

Original Research Article

Impact of Oyster Mushroom (*Pleurotus ostreatus*) Training on Socio-Economic and Knowledge of Tribal Woman of Hazaribag, Jharkhand, India

Praveen Kumar^{1*}, Shruti Bharty², R.K. Singh¹, Kirshna Kumar³ and Nidhika Rani⁴

¹Holy Cross KVK, Hazaribag, Jharkhand, 825301, India

²Central IPM Centre, Bhubaneswar, Odisha, 751003, India

⁴Department of Plant Pathology, BAU, Ranchi, Jharkhand, 834006, India

³Defence Institute of High Altitude Research (DIHAR), DRDO, Leh-Ladakh -194101, India

*Corresponding author

ABSTRACT

Keywords

Mushroom, Oyster mushroom, *Pleurotus ostreatus*, Tribal women

The study was conducted in four tribal villages of Hazaribag district of Jharkhand state during 2016-17 for the assessment of impact of oyster mushroom training on Socio-Economic and Knowledge of Tribal Woman of Hazaribag. The results suggested that there was significant differences in the knowledge acquired on oyster mushroom, between trained tribal women and non-trained tribal women and it also shows that adoption of mushroom growing as an occupation was ranked 1st with 76% followed by increase in knowledge about mushroom ranked 2nd with 53% thereafter, better saving from mushroom production and improvement in social status were ranked 3rd and 4th with 42% and 32%, respectively. It can be concluded that a good training programme provides needful information and guidance to tribal women regarding initialization and advancement of oyster mushroom as an enterprise.

Introduction

Mushrooms are fungi, though they have been clubbed with vegetables. They have been used as food since the times of the caveman when they were collected from the wild. Today, there are thousands of varieties of them, in various colors, flavors, and different varieties (i.e *Amanita caesarea*, *Agaricus arvensis*, *Cyttaria spinosae* etc.) (Tolera and Abera, 2017). Among all the cultivated mushroom, Oyster mushroom (*Pleurotus sp.*) has maximum number of cultivated species and one of the most popular edible mushroom. These are belongs to Class Basidiomycetes and Family Agaricaceae (Carla et al., 2013). It is popularly known as 'dhingri' in India.

Mushroom has been cultivated and used as nutritious food since ancient times for their nutritional value and flavour, which is low in calories and rich in carbohydrates, essential amino acids, fiber, important vitamins and minerals (Kenei et al., 2014).

Mushroom has low fat content, high fiber, essential amino acids and also contains essential minerals and many bioactive compounds. The basic components in this mushroom includes: polysaccharides, lipopolysaccharides, proteins, peptides, glycoproteins, nucleosides, triterpenoids, lectins, lipids (Tolera and Abera, 2017).

The major elements, like K, P, Na, Ca, Mg and in case of minor elements Cu, Zn, Fe, Mo, Cd are present in mushroom (Bano and Rajarathanum, 1982; Bano *et al.*, 1981; Chang, 1982). Vitamine B is present as a main vitamin constituent and poor in vitamin A, D, and E (Breene, 1990; Anderson and Fellers, 1942). The protein content is less than animals but much more than in most plants. Mushroom production is relatively low in comparison to other crops and investment in the mushroom industry is not very large. Due to the adaptation of mushroom production, health of their child also become well in comparison to previous days because they understood growing mushroom is profitable venture and widely accepted by the people as a good venture for their income, employment generation and in aspects of health.

Mushroom has several therapeutic properties including anti-cancer, antagonistic properties against HIV-1 and numerous other diseases (Beelman *et al.*, 2003). It is very Eco-friendly, capable of converting the lignocellulosic waste materials into food, feed and fertilizers (Hadar *et al.*, 1992; Jaradat, 2010). It plays a significant role to alleviate poverty and generate employment opportunity for the farmers (Rachna *et al.*, 2013), by this way they can profitable and increase their revenue. In this context, the above facts a field experiment was conducted for assessment of impact of oyster mushroom training on Socio-Economic and Knowledge of Tribal Woman of Hazaribag, Jharkhand, India.

Materials and Methods

This study was conducted in four tribal villages of Hazaribag district of Jharkhand state during 2016-17. Geographically selected villages (Kandagardha, Kendu,

Bisai & Muki) is situated at 24°620' North latitude and 85°39'924' East longitudes.

Total 80 tribal rural women were selected from identified villages for assessment of impact of oyster mushroom training by the set of 20 questions related to occupation, knowledge of mushroom, better saving etc were used. Pre test was conducted to know the level of knowledge of participants regarding variety, diseases of mushrooms as well as their storage and preservation etc. Similarly, after completion of training course, post- evaluation was performed in order to assess the knowledge gained by the trainees an effectiveness of training.

Results and Discussion

The training courses were given for ranking in order of importance as perceived by tribal women (trainees). As shown in the (Table-1) 76 % respondents joined training to adopt mushroom growing as an occupation. Majority of tribal women were within the age group of 25-40 years (55%) and most of them were ST (100%). More than half of trainees belonged to farming background (66%) and only 9% belonged to service class (Table-2).

Assessment of the trainees with respect to education indicated that 56% illiterate followed by primary 21%, middle 13% and higher secondary 10%. It was also inferred (Table-2) that 80 % trainees were under marginal category followed by 20 % landless category. Many studies have been made on socio-economic variables influencing the adoption decision. Post-evaluation scores of gain in knowledge of various practice ranged from 42.2 to 96.0 percent (Table-3). Similar results was also reported by (Suharban *et al.*, 1991) and (Kaur, 2016).

Table.1 Reasons of participation in training programme

Sl. No.	Reason	Frequency	Percentage	Rank
1.	Adoption of mushroom growing as an occupation	61	76	I
2.	Knowledge of mushroom	42	53	II
3.	Learn how to grow mushroom for better saving	34	42	III
4.	Improvement in social status	26	32	IV
5.	Input materials arrangement	24	30	V
6.	Know about mushroom production	18	22	VI

Table.2 Socio-economic status of tribal women (trainees)

qw	Particulars	Frequency	Percentage
1.	Age		
	Up to 25 yrs	20	25
	25-40 yrs	44	55
	Above 40 yrs	16	20
2.	Caste		
	Scheduled caste	80	100
	Backward caste	0	0
	Others	0	0
3.	Education		
	Illiterate	45	56
	Primary	17	21
	Middle level	10	13
	Matriculate	8	10
4.	Occupation		
	Farming	53	66
	Service	7	9
	Others	20	25
5.	Landholding		
	Landless	16	20
	Marginal (<1 ha)	64	80
	Small (1-2 ha)	0	0
	Large (>10 ha)	0	0

Table.3 Gain in knowledge after acquiring training with respect to different operation

Sl. No.	Particulars	Pre-evaluation (%)	Post-evaluation (%)	Improvement in Knowledge
1.	Different types of mushroom	15	100	85
2.	Nutrients present in mushroom	4	100	96
3.	Availability of spawn	2.5	90.7	88.2
4.	Methods of substrate making	0	75.2	75.2
5.	Amount of chemicals used	0	64.7	64.7
6.	Moisture content in substrate	7.6	81.3	73.7
7.	Spawn required for each bag	0	56.4	56.4
8.	Methods of spawning	12	85.5	73.5
9.	No. of holes / bag	0	92.8	92.8
10.	Sterilization of production unit	0	45.7	45.7
11.	No. of days required for mycelial growth	8.5	79.4	70.9
12.	No. of days required for pin head initiation	0	42.2	42.2
13.	No. of days for harvesting	8.5	92.3	83.8
14.	Harvesting method	17.4	100	82.6
15.	Storage of mushroom	0	72.0	72.0
16.	Diseases of mushroom and its management	5.8	60.6	54.8
17.	Benefits of Mushroom	10.7	95.2	84.5
18.	Knowledge about identification of edible and poisonous mushroom	47.9	85.4	37.5
19.	Income generation from mushroom	9.7	100	90.3
20.	Value addition of Mushroom	8.9	60.5	51.6

Fig.1 Reasons of participation in training programme (Table-1)

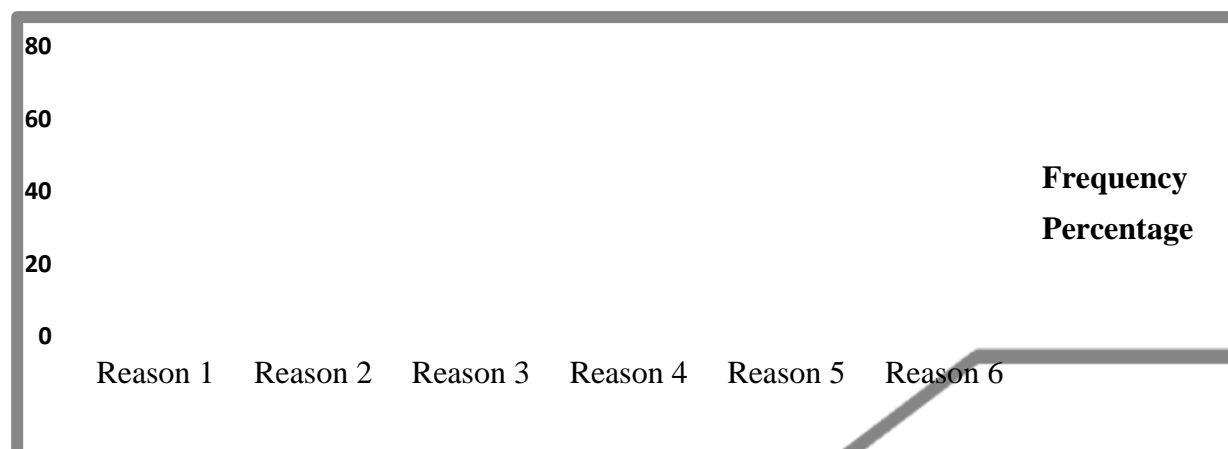
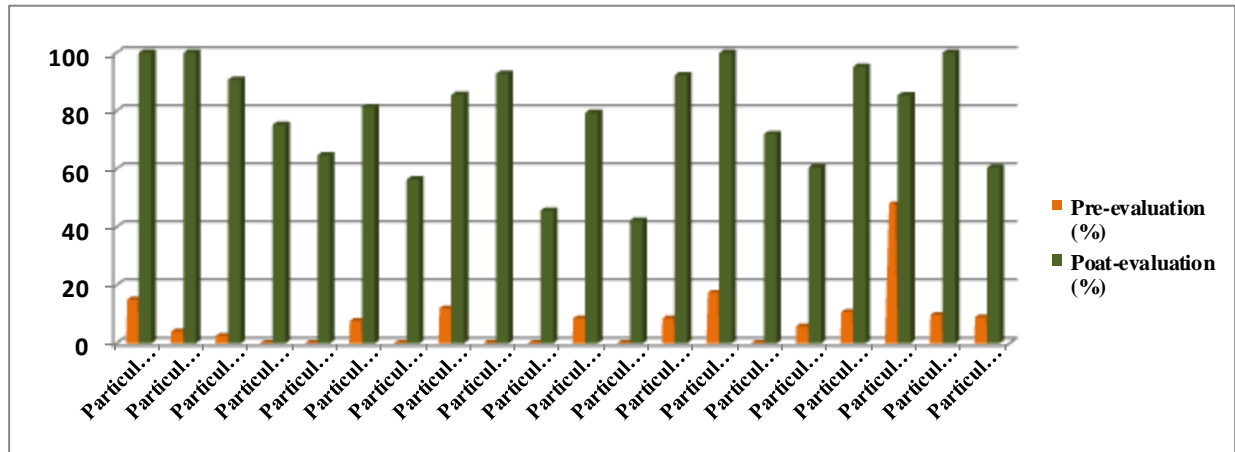


Fig.2 Gain in knowledge after acquiring training with respect to different operation



In conclusion, we have trained four tribal villages (i.e. Kandagardha, Kendu, Bisai & Muki) of Hazaribag district of Jharkhand state during 2016-17. We observed that upon the completion of oyster mushroom (*Pleurotus Ostreatus*) training tribal peoples are feel more confidants, May government and NGO come forward to provide small amount of loan for forming of oyster mushroom, even though it is not requires sophisticated equipment for oyster mushroom cultivation in spite of can able to cultivate cheap and easy way on small land. Hence, we strongly believe that may improve the tribal women income through mushroom cultivation and up lift socio-economic status in society of Hazaribag, Jharkhand, India.

Acknowledgement

Authors highly thankful to Holy Cross Krishi Vigyan Kendra, Hazaribag Jharkhand, India for providing financial support to conducting this study is duly acknowledged. I extend my sincere thanks to Sister Josline, Directeress; Sister Sajeeta, Deputy Directeress and Head of KVK for given a valuable guidance during this research work.

References

Asefa Keneni and Geda Kebede (2014). Cultivation of oyster mushroom (*pleurotus ostreatus*) on waste paper with supplement of wheat bran. *Global J Res. Med. Plants & Indigen. Med.* **3**(10): 370–380.

Beelman, R.D., Royse, D., Chikthimmah, N. (2003). Bioactive components in *Agaricus bisporus* Imbach of nutritiona, medicinal or biological importance. *Int. J. Med Mushrooms.* **5**: 321-337.

Caral Dinesh R, Vinay P, Manasa P, Vinothkumar D and Ramesh Babu N G (2013). Comparative study of oyster mushroom (*Pleurotus ostreatus*) cultivation by physical and chemical method of sterilization using two different substrates. *International Journal of Scientific & Engineering Research*, Volume 4 (9): 898.

Goel, R. R. and Sodhi G.P.S (2013). Evaluation of vocational traning programmes organized on mushroom farming by Krishi Vigyan Kendra Patiala. *J.Krishi Vigyan* **2**(1):26-29.

Hadar, Y., Keren, Z., Gorodecki, B., Ardon, O. (1992). Utilization of lignocellulosic waste by the edible mushroom *Pleurotu. Biodegradation.* **3**: 189-205.

- Jaradat, A.A (2010). Genetic resources of energy crops:biological systems to combat climate change. *Aust. J. Crop Sci.* 4: 309-323.
- Kaur, K. (2016). Impact of training Course on Knowledge Gain of Mushroom Trainees. *J. Krishi Vigyan* 4(2): 54-57.
- Kumela D.Tolera and Solomon Abera(2017).Nutritional quality of Oyster Mushroom (*Pleurotus Ostreatus*) as affected by osmotic pretreatments and drying methods.*food Sci.and Nutrition.* 5(5): 989–996
- Suharban, K., Rahman, O. and Nair M.C. (1991). An evaluation of mushroom cultivation course. *Indian J. of Ext. Edu.* 27(3-4): 118-121.