

International Journal of Agriculture Extension and Social Development

Volume 9; Issue 3; March 2026; Page No. 381-384

Received: 02-12-2025
Accepted: 09-01-2026

Indexed Journal
Peer Reviewed Journal

Impact of milky mushroom cultivation and value addition trainings among the unemployed Rural Youth of Krishna District, Andhra Pradesh, India

¹G Krishnaveni, ²D Sudha Rani and ³SK N Meera

¹SMS (Home Science), KVK, Ghantasala, Andhra Pradesh, India

²Senior Scientist & Head, KVK, Ghantasala, Andhra Pradesh, India

³Director, ATARI, Zone-X, Hyderabad, Andhra Pradesh, India

DOI: <https://www.doi.org/10.33545/26180723.2026.v9.i3f.3406>

Corresponding Author: G Krishnaveni

Abstract

The present study was conducted to assess the impact of vocational training programmes conducted by (on mushroom production for entrepreneurship development) Krishi Vigyan Kendra (KVK), Ghantasala. On a total of 120 respondents were randomly selected among the farmers, farm women and rural youth who had undergone training and demonstrations on mushroom production techniques during the period from 2019 to 2024 in Krishna District, Andhra Pradesh. The results revealed that the pre-training knowledge level of the respondents was relatively low regarding mushroom cultivation. However, a significant improvement in knowledge was observed after the training programme. The study indicated that training exposure increased the knowledge level of the respondents regarding mushroom production techniques by 60.6 percent. The improvement in knowledge level may be attributed to the educational background of the participants, their keen interest in learning and the effective technology transfer methods adopted during the training programme. Furthermore, some trainees adopted mushroom cultivation as a self-employment activity and established their own production units. The findings of the study revealed that mushroom production training created a favourable attitude among the trainees and contributed to improving the economic status of the beneficiaries who adopted it as a livelihood activity.

Keywords: Mushroom, demonstration, knowledge, entrepreneurs

Introduction

Mushrooms, often referred to as “white vegetables” or “vegetarian meat,” are highly nutritious foods containing significant amounts of proteins (20–35%), vitamins, minerals and dietary fibre. Due to their high nutritional value and medicinal properties, mushrooms have gained increasing importance in human diets as well as in income-generating activities for rural households. Among various species, milky mushroom (*Calocybe indica*) is a robust, fleshy, milky white, umbrella-shaped tropical mushroom known for its longer shelf life and higher market demand. Similarly, oyster mushrooms (*Pleurotus* spp.) are widely cultivated due to their adaptability, simple cultivation methods and good yield.

Krishna district of Andhra Pradesh falls under the Krishna agro-climatic zone, where the mean temperature ranges from 24.3–30°C in January, while the maximum temperature during May can reach up to 46°C. Such a wide range of temperatures makes the region suitable for the cultivation of different mushroom species throughout the year. Paddy is the major crop grown in the district, covering an area of about 1.90 lakh hectares under the Krishna irrigation command area. As a result, large quantities of paddy straw are available, which serves as an excellent substrate for mushroom cultivation. Therefore, there is considerable scope for promoting tropical mushrooms such

as oyster mushroom (*Pleurotus* spp.) and milky mushroom (*Calocybe indica*) in the district.

Krishi Vigyan Kendra (KVK), Ghantasala, established in 2012, has been actively involved in technology transfer, capacity building, and skill development programmes for farmers, farm women, and rural youth. As part of its mandate, the KVK has been organizing skill development training programmes and demonstrations on mushroom cultivation. During the period 2019–2024, several training programmes were conducted to promote mushroom cultivation as an income-generating enterprise.

For the present study, a total of 120 respondents who had undergone training and demonstrations on mushroom production techniques during 2019–2024 were randomly selected. The study aimed to assess the knowledge level and adoption behaviour of trainees regarding mushroom cultivation practices. The results indicated that the pre-training knowledge level of respondents was relatively low, whereas the post-training knowledge level improved significantly in all aspects of mushroom production. The improvement in knowledge level may be attributed to the keen interest of participants and the effective extension methods adopted for technology transfer during the training programmes.

Further, some trainees adopted mushroom cultivation as a self-employment activity and established their own

mushroom production units, earning an average monthly income of ₹35,000–40,000. A few mushroom entrepreneurs have also diversified into value-added products such as mushroom pickles and dehydrated mushrooms, thereby enhancing their income opportunities. The study revealed that mushroom production training programmes created a favourable attitude among the trainees and significantly contributed to improving the economic status of the beneficiaries who adopted mushroom cultivation as a livelihood option.

Methodology

For the present investigation, during 2025-26 vocational training programmes conducted during the years 2019–20, 2020–21, 2022–23, and 2023–24 for poor and marginalized farmers were considered for impact analysis. A total of 120 respondents were selected for the study. Out of these, 60 respondents were trainees (beneficiaries) who had participated in milky mushroom cultivation training programmes organized at KVK, Ghantasala between 2019 and 2024. These respondents mainly belonged to landless agricultural labour households and were selected using a random sampling method. For comparison and impact assessment, another 60 respondents who had not participated in the training programmes were selected randomly from six different villages in the district. These respondents also belonged to poor and marginalized sections of society and were engaged in mushroom production activities. Thus, the total sample size for the study comprised 120 respondents, including both trainees and non-trainees. To assess the impact of the training programmes during 2025-26 a structured questionnaire was developed covering different aspects of mushroom cultivation, including production techniques, nutritive value of mushrooms, preparation of value-added products, harvesting methods, and storage practices. A pre-training and post-training knowledge test was conducted among the trainees to measure the change in their perception and knowledge levels. Suggestions from the trainees were also collected to improve the quality and effectiveness of future training programmes. The change in knowledge level was measured by calculating the difference between the scores obtained in the pre-training and post-training tests. The collected data were systematically tabulated and analysed

using statistical tools such as frequency, percentage, and ranking to draw meaningful conclusions regarding the impact of the training programmes.

$$\text{Change of Knowledge} = \frac{\text{After training} - \text{Before training}}{\text{Total respondents}} \times 100$$

Results and Discussion

Training courses aim at enhancing adoption and diffusion of innovations. Some of the outcomes envisaged for any training programme were gain in knowledge, gain in skill acquired and ultimately in more adoption and integration among farming community. An important indicator of the impact of training programme is the extent, to which they have adopted the package of practice of mushroom cultivation technology. KVK, Ghantasala has been organized long and short duration training on Mushroom production both to rural youth and rural women. Mushroom production has become one of few enterprises which rural women of district has been adopted in at household level and as commercial enterprise as a source of income generation after the proper dissemination of technology through KVK.

Reasons of participation

The factors that motivated the respondents to join the training programme were ranked according to their perceived importance. Table 1 reveals that 53.3 per cent of the respondents attended the training to adopt mushroom production as a profitable enterprise. About 61.6 per cent of the participants joined the training to learn about mushroom production technology for improving nutrition and generating additional income. All the respondents (100%) expressed their interest in gaining knowledge on the cultivation of different varieties of mushrooms. Around 43.3 per cent of the participants attended the training mainly to obtain a certificate required for securing a bank loan to start their enterprise. Nearly 40.0 per cent of the respondents joined the training to establish linkages with KVK for technical support. A comparatively smaller proportion (35.8%) of the participants showed interest in disseminating the knowledge and skills of mushroom production among fellow farmers.

Table 1: Reasons of participation in training programme in mushroom cultivation. (sample No: 120)

S. No.	Reasons	Number	Percentage (%)
1	To motivate rural youth and farm women to adopt mushroom production as a profitable enterprise	64	53.3
2	To create awareness and provide knowledge on mushroom production technology for improving nutrition and generating additional income	74	61.6
3	To gain knowledge on the cultivation of different varieties of mushrooms	100	83.3
4	To obtain a training certificate for securing a bank loan	52	43.3
5	To develop linkage with the Krishi Vigyan Kendra for technical support.	48	40.0
6	To disseminate the knowledge and skills of mushroom production among fellow farmers.	43	35.8

Change in perception level of respondents (N= 120)

The pre-test and post-test results indicated a considerable improvement in the knowledge level of the trainees after participating in the mushroom cultivation training programme. Prior to the training, the participants possessed limited knowledge regarding different aspects of mushroom production. However, after completion of the training, their

knowledge levels improved substantially across all the selected parameters.

The highest increase in perception level (71.9%) was observed in knowledge related to different mushroom species and identification of edible mushrooms, where the knowledge level increased from 12.25 per cent in the pre-test to 84.15 per cent in the post-test. Similarly, knowledge

regarding materials and cultivation techniques for different types of mushrooms increased from 10.5 per cent to 71.1 per cent, showing an improvement of 60.6 per cent.

The training also considerably enhanced the trainees' knowledge about value-added products of mushrooms, which increased from 6.15 per cent before training to 64.2 per cent after training, indicating a change of 58.05 per cent. Knowledge related to harvesting and storage techniques improved from 12.3 per cent to 69.3 per cent, reflecting a 57.0 per cent increase. Likewise, knowledge on compost-making methods improved from 3.56 per cent to 59.25 per cent, with a change of 55.69 per cent.

The trainees' understanding of the nutritional and medicinal benefits of mushrooms also improved from 11.16 per cent to 65.3 per cent, registering a change of 54.14 per cent. Knowledge regarding the economic benefits of mushroom cultivation increased from 15.3 per cent to 66.5 per cent, showing an improvement of 51.2 per cent. Similarly, awareness about pest and disease management in mushroom

production increased from 11.1 per cent to 56.12 per cent, indicating a change of 45.02 per cent.

Before the training, the participants had no knowledge about mushroom spawn production (0%). After the training programme, their knowledge level increased to 48.5 per cent, showing a noticeable improvement. In addition, awareness regarding financial assistance such as loans, schemes and subsidies provided by public and private institutions increased from 15.6 per cent to 76.3 per cent, with a change of 63.7 per cent.

Overall, the findings clearly demonstrate that the training programme was highly effective in improving the knowledge and awareness of the trainees on various aspects of mushroom cultivation, value addition and enterprise development. The training enabled the participants to acquire both technical skills and information about financial support mechanisms for establishing mushroom production units.

Table 2: Change in perception level of respondents for mushroom production (N=120)

S. No	Particulars	Pre- test knowledge before training (%)	Post- test knowledge after training (%)	Change perception level (%)
1	To acquire knowledge on different mushroom species and the identification of edible mushrooms.	12.25	84.15	71.9
2	To gain knowledge on the nutritional and medicinal benefits of mushrooms	11.16	65.3	54.14
3	To acquire knowledge about the materials and cultivation techniques for different types of mushrooms	10.5	71.1	60.6
4	To gain knowledge on different compost-making methods	3.56	59.25	55.69
5	To understand the management of pests and diseases in mushroom production	11.1	56.12	45.02
6	To learn about the economic benefits of mushroom cultivation	15.3	66.5	51.2
7	To understand the techniques involved in harvesting and storing mushrooms	12.3	69.3	57.0
8	To acquire knowledge about the preparation and production of mushroom spawn	0	48.5	48.5
9	To learn about value-added products of mushrooms	6.15	64.2	58.05
10	To understand the financial assistance, including loans, schemes, and subsidies, offered by public and private institutions for mushroom cultivation	15.6	76.3	63.7

Entrepreneur developed by farmer/ farm women

According to the randomly selected ex-trainees included in the study, out of the 120 respondents, one of the women trainees, Smt. M. Prasanna from Aviripudi village, Movva mandal of Krishna district, started commercial production of milky mushroom. She sold a total of 30.7 quintals of mushrooms in the local market, as presented in Table 3. During the year 2021, she established Abishek Mushroom Unit as a small start-up for milky mushroom cultivation with a financial investment of Rs. 4.00 lakhs, mobilized

through her family members and DWACRA group. In the initial stages, the situation was very challenging, and she could earn only about Rs. 5,000 after deducting the cultivation expenses. However, with continuous effort and improvement in production practices, at present she gradually achieved turnover 3.9 lakh income. In recognition of her success, she received the Woman Entrepreneur Award on International Women's Day (08.03.2021) from the District Collector of Krishna district. The details of her production and financial benefits are presented in Table 3.

Table 3: Quantity of mushroom and its worth sold by one of the beneficiaries

Year	Produce sold (Q)	Mushroom worth (in Rs.)
2021-22	2.25	56,250.00
2022-23	5.4	1,35,000.00
2023-24	9.6	2,40,000.00
2024-25	13.45	3,36,250.00
2025-26	15.60	3,90,000.00
Total	30.7	7,67,500.00

Miss. D Jyothi of village Mallam Palli, Ghantasala mandal, Krishna district in the same manner who was interested in mushroom production met KVK, Ghantasala scientists. Training was organised with a group of ladies who were interested in mushroom production under guidance of KVK,

Ghantasala. Initially she started milky mushroom production in year 2023. At present (2025-26), she is producing 10kg/day Button mushroom from 1200 sqf mushroom hut. The per year mushroom production is listed in the Table 4.

Table 4: Quantity of mushroom and its worth sold by another beneficiaries

Year	Produce sold (Q)	Mushroom worth (in Rs.)
2023-24	4.6	1,15,000
2024-25	6.4	1,60,000
2025-26	8.6	2,15,000
Total	19.6	4,90,000

She has also started value addition of Mushroom to overcome the problem of marketing. She established processing unit and successfully preparing mushroom product like, dry mushroom packaging, mushroom powder and other products and supply it to various nearby cities markets for consumption.

Conclusion

Training programmes and method demonstration are integral components of the KVK extension system. Krishi Vigyan Kendra plays an important role in motivating rural farmers and farm women to take up simple and quick income-generating enterprises through which they can earn additional income. The trainee respondents were highly inspired by the simple methods of mushroom cultivation. Mushrooms were also included in their daily diet, thereby improving their nutritional intake. After attending the training programme, the perception levels of the respondents regarding mushroom cultivation and its benefits improved considerably. The positive change in perception may be attributed to the educational background of the participants, their keen interest in learning, and the effective training methods adopted for technology transfer.

The training programme also provided an opportunity to strengthen the linkage between farmers and scientists, which facilitated effective technology dissemination and contributed to the overall development of the weaker sections of society. Further, it can be concluded that the regular supply of quality mushroom spawn remains one of the most important factors that needs to be ensured for the successful promotion and expansion of mushroom-based entrepreneurship and it is successfully achieved through trainings & demonstrations.

References

1. Chadha KL, Sharma SR. Mushroom research in India: history, infrastructure and achievements. In: Chadha KL, Sharma SR, editors. *Advances in horticulture*. New Delhi: Malhotra Publishing House; 1995. p. 1-29.
2. Kaur K. Impact of training course on knowledge gain of mushroom trainees. *J Krishi Vigyan*. 2016;4(2):54-57.
3. Manju Varma SK, Rani S. Impact assessment of mushroom production for rural women. *Raj J Ext Edu*. 2012;20:78-80.
4. Nagaraj R, Arun KP, Hanumanthswamy BC, Jyoti MR. Mushroom production for self-employment: an impact study. *Int J Curr Microbiol App Sci*. 2017;6(9):2991-2997.
5. Goel R, Sodhi GPS. Evaluation of vocational training programmes organized on mushroom farming by Krishi Vigyan Kendra Patiala. *J Krishi Vigyan*. 2013;2(1):26-29.
6. Rachna S, Goel R. Impact of mushroom cultivation on socio-economic conditions of rural women of Patiala,

Punjab. *Int J Farm Sci*. 2016;6(2):251-254.

7. Quimio JH, Chang ST, Royse DJ. Technical guidelines for mushroom growing in the tropics. Rome: FAO Plant Production and Protection; 1990. p. 1-106.
8. Vishwakarma N, Singh DK, Sharma A, Tomar A, Shukla R. Impact of skill development training on mushroom production in Madhya Pradesh district of Jabalpur. *Pharma Innov J*. 2023;12(6):734-736.
9. Yadav S, Mishra A. Vocational training in mushroom cultivation and its impact on rural income. *J Rural Dev*. 2020;36(3):120-134.