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Impact study on mushroom cultivation for micro entrepreneurship development and women Empowerment

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Abstract
The present study was conducted to find out the impact of vocational training programme on mushroom production for Entrepreneurship Development at Krishi Vigyan Kendra, Hajipur and Muzaffarpur (Additional). A complete list of 400 respondents was randomly prepared who have under gone through training and demonstration on mushroom production technique from both districts from 2007 to 2018. It was observed that pre-training knowledge score was not much satisfactory for all the aspects of training programme. However, the knowledge score gained by respondents after training was more satisfactory in all aspects. The study revealed that exposure to training had increased the knowledge of farmers, farm women and youths regarding techniques mushroom production by 80.75%. The reason behind the satisfactory change in perception level might be due to well educational background, keen interest of participants and methods followed for technology transfer to the trainees.Some trainees adopted mushroom cultivation as self-employment and set up their own units. One of the trainees also set up spawn production unit for quality spawn and supply the spawn to other districts. The study revealed that the mushroom production training has created a favourable attitude among the trainees and also enhanced the economic level of beneficiaries who adopted it as a source of livelihood.

Keywords: Mushroom production, Entrepreneurship, Women Empowerment

Introduction
Cultivated mushrooms have now become popular all over the world. Mushroom cultivation can directly improve livelihoods through economic, nutritional and medicinal contributions. Mushroom is a popular food due to their special flavour, nutritive value and medicinal properties. Mushrooms are a good source of vitamin B, C and D, including niacin, riboflavin, thiamine, and folate, and various minerals including potassium, phosphorus, calcium, magnesium, iron and copper. They provide high quality fats andlow in carbohydrates and cholesterol, which is ideal for reducing body weight (Qumio *et al.*, 1990) [4].
Mushroom cultivation can help reduce vulnerability to poverty and strengthens livelihoods through the generation of a fast yielding and nutritious source of food and a reliable source of income (Rachna *et al.*, 2013) [5]. It is an indoor crop, grown independent without sunlight and do not require fertile land and can be grown on small scale as it does not include any significant capital investment (Chadda and Sharma, 1995) [1]. Mushroom cultivation will improve the socio-economic condition of farmers, families and solve employment problems of both literate and illiterate of rural areas and semi-urban, especially women. Mushroom cultivation is a women friendly profession. Mushroom growing is an agricultural activity in which women can utilize their spare time and play a vital role without sacrificing their household responsibilities. Promotion of mushroom cultivation could relieve pressure on land, increase food and nutritional security and uplift the status of women through earning additional income and in household decision making as far as concerned (Manju *et al.*, 2012) [3].
Mushroom substrate can be prepared from any clean agricultural waste material, and mushrooms can be produced in temporary clean shelters. They can be cultivated on a part-time basis, and require little maintenance. Mushroom cultivation activities can play an important role in supporting the local economy by contributing to subsistence food security, nutrition,

and medicine; generating additional employment and income through local, regional and national trade; and offering opportunities for processing enterprises such as pickling and drying.

Total production of mushroom in Bihar is more than 2000 tonnes and it is increasing at very fast rate. Oyster as well as Button mushroom offers good potential for its cultivation in Bihar because of its sub-tropical nature. The Front-Line Demonstration and training conducted by Krishi Vigyan Kendra, Hajipur and Muzaffarpur (Additional) plays an important role in popularized the production of mushroom in Vaishali and Muzaffarpur district. The trained people after getting proper know how and skill started its production. Apart from the trained trainees, a lot of other farmers and farm women started its cultivation by seeing their neighbour and fellow farmer nearby villages. But methods of mushroom cultivation of these two groups differ a lot and the difference were mainly due to proper training from KVK taken before mushroom cultivation was started.

Keeping in view the increasing demand of mushroom due to globalization and opening of the economy, the present study was undertaken with the specific objective to assess the impact of training and demonstration on mushroom production as an enterprise/self-employment.

Methodology

A complete list of 400 respondents was randomly prepared who have under gone through training and demonstration on mushroom production technique from both districts from 2007 to 2018. A questionnaire was framed covering background information. In order to assess the knowledge gained by the trainees and effectiveness of training, apre-test before training and post evaluation after training was conducted to know the level of knowledge of participants about species, pest and disease infestation in mushrooms as well as their storage process and value addition etc. To test the knowledge of trainees, a set of 10 questions related to mushroom production, nutritive value, value added products prepared from mushroom, its picking and storage method etc. were prepared and the suggestions from the trainees were also recorded for further improvement in the next training programme. Change in perception level was calculated from the difference of scores obtained in pre and post knowledge test of the trainees. The data were tabulated and statistically analyzed using frequency, percentages and ranking.

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

Results & 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. Krishi Vigyan Kendra, Vaishali and Muzaffarpur (Additional) has been giving 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 both district has adopted in big way both 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 which motivated the respondents to join the training course were given for ranking in order of importance as perceived by them. Table 1 shown that69.50 %respondents joined training course to adopt mushroom production as an enterprise, 75.25% wanted to learn about production technology of mushroom for nutritional security and additional source of income, cent per cent farmers wanted to know how to grow different variety of mushroom, 13.5 per cent joined the training course just toget the certificate of training to get loan from bank to start their enterprises and 18.75 per cent wanted to establish linkage with KVK for further up gradation of knowledge. Lesser participants showed their interest to transfer the skill to fellow farmers about mushroom production. Similar results were also reported byKaur, 2016. It was evident that majority of respondents joined the training course to learn about production technology of different variety of mushroom followed by household nutrition and additional source of income.

Table 1: Reasons of participation in training programme in mushroom cultivation.

S. No.	Reasons	Number	Percentage
1.	To adopt mushroom production as an enterprise	278	69.50
2.	To learn about production technology of mushroom for nutrition and additional source of income	301	75.25
3.	How to grow different variety of mushroom	400	100.0
4.	To get certificate of training course for loan from bank	53	13.25
5.	To establish linkage with KVK	75	18.75
6.	Transfer the skill to fellow farmers about mushroom production	33	8.25

Change in perception level of respondents (N=400)

Change in perception level of respondents before and after training was shown in Table 2. They develop a favourable attitude towards mushroom production after training. In 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 percent in case of awareness of loans, schemes and subsides provided by public or private institutions for establishment of mushroom production unit as revealed by Table 2. Post training score of various practices ranged from 56.50 per cent in case of mushroom spawn production to 100 per cent in case of profitability in mushroom cultivation. It was thus noticed that pre-training knowledge score was not much satisfactory for all the aspects of training programme. However, the knowledge score gained by respondents after training was more satisfactory in all aspects. The reason behind the satisfactory change in perception level might be due to well educational background, keen interest of participants and methods followed for technology transfer to the trainees.

Table 2: Change in perception level of respondents for mushroom production (N=400)

S. No.	Particulars	Pre-test Knowledge before training (%)	Post-test Knowledge after training (%)	Change in perception level (%)
1.	Knowledge of Species of Mushroom and Identification of edible mushroom	8.75	92.50	83.75
2.	Nutritive and medicinal value of mushroom	5.75	82.25	76.50
3.	Materials and Techniques used for different types of mushroom production	4.00	84.75	80.75
4.	Methods of compost making	1.25	63.25	62.00
5.	Pest and disease infestation in mushroom	5.00	78.75	73.75
6.	Profitability in mushroom cultivation	20.75	100.00	79.25
7.	Harvesting and storage process	9.50	87.25	77.75
8.	Mushroom spawn production	0.00	56.50	56.50
9.	Value added products of mushroom	11.75	88.00	76.25
10.	Awareness of loans, schemes and subsides provided by public or private institutions for establishment of mushroom production unit	30.00	96.50	66.50

Entrepreneur developed by farmer/ farm women

As per the randomly selected ex-trainees for study, out of 400 samples, one of the women namely Rekha Devi of village Paura Madan Singh has started commercial production of both *Oyster* and Button mushroom. She sold a total of 54.80 qt. mushroom in the local market as depicted in Table 3. In the year 2011-12, She formed SHG namely 'Adarsh Mahila Mushroom Utpadan Samuh' consisting of 30 rural women in the guidance of KVK and registered by ATMA, Vaishali. She was recognized by RPCAU, Pusa for her work and awarded "Abhinav Kisan Puraskar in the year 2015." The production and financial benefit she got has been presented in the Table3.

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

Year	Produce sold (qt.)	Mushroom worth (in Rs.)
2012-13	8.50	68,000
2013-14	11.00	88,000
2014-15	10.30	80,240
2015-16	25.00	2,02,000

Another lady Manorma Devi of village- Agarpur, Block-Lalganj in the same manner who was interested in mushroom production came in contact with KVK, Vaishali. Training was organised with a group of ladies who were interested in mushroom production under guidance of KVK, Vaishali. Initially she started *Oyster* mushroom production in year 2009. Now she is producing 125kg/day Button and *Oyster* mushroom from 1200 sq ft 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 (qt.)	Spawn sold (qt.)	Mushroom worth (in Rs.)	Spawn worth(Rs.)
2012-13	05	-	40,000	-
2013-14	20	-	1,60,000	-
2014-15	25	-	1,95,000	-
2015-16	25	1.5	2,50,000	1,50,000
2016-17	30	3.5	3,00,000	3,50,000
2017-18	35	4.8	3,50,000	4,80,000

She has also started value addition of Mushroom to overcome the problem of marketing. She established processing unit and successfully preparing mushroom product like badi, pickle, papad, dry mushroom packaging, mushroom powder and other products and supply it to various nearby cities markets for consumption. After the successful production of Button mushroom she was referred by KVK to Mushroom Production Unit of DRPCAU, Pusa for her inspiration in spawn production. She started her own spawn unit in 2015 due to unavailability of quality spawn. She is supplying quality spawn to the mushroom growers in Vaishali district and nearby area as per need. She has started to supplying the quality spawn in the nearby districts too in the state of Bihar *viz*., Kishanganj, Purnea, East and West Champaran, Supaul, Nawada etc.to both government and private undertaking and also to the NGOs. She has been recognised at various levels at national and state agencies for her work. She received "Mahindra Samridhi Award" in 2011-12 and nominated as icon for Vaishali district during election by Election Commission of India. RPCAU, Pusa recognised her work and awarded "Abhinav Kisan Puraskar in 2014."

Likewise, in the district of Muzaffarpur under the KVK Muzaffarpur (Additional) jurisdiction after the successful completion of training and FLD to 80 farmers and farm women, five farmers have started their own *Oyster* mushroom production unit with 35 bags each and produced about 80-87.50 kg per unit and earn additional income of Rs 5000-6000 after their household consumption for nutritional security. Apart from theseex-trainees, a lot of other farmers and farm women started its cultivation by seeing their performance.

This study also analyses the change in livelihood pattern of rural women engaged in mushroom cultivation and spawn production activities. The beneficiaries were mostly from backward communities and hence were socially and economically deprived doing hard manual work as the agricultural labourers to support their family financially. Results revealed that after generating income through mushroom production they were expending more on food,

health, education and saving and less on agriculture.

Conclusion

Training and demonstration are integral part of KVK extension system. Krishi Vigyan Kendra playing an important role in encouraging rural farmers and farm women to take up simple and quick income generating enterprises from where they can earn additional income. The trainee respondents were inspired greatly by the easy method of mushroom production. The mushrooms were included in their daily diet and supplemented additional nutrition to them. The perception levels of the respondents about mushroom and its production after the training have changed.The reason behind the satisfactory change in perception level is due to well educational background, keen interest of participants and methods followed for technology transfer to the trainees. It also provided an opportunity to strengthen the link between farmers and scientists which helped in technology dissemination and overall development of weaker section. The regular supply of quality spawn is the single most important intervention that needs to be addressed for mushroom entrepreneurship to flourish.

References

1. Chadha KL, Sharma SR. Mushroom research in India-History, infrastructure and achievements. Ins: Advances in Horticulture, (Eds. Chadha, K.L. and Sharma, S.R). Malhotra Publishing House, New Delhi. 1995; 13: l-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. Qumio JH, Chang ST, Royse DJ. Technical guidlines for mushroom growing in the tropics. FAO Plant Production and Protection, 1990,106. Rome Italy M-11 ISBN 92-5-103026-X.
5. Rachna 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.

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