Impact assessment of vocational training programmes on mushroom cultivation on knowledge gain and adoption of the rural youth

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ABSTRACT

Mushroom cultivation is a novel component of agriculture that can be easily integrated in the farming system to enhance the income of the farmers or can even be taken up as an independent activity on commercial scale. The present study was aimed at investigating the change in economic status/profile of rural youth entrepreneurs after entering in mushroom cultivation. Total 120 trainees were imparted training on mushroom cultivation by conducting four vocational training courses at Krishi Vigyan Kendra, Kaithal, Haryana. The knowledge level of farm/rural youth was improved by attending training programmes on quality spawn production in village conditions, specific method of mushroom bag preparation, harvesting techniques, grading and packaging of mushrooms in small pouches, preservation techniques and value addition by preparing products from oyster mushroom.

Keywords: Mushroom cultivation; youth; vocational training; knowledge

INTRODUCTION

Empowerment of rural youth 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 especially the rural farming community (Rachna et al 2013). Nowadays 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 supplements contain some components responsible for improving our immune system produced by mushrooms and thus it plays a very significant and important role in human health, nutritional and medicinal formulations (Mshandete 2011).

Mushroom is not only a rich source for nutritious protein, it is also effectively used in the production of highly effective medicinal products (Chang and Wasser 2012, Wasser 2010, 2014). The world edible mushroom production per annum is 37 million tonnes. The production of mushrooms worldwide has been steadily increasing after world war II with major contribution from countries such as China, Netherlands, Poland, USA etc. China accounts for about 87 per cent of the total world mushroom production (Royse et al 2017). India produces only 0.13 million tonnes mushrooms of which 3/4th is button mushroom. Accordingly consumption/person/year of mushroom in India is <0.1 kg as compared to more than 20 kg in China (Anon 2019).

Dalmia and Kumar (2018) reported that the demand of mushrooms has been increasing day by day due to population growth, market expansion, changing of consumer education and awareness along with the developments in the manufacturing industries, storage facilities and transportation. It is important to maintain economic vibrancy and development by increasing and diversifying rural/farm youth in agri-business by creating newer kinds of employment opportunities. It is a well established fact that the rural unemployed individuals specially the farm men/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 programmes. Mushroom cultivation is environment-friendly as mushrooms biosynthesize their food from agricultural crop residues which are 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.

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

METHODOLOGY

Vocational training courses on mushroom cultivation are organised by the KVKs from time to time. Krishi Vigyan Kendra, Kaithal, Haryana scientists along with other concerned staff members were instrumental in imparting trainings to the farm men/ women and rural youth in the villages. For evaluating the impact of vocational training programmes, a questionnaire was prepared comprising general information and background of selected respondents of the villages such as age, education, occupation, landholding etc. A pre-evaluation test was conducted to know the knowledge level of participants regarding types, nutritive value, diseases, preparation of casing, harvesting techniques as well as storage and preservation etc of mushrooms. Similarly after the completion of the training courses, post-evaluation was performed in order to assess the knowledge gained by the trainees and effectiveness of trainings. To test the knowledge of trainees after completing the vocational trainings, a set of questions related to mushroom cultivation, processing etc were asked. Thus the gain in knowledge was calculated from the difference of scores obtained in pre- and post-knowledge tests of the trainees. Likewise the suggestions from the trainees were taken for bringing further improvement in the vocational training programmes. The data were analyzed using frequency, percentage and ranking.

RESULTS and DISCUSSION

Socio-economic profile

The participants differed in age, education, occupation and landholding. The data in Table 1 show that most of the participants (52.36%) were of the age of 26 to 40 years and 37.3 per cent were above 40 years of age. Majority (48.4%) of the farmers were landless farm labourers whereas few farmers (28.3%) were marginal having less than I hectare farming land. The respondents either belonged to backward class (60.0%) or scheduled caste (40.0%). Majority (45.0%) were having primary education followed by middle level (35.0%). For more than half of the respondents (53.3%), farming was the main occupation.

Kaur (2016) observed that mushroom farming enterprise did not require much land and therefore landless farmers were found to be interested to adopt this enterprise to supplement their family income.

Reasons of participation

The factors which motivated the respondents to join the training courses were given ranking in order of importance as perceived by them (Table 2). Majority (78.8%) of the respondents joined training courses to adopt mushroom growing as an enterprise followed by 32.3 per cent who joined just to get the certificate of the training, 18.3 per cent to learn about mushroom growing techniques for self consumption, 8.33 per cent just to know about mushroom cultivation, 6.6 per cent to learn techniques of mushroom spawn production at their home and only 3.3 per cent to teach other women farmers about mushroom cultivation. Kaur (2016) reported that 63.5 per cent respondents joined training course to adopt mushroom growing as an occupation, 12.9 per cent wanted to learn about mushroom growing techniques for self-consumption and 10.6 per cent joined the training course just to get the certificate of training. In a study by Mazumdar et al (2020) it was found that 76 per cent respondents joined training course to get scientific mushroom cultivation technology, 63.3 per cent wanted to adopt mushroom farming as an enterprise, 14.66 per cent joined the course to get participation certificates to get government schemes and loan for establishing own business, 20.67 per cent wanted to establish linkage with KVK for future help and only 8.67 per cent showed their interest for technology transfer. Similar results were also reported by Suharban et al (1991) and Shahi et al (2018).

Increase in knowledge level

In pre-evaluation test, the knowledge range of different participants was 3.5 per cent regarding preparation of mushroom spawn to 32.8 per cent in case of knowledge about the value addition to

Table 1. Socio-economic profile of selected trainees

Component	Respondents	
	Frequency	Percentage
Age (years)		
Up to 25	10	10.34
26-40	64	52.36
>40	46	37.3
Landholding (ha)		
Landless	56	48.4
Marginal (<1)	34	28.3
Big (>1)	30	23.3
Caste		
Scheduled caste	48	40.0
Backward class	72	60.0
Educational status		
Primary	54	45.0
Middle level	42	35.0
Matriculate	24	20.0
Occupation		
Farming	64	53.3
Vegetable selling	22	18.3
Housewife	34	28.3

Table 2. Reasons of participation in vocational training programmes on mushroom cultivation

Reason	Respondents	
	Number	Percentage
To adopt mushroom production as an enterprise	56	78.8
To learn about mushroom growing techniques for self-consumption	15	18.3
Just to know about mushroom cultivation	5	8.33
To get certificate of vocational training course	12	32.3
To teach other women farmers about mushroom cultivation	4	3.3
To learn techniques of mushroom spawn production at their homes	8	6.6

mushrooms. Post-training score of various practices ranged from 90.6 per cent for market price and profit from mushrooms to 100.0 per cent in case of various practices like type of mushrooms, presence of nutrients in mushrooms, diseases of mushrooms, storage and harvesting, value addition to mushrooms, identification of usable and non-usable mushrooms (Table 3). Thus there was a gain of 54.0 to 94.1 per cent in the knowledge of the respondents.

Mazumdar et al (2020) in their study found that the knowledge level of the participants was not satisfactory before training. In pre-evaluation test, the level of knowledge of respondents was 4.8 per cent regarding nutritive and medicinal value of mushrooms to 25.25 per cent in case of profitability in mushroom cultivation. The participants showed positive attitude towards mushroom farming after training. Post-training score of various operations ranged from 74.3 per cent in case of pest and disease infestation in mushrooms to 95.75 per cent regarding profitability in mushroom cultivation.

In their stduy Shahi et al (2018) observed that in the pre-test before training, the knowledge of respondents about mushroom spawn production was zero and 1.25 per cent regarding methods of compost making to 30.0 per cent in case of awareness of loans, schemes and subsidies provided by public or private institutions for establishment of mushroom production unit. Post-training score of various practices ranged from 56.50 per cent in case of mushroom spawn

Table 3. Gain in knowledge of the respondents after one week of vocational training

Component	Pre-evaluation knowledge (%)	Post-evaluation knowledge (%)	Gain in knowledge (%)
Variety and type of mushrooms	26.0	100.0	82.0
Nutritive value of mushrooms	24.0	100.0	88.0
Knowledge about diseases controlled by consumption of mushrooms	17.6	96.5	77.9
Knowledge about identification of good quality/edible types of mushrooms	28.3	98.0	54.0
Diseases of mushrooms and their control	5.9	100.0	94.1
Market price and profit from mushrooms	21.1	90.6	69.5
Method of compost/manure making	8.2	96.5	88.3
Preparation of mushroom spawn	3.5	94.1	90.6
Method of preparation of casing material	9.4	97.6	88.2
Storage and harvesting techniques of mushrooms	25.9	100.0	74.1
Value addition to mushrooms	32.8	100.0	69.6

production to 100 per cent in case of profitability in mushroom cultivation.

In the study conducted by Kaur (2016) it was found that in the pre-evaluation test, the knowledge range of different participants was 3.5 per cent regarding preparation of mushroom seed to 49.4 per cent in case of knowledge about identification of usable and non-usable mushrooms. Post-training score of various practices ranged from 90.5 per cent in case of cost and income from mushrooms to 100 per cent in case of various practices like variety of mushrooms, presence of nutrients in mushrooms, diseases of mushrooms, storage and harvesting, value addition to mushrooms, identification of usable and non-usable mushrooms.

It was thus concluded that pre-training knowledge score was not much satisfactory for all the aspects of training programmes. However the knowledge score gained by participants after trainings was more satisfactory in all aspects.

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 results of the present study reveal that the farmers had been undergoing training on mushroom cultivation for different reasons but they were able to increase their knowledge level in almost all aspects. This shows that the vocational trainings conducted by the KVK were quite effective in transferring the technology of mushroom cultivation to the target clientele.

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