrates, fat and sodium and free from cholesterol. They are also rich sources of essential nutrients such as selenium, potassium, riboflavin, niacin, vitamin D, proteins and dietary fiber.

Nagaraj et al (2017) found that nearly all trainees considered mushrooms as vegetarian food with high nutritive value and a majority perceived cultivation as profitable. Sharma and Mishra (2024) reported that most respondents recognized mushroom cultivation as a profitable venture, its saleability in local markets (91.43%), high nutritive value and the availability of value-added mushroom products (81.43%). Kumar and Yadav (2023) found that ninety per cent respondents were satisfied with the high return they fetched from mushroom cultivation followed by the fact that it required lesser time and space (88%), it was a profitable enterprise (81%), it required less capital (78%) and less labour (76%) and its processing was very easy (76%). In overall, 69 per cent respondents socially accepted the mushroom production as an income generation activity.

Table 2. Perceived importance of different aspects of mushroom cultivation as expressed by the respondents

Aspect	Respondents (n = 280)			Weighted score	Rank
	Very important	Important	Not important		
Mushroom cultivation techniques	117 (41.79)	128 (45.71)	35 (12.50)	2.29	III
Spawn production techniques	179 (63.93)	81 (28.93)	20 (7.14)	2.58	I
Insect pest management	128 (45.71)	98 (35.00)	54 (19.29)	2.26	IV
Mushroom preservation and processing	106 (37.86)	134 (47.86)	40 (14.28)	2.24	V
Management of spent mushroom substrate	81 (28.93)	67 (23.93)	132 (47.14)	1.82	VI
Preparation of various recipes from mushrooms	117 (41.79)	151 (53.93)	12 (4.28)	2.38	II

Figures within parentheses are per cent values

Table 3. Distribution of respondents according to their perception on benefits of mushroom production

View	Respondents (n = 280)					
	Yes		No		Uncertain	
	f	%	f	%	f	%
Mushroom is a pure vegetarian food	184	65.71	73	26.07	23	8.21
Mushrooms have high nutritive value	190	67.86	67	23.93	23	8.21
Mushrooms strengthen our immune system	118	42.14	90	32.14	72	25.71
Mushroom cultivation is a profitable enterprise	207	73.93	45	16.07	28	10.00
Waste farm produce is used in mushroom cultivation	154	55.00	81	28.93	45	16.07
Mushroom cultivation is good for environment	132	47.14	95	33.93	53	18.93
Mushroom cultivation requires lesser time and space	246	87.86	28	10.00	6	2.14
Mushroom cultivation involves less labour	213	76.07	56	20.00	11	3.93
Mushroom cultivation requires less capital	218	77.86	34	12.14	28	10.00
Mushroom processing is very easy	202	72.14	64	22.86	14	5.00
Mushroom fetch high price	240	85.71	22	7.86	18	6.43
Mushrooms' recipe preparation is quite easy	179	63.93	67	23.93	34	12.14
Mean	190	67.86	62	22.14	28	10.00

Multiple responses

CONCLUSION

The study concludes that vocational training programmes on mushroom cultivation organized by KVK, Bawal have played a significant role in enhancing the knowledge and positive perception of trainees towards mushroom production. The majority of respondents recognized mushroom cultivation as a profitable and resource-efficient enterprise that requires less time, space, capital and labour, making it particularly suitable for marginal farmers, farm women and rural youth. High priority given to spawn production techniques reflects the practical relevance of training content. Although some trainees expressed uncertainty regarding environmental and health-related benefits, overall acceptance of mushroom cultivation as an income-generating activity was encouraging. The findings emphasize the importance of regular training, practical demonstrations and awareness programmes to further improve understanding of the nutritional and environmental benefits of mushroom cultivation. Strengthening such capacity-building initiatives can

contribute substantially to livelihood enhancement, employment generation and sustainable rural development.

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