The Pharma Innovation Journal 2018; 7(4): 856-858

www.ThePharmaJournal.com

The Pharma Innovation

ISSN (E): 2277- 7695
ISSN (P): 2349-8242
NAAS Rating: 5.03
TPI 2018; 7(4): 856-858

www.thepharmajournal.com
Received: 18-02-2018
Accepted: 19-03-2018

Rashmi Shukla
Jawaharlal Nehru Krishi Vishwa Vidyalaya, Jabalpur, Madhya Pradesh, India

Akshta Tomar
Jawaharlal Nehru Krishi Vishwa Vidyalaya, Jabalpur, Madhya Pradesh, India

Correspondence
Rashmi Shukla
Jawaharlal Nehru Krishi Vishwa Vidyalaya, Jabalpur, Madhya Pradesh, India

Oyster mushroom cultivation: As alternative source of income a profitable enterprise

Rashmi Shukla and Akshta Tomar

Abstract
In view of pleasing flavour, adequate protein content and health values, mushrooms unquestionably represent one of the world's greatest relatively untapped source of nutritious and palatable food. In spite of problems that exist in the cultivation of mushrooms, there is definitely a possibility of using mushrooms in a more important role as a source of protein to enrich human diets and it has also meditational value, in these regions where the shortage of protein is most marked. More than 50 varieties of mushroom are consumed in India but only three, namely, button mushroom (*Agaricus biosporus*), Oyster mushroom (*Pleurotus* spp.) and paddy straw mushroom are commercially cultivated. Among these, oyster mushroom is very easy to cultivate at low cost. Species of *Pleurotus* are characterized by rapid growth under wide range of temperature, ability to colonise substrate in short duration and potential to tolerant higher concentration of CO_2 which act as protein cover against competitor moulds. Cultivation of Oyster mushroom represent one of the major current economically profitable biotechnical process for the conversion of waste plant residues into a protein rich food which will help in overcoming protein malnutrition problem in developing countries like India. Nearly 60 kg mushroom is produced in 100 kg of straw. Some disease like dry bubble, wet bubble, green mould, false truffle etc are serious but can be controlled easily. The present paper discribe the scope of its technology for production of *Pleurotus* species.

Keywords: Mushroom spawn, wheat straw, plastic tub, formalin

Introduction
Villages selected for study belong to the block Surajgwon, Khamtara and Dhamna of Narsinghpur district. It is situated 3 km away from kvk and their was population. The main occupation of the villages is farming, however younger and some school dropout groups have no option for employment. However they have the education level at least upto middle class. The farmers parents of these youth produce mainly wheat crop, hence it create abidancasy availability of wheat straw.
Therefore the Krishi Vigyan Kendra Narsinghpur introduced a number of trainings programmes and conducted demonstrations on mushroom cultivation for womens/ rural youths/ some school dropouts groups to increase their source of income. We give technical knowledge on how to grow mushroom and for their effective marketing, so that they develop their own business for their livelihood.

Methodology
The KVK organized training programmes in Surajgwon, Khamtara and Dhamna villages continuously during 2009 to 2012, for creative awareness the farmers, rural youth and unemployed persons to make them technical sound in cultivation process of mushroom. Apart from this literature, pamphlets, booklets for production and processing of mushroom was provided to each trainee. They were made aware about the cultivation techniques as well as the processing and marketing of mushroom.

Result and discussion
A total of 180 diverse, villages of Surajgwon, Khamtara and Dhamna block of Narsinghpur district participated in the programme.

About the trainees
Age: Data presented in table revealed that out of total mushroom cultivation trainees 40.56 % belonged to young age where as 25 % trainees in middle age and 34.44 % trainees belonged to old age.

Table 1: Distribution of mushroom cultivation trainees according to Age group

S. No.	Age group	No. of trainees	Percentage
1	Young age group	73	40.56
2	Middle age group	45	25
3	Old age group	62	34.44
	Total	180	100.00

Table 2: Education Disribution of mushroom cultivation training according to their education

S. No.	Education level	No. of trainees	Percentage
1	Literate	21	11.67
2	Primary level	34	18.89
3	Middle school	27	15.00
4	High school	35	19.44
5	Higher secondary	43	23.89
6	Graduation	20	11.11
	Total	180	100.00

The above table revealed that out of the total mushroom trainees 23.89, 19.44, 18.89, 15.00 and 11.67 passed higher secondary, high school, primary, middle respectively and only 11.11% were educated up to graduation level.

Table 3: Occupation: Disribution of mushroom cultivation training according to their occupation

S. No.	Category	No. of trainees	Percentage
1	Agriculture	102	56.67
2	Agriculture+Agriculture	19	10.55
3	Agriculture+ Caste occupation	11	6.11
4	Agriculture+Service	48	26.67
	Total	180	100.00

Table revealed that out of the total trainees majority 56.67%, trainees were having agriculture and service, 10.55% having agriculture and were doing work as agriculture labour, while only 6.11% trainees were engaged in agriculture as well as in the cast occupation.

The cultivation of mushroom consisted of following steps

- Collection of material like- wheat straw, polythein bags, spawn, plastic tub, plastic sheet, rope, water, farmaline, bavistin, sprayer etc.
- These material were arranged accordingly and put in a desired form of bags and having with the rope polythein in a ventilated hut room

Flow chart of mushroom cultivation

Wheat straw

↓

Soaking in clean cold water for 12-16 hrs

↓

Draining excess water

↓

Pasteurization of the straw pieces in boiled water at temp. 70-800 C for 45 minutes to 1hr.

↓

Draining of excess water & dry in shade to get 65% moisture.

Laying of bed & spawning

Filling in the polythene bag (65cm X 35cm) with sterilized straw bits (6" ht)

↓

Sprinkling of ¼ part of spawn over it at the periphery only.

↓

Again covering with sterilized straw pieces to another 6" ht. Repeat spreading of straw pieces and spawn for 4th time.

↓

Covering the top layer with thin layer of straw & tie the polythene bag at the top & making 20 to 25 holes for exchange of gas & keeping it in dark room.

Spawn is running

Removing the polythene cover after 16th day.
Arranging the beds on the sika, leaving a space of 6" between the bed.
Sprinkling of water twice a day as per the weather to keep the bed moist.
Orissa Review* My-June - 2010

Harvesting of mushroom

Harvesting fresh mushrooms after 7 days by twisting carefully when the edges starts upward curling.

↓

1st flush - 1 kg
7 days after 2nd flush - 250 gm.

After attending training on mushroom cultivation some of them started their own business at their home without heavy investment, and limited area. They are earning approximate 4000 to 5000/- per month, which is higher then their previous occupation profit.

Inspired by the easy method of cultivation, good yield and economy of production and being exposed to extension interventions made by KVK, some farmers have started practicing oyster mushroom. Cultivation in small scale under the guidance of scientists of KVK. 20-25 kg dry wheat straw blocks yielded 40 to 50 kg fresh mushroom, which can be sold in market at the rate of Rs 120/- per kg against Rs 820/- cost of input. Oyester mushroom can be easily dried in the day sunlight in white cotton cloth and make powder when not sold in the market, this dry mushroom reduces 10 times as compared to fresh mushroom (Jandaik and Goyal 1995) [3]. Kokate *et al.* (2010) [4] clearly indicated that there have been increased in its cost of production yet with increase in price received the profitability have been maintained. It was seen that when mushroom directly sold to consumer, obtained more unit price in comparison to sold through commission agent/ other agencies.

Table 5: Total processing cost of mushroom cultivation

Details	No. of trials	Yield per Unit	Cost of Input (Rs/unit)	Incremental Income (Rs/unit)	Net return (Rs/unit)	Savings in Rs.	B: C Ratio
(Farmers Practice) T1	05	-	-	-	-	-	1:7.31
(Recommended practice) T2		2 Kg/bag (total 25 bags)	Rs. 820	Rs. 6000	Rs. 5180		

Table 6: Impact of training on the dissemination of mushroom production technology

Year	No of trainees (basis of land holding)			No of course	Duration (days)	No of Beneficiaris	No of Adoptin	Adoption%
	Marginal	Small	Large					
2009	6	17	12	01	10	30	09	21.95
2010	15	19	7	01	07	30	11	26.82
2011	15	26	4	02	07	60	O8	17.77
2012	8	28	3	02	10	60	13.5	33.46
Total	44	90	46	04	34	180		100

Year	Horizontal spread of mushroom production technology		
	Marginal	Small	Large
2009	-	-	-
2010	17	51	3
2011	44	68	11
2012	82	79	6
Total	143	198	20

The villages were surprised with the success of mushroom cultivation. They could not just believe such a good amount of net profit in less than a month period. Now they are interested to take up mushroom cultivation as a major income generating activity throughout the year due to its increasing demand in this area.

KVK Narsinghpur provided all the technical guidance timely and motivated them to participate in district/state level exbhitions. The impact of the training can be assessed from the fact that 40-50% of the trainees in his village adopted this venture after seeing his success.

Conclusion

KVK, Narsinghpur has documented the success and has developed plan to further promote this technology. Apart from this KVK printed, literature broadcasted TV coverage of the technology this has been organized for wider dissemination of technology.

References

1. Arun, Anitha. Studies on the cultivation and biochemical efficiency of mushrooms grown on different agro-residues. Innovative Romanian Food Biotechnol. 2010; 6:25-28.
2. Pereira E, Barros L, Martins A, Ferreira ICFR. Towards chemical and nutritional inventory of Portuguese wild edible mushroom in different habitats, Food Chemistry. 2012; 130(2):394,395,
3. Jandaik GL, Goyal SP. Farm and farming of oyster mushroom, 1995, 72-78.
4. Kokate KD, Anil Rathi, Narula AM, Keshav. Mushroom Farming. 2010, 01-35.
5. Mishra KK. Major constraints in adoption of mushroom farming. Farmer digest March 2010, 29-30.
6. Singh RP. Status and prospects of mushroom cultivation in India. In book mushroom production technology, 1995, 01-09