

Evaluation of mushroom farming among rural masses

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ABSTRACT

Mushroom is a multipurpose farm produce in terms of nutrition and its cultivation as a subsidiary occupation. Button mushroom is the most preferred type of mushroom. Study was conducted on ninety respondents who consumed mushrooms from two villages (Satiwala and Bazidpur) of Ferozepur (thirty respondents each) and trainees who came to Krishi Vigyan Kendra for home science and mushroom cultivation trainings (thirty respondents). The sample consisted of rural farmers and farm women/girls. The data were collected during survey at the villages and during trainings through pre-structured questionnaire to evaluate the nutritional awareness of the consumption of mushrooms and knowledge regarding mushroom cultivation. It was found that all the respondents preferred the taste of button mushroom followed by 7.78 per cent who preferred Dhingri. Forty per cent of the respondents were aware of mushroom cultivation and they cultivated mushrooms at home themselves. Most of the respondents (60%) procured mushrooms from local market as they were not aware of mushroom cultivation. The average yield of mushroom of the respondents who cultivated it at household level was between 4.3 to 5.6 kg/kg spawn/person and those who cultivated at small scale was between 5.6 to 6.0 kg/kg spawn/person.

Key words: Mushroom; button mushroom; cultivation; farmers; awareness

INTRODUCTION

Mushroom farming is such component of farming system that not only imparts diversification but also helps in addressing the problems of quality food, health and environment related issues (Atkin 1972). Its major role is in the conservation of natural resources as well as increasing the recycling of agro-wastes including agro-industrial waste. Mushroom farming today is being practiced in more than 100 countries and its production is increasing at an annual

rate of 6-7 per cent (Kumar et al 2013). It is considered to be a complete health food and suitable for all age groups. Mushrooms are rich in protein, dietary fiber, vitamins and minerals which comprise about 80-90 per cent water and 8-10 per cent fiber (Chang and Miles 2004). Mushroom is an excellent source of vitamins especially C and B (folic acid, thiamine, riboflavin and niacin). It also contains other essential minerals (Cu, Zn and Mg) in traces but is deficient in iron and calcium.

The concentrated areas of production in India are the temperate regions for the button mushroom, tropical and sub-tropical regions for oyster, milky, paddy straw and other tropical mushrooms (Kaul and Dhar 2007).

Button mushroom is the most commonly cultivated mushroom. It has weak flavour, nice texture and its colour is white, off white, cream and brown. It is marketed as fresh, brined and canned. It is most accepted mushroom and relatively easy to market. It is grown in winter. The most suitable temperature for the spread of the mycelium is 24-25°C while 16-18°C is essential for the formation of fruit bodies. Higher temperature is harmful and low temperature retards the development of both mushroom mycelium and fruit bodies.

Oyster mushroom (Dhingri) grows best between 22-28°C. It is grown in northern plains from October to March. Its temperature range is very broad. For each climate a suitable species and strain can be found. There are considerable variations in its taste and appearance. Most of the species with the beautiful colours break easily and require careful handling and packing. Marketing potential of dried oyster mushrooms is still limited though the taste becomes stronger after drying. Only *Pleurotus cystidiosus* (identical to *P. abalonus*) is suited for canning. The other species lose texture and flavour when dried. Even with in the same species considerable

variations in temperature, light and CO₂ sensitivity, yield and taste are possible.

Paddy straw mushroom is also known as warm mushroom as it grows at relatively high temperature. It is a fast growing mushroom and under favorable growing conditions total crop cycle is completed within 4-5 weeks time. It can be grown quite quickly and easily on non-composted substrates such as paddy straw and cotton waste or other cellulosic organic waste materials.

Mushroom is a nutritious food but awareness regarding its consumption, preparation and cultivation is less. So to know the status of mushroom farming, present study was conducted with the objective to evaluate the nutritional awareness of the consumption of mushrooms and knowledge regarding its cultivation.

METHODOLOGY

A total sample of ninety respondents was selected purposively who consumed mushrooms from two villages of Ferozepur (thirty respondents each) and trainees who came to KVK for home science and mushroom cultivation trainings (thirty respondents). The sample consisted of rural farmers and farm women/girls. The data were collected during survey at villages Satiewala and Bazidpur and during trainings through pre-structured questionnaire. The

gathered data were processed, tabulated, classified and analyzed in terms of percentage.

RESULTS and DISCUSSION

The data in Table 1 show that majority (52.22%) of the respondents were from the age group of 30-40 years followed by 20-30 years (21.11%), 40-50 years (16.67%) and the age of the rest was more than fifty years. Around half (52.22%) of the respondents were from general category and 47.78 per cent of the respondents belonged to scheduled caste category. Most (43.33%) of the respondents were illiterate followed by those who were matric pass (30%), senior secondary (18.89%) and only 7.78 per cent had completed their graduation. A majority (84.44%) of the respondents were married while 15.56 per cent were unmarried. One fourth of the respondents (25.56%) were indulged in farming while 74.44 per cent were either doing service or were in business. Majority (87.78%) of the respondents were landless. Only 12.22 per cent of the respondents were small farmers having land up to 4 acres. Around two third of the respondents (63.33%) were living in joint families while 36.67 per cent were from the nuclear families. In all 45.56 per cent of the respondents had income between fifty thousand to one lakh followed by 40 per cent having income from one to two lakhs whereas the remaining had income up to fifty thousand rupees.

The data in Table 2 depict that only 36.67 per cent of the respondents knew the importance of mushroom consumption in diet while it was observed that all the respondents consumed mushroom. It was noted that 50 per cent of the respondents consumed it twice a month followed by 34.44 per cent who consumed it once a month. All the respondents consumed mushrooms in vegetable form by cooking it followed by 16.67 per cent who preserved it either by preparing mushroom pickle or dried it for later consumption. Button mushroom was the most preferred type of mushroom as all the respondents preferred its taste followed by 7.78 per cent who preferred Dhingri also; only 2.22 per cent also preferred milky mushroom.

Forty per cent of the respondents were aware of mushroom cultivation and they cultivated mushrooms at home themselves while the source of procuring mushrooms for 60 per cent of the respondents was local market as they were not aware of mushroom cultivation (Fig 1).

The data in the Table 3 reveal that out of thirty six of the respondents who cultivated mushrooms themselves at home, the source of information for 88.89 per cent was Krishi Vigyan Kendra, private agencies for 8.33 per cent and other government institutes for 2.78 per cent. A majority of the respondents (72.22%) had attended training for one week (five working days) while 27.78 per cent had attended one/two

Table 1. Socio-personal profile of trainees (n= 90)

Characteristics	# trainees	Percentage
Age (years)		
20-30	19	21.11
30-40	47	52.22
40-50	15	16.67
50 and above	9	10.00
Caste		
General	43	47.78
Scheduled caste	47	52.22
Education		
Illiterate	39	43.33
Up to matric	27	30.00
Up to +2	17	18.89
Graduate	7	7.78
Marital status		
Married	76	84.44
Unmarried	14	15.56
Occupation		
Farming	23	25.56
Others (service, business etc)	67	74.44
Land holding		
Landless	79	87.78
Small (up to 4 acres)	11	12.22
Type of family		
Nuclear	33	36.67
Joint	57	63.33
Family income (Rs lakh)		
Up to 0.5	13	14.44
0.5 - 1	41	45.56
1 – 2	36	40.00

day trainings on mushroom cultivation. A large number of the respondents (91.67%) had adopted mushroom cultivation at household level whereas 8.33 per cent had adopted it at commercial level.

It was found that 8.33 per cent of the respondents adopted cultivation commercially at small scale (Table 4). Since none of the respondents adopted mushroom

cultivation at large scale, they didn't require loan for starting the enterprise. Out of all the mushroom cultivators the source of spawn/mushroom seed for 63.89 per cent of them was either State Agricultural University or Krishi Vigyan Kendra. Twenty five per cent of the respondents procured the mushroom seed/spawn from government institutions like state agricultural department and state horticultural

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Table 2. Awareness about nutritional aspect of mushrooms (n= 90)

Aspect	# respondents	Percentage
Importance of mushroom in diet	33	36.67
Consumption of mushroom	90	100.00
Frequency of consumption of mushroom		
Once a month	31	34.44
Twice a month	45	50.00
Once/twice a year	14	15.56
Knowledge regarding value addition of mushrooms		
Cooking- as vegetable	90	100.00
Preservation- pickle/drying	15	16.67
Byproducts- cutlets	7	7.78
Kind of mushroom preferred		
Button	90	100.00
Dhingri	7	7.78
Milky	2	2.22

Table 3. Information regarding mushroom cultivation (n= 36)

Source	# respondents	Percentage
Source of information		
SAUs/KVKs	32	88.89
Govt institutions	1	2.78
Pvt agencies	3	8.33
Training on mushroom cultivation attended		
1/2 day(s)	10	27.78
1 week/5 days	26	72.22
Adoption of mushroom cultivation		
Household/domestic	33	91.67
Commercial (small scale)	3	8.33

Table 4. Commercialization of mushroom cultivation (n= 36)

Characteristics	# respondents	Percentage
Cultivation at commercial level		
Large scale	-	-
Small scale	3	8.33
Started business by taking loan	-	-
Source of spawn/mushroom seed		
SAUs/KVKs	23	63.89
Govt institutions	9	25.00
Pvt agencies	4	11.11
Sale of produce		
Wholesale	-	-
Local market	3	8.33

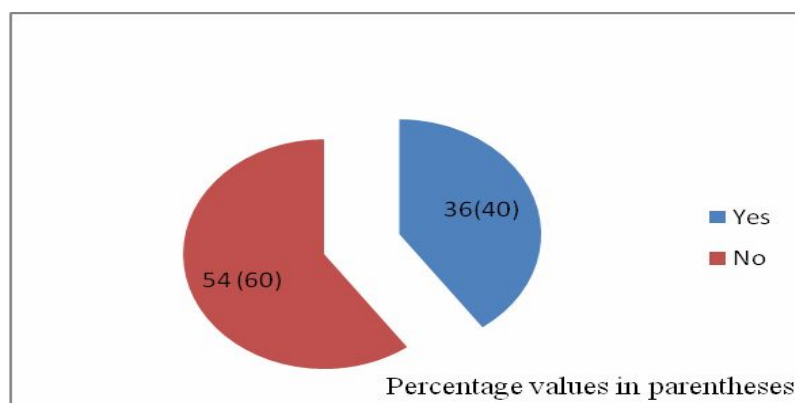


Fig 1. Awareness about mushroom cultivation

department while 11.11 per cent of the respondents procured it from some private agencies also.

The average yield of mushroom of the respondents who cultivated it at household level was between 4.3 to 5.6 kg/kg spawn/person and those who cultivated at small scale was between 5.6 to 6.0 kg/kg spawn/person (Table 5).

Table 5. Assessment of yield of mushroom

Level	Yield (kg/kg spawn/person)
Household level	4.3-5.6
Small scale	5.6-6.0

CONCLUSION

It was observed from the study that mushroom was consumed by all the respondents but less than half of the respondents were aware of its nutritive aspect. It was also seen that some respondents were well aware of mushroom

cultivation at household and commercial level. Since mushroom is a seasonal crop so there is a requirement to create more awareness among farmers about nutritional aspects, cultivation and sources of seed of mushroom by imparting more trainings and demonstrations and motivating them to adopt mushroom farming for self-employment and income generation.

REFERENCES

- Atkins FC 1972. Minor disease and competitors: mushroom growing today. Faber and Faber Ltd, 3 Queen Square, London, 188p.
- Chang ST and Miles PG 2004. Mushrooms: cultivation, nutritional value, medicinal effect and environmental impact. CRC Press, Boca Raton, 451p.
- Kaul TN and Dhar BL 2007. Biology and cultivation of edible mushrooms. Westville Publishing House, New Delhi, India, 225p.
- Kumar P, Kumar S, Lal M and Ali M 2013. Mushroom cultivation an emerging agribusiness for self-employment and entrepreneur development. Agriways **1(2)**: 147-154.

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