

DHINGRI MUSHROOMS- A VIABLE & BANKABLE MODEL OF EMPLOYABILITY- AN OVERVIEW

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Abstract

‘Dhingri’ (Oyster mushroom -*Pleurotus* sp.), which grows naturally in the temperate and tropical forests on dead and decaying wooden logs or sometimes on dying trunks of deciduous or coniferous woods is a complete food in itself. Oyster mushroom can grow at moderate temperature ranging from 20⁰ to 30⁰ C and humidity 55-70% for a period of 6 to 8 months in a year. The economic importance of the mushroom lies primarily in its use as food for human consumption. It is rich in Vitamin C and B complex and the protein content varies between 1.6 to 2.5 percent. Among all the cultivated mushrooms *Pleurotus* has maximum number of commercially cultivated species suitable for round the year cultivation. Cultivation of this mushroom on commercial basis would be more profitable as compared to white button mushroom as capital cost is low. The cultivation of this variety of mushroom is very simple and economical in rural areas where raw materials and facilities required are easily available. Its cultivation is very profitable for the marginal farmers and thereby becomes one of the low-cost employable unit for the youths of the country.

DHINGRI MUSHROOMS- AN OVERVIEW

Oyster mushroom (*Pleurotus* sp.) belonging to Class Basidiomycetes and Family Agaricaceae is popularly known as ‘dhingri’. In India it grows naturally in the temperate and tropical forests on dead and decaying wooden logs or sometimes on dying trunks of deciduous or coniferous woods. The fruiting bodies of this mushroom are distinctly shell or spatula shaped with different shades of white, cream, grey, yellow, pink or light brown depending upon the species. It is one of the most suitable fungal organisms for producing protein rich food from various agro-wastes or forest wastes without composting. Cultivation of different varieties of oyster mushroom was initiated in India in the early sixties. Commercial cultivation began in mid-seventies.

The oyster mushrooms have three distinct parts- a fleshy shell or spatula shaped cap (pileus), a short or long lateral or central stalk called stipe and long ridges and furrows underneath the pileus called gills or lamellae. The mycelium of *Pleurotus* is pure white in colour.

Oyster mushroom is the third largest cultivated mushroom. China, the world leader in Oyster production, contributes nearly 85% of the total world production of about a million tonnes. The present production of this crop in India is only around 1500 tonnes due to low domestic demand. Another inhibiting factor is that export demand orders are large and can be met only if a linkage is developed between producer, cooperatives and exporters.

The economic importance of the mushroom lies primarily in its use as food for human consumption. It is rich in Vitamin C and B complex and the protein content varies between 1.6 to 2.5 percent. It contains most of the mineral salts required by the human body. The niacin content is about ten times higher than any other vegetables. The folic acid present in oyster mushrooms helps to cure anemia. It is suitable for people suffering with hyper-tension, obesity and diabetes due to its low sodium: potassium ratio, starch, fat and calorific value. Alkaline ash and high fiber content makes it suitable for consumption for those having hyperacidity and constipation. A polycyclic aromatic compound pleurotin has been isolated from *P. griseus* which possess antibiotic properties.

The spent straw can be re-cycled for growing oyster mushroom after supplementing with wheat or rice bran @ 10-15 % and also for preparing compost of white button mushroom after suitable supplementation with nitrogen rich horse or chicken manure (sun-dried before use). The spent straw can be used as cattle feed and also for bio-gas production. The slurry can be used as manure.

Oyster mushroom can grow at moderate temperature ranging from 20⁰ to 30⁰ C and humidity 55-70% for a period of 6 to 8 months in a year. It can also be cultivated in summer months by providing the extra humidity required for its growth in hilly

areas above 900m. (a m.s.l.), the best growing season is during March/April to September/October and in the lower regions from September/October to March/April.

Among all the cultivated mushrooms *Pleurotus* has maximum number of commercially cultivated species suitable for round the year cultivation. All the species of oyster mushroom are edible except *P. olearius* and *P. nidiformis* which are poisonous. Species commercially cultivated all over the world during summer months includes *P. flabellatus*, *P. sajor caju*, *P. sapidus*, *P. membranaceus*, *P. citrinopileatus*, *P. eous* etc. and those produced during winter are *P. ostreatus*, *P. florida*, *P. cornucopiae*, *P. fossulatus*, *P. eryngii* etc.

This mushroom is not as popular as white button mushroom in the domestic market. A few units are cultivating it commercially for export market. Cultivation of this mushroom on commercial basis would be more profitable as compared to white button mushroom as capital cost is low. The cultivation of this variety of mushroom is very simple and economical in rural areas where raw materials and facilities required are easily available.

Marketing of fresh oyster mushroom does not pose any problem at present due to very low production. However, as production increases linkage of producers with domestic markets and export oriented processing units will need to be developed to ensure remunerative prices to the producers. Generally, export orders are too big to be met by a single grower and as such co-operatives have to be encouraged to pool their produce for trading the crop in a dried powder form in international markets. The quantity of oyster mushroom exported is much lower than that of button mushrooms which constitute the major share of exports.

Species of *Pleurotus* is cheapest and easiest to grow among all the cultivated edible mushrooms. Cultivation does not require complicated substrate preparation technique as in case of button mushroom. The former can be grown on non-fermented, almost fresh plant residues (agro-wastes containing lignin and cellulose). Substrate preparation does not require controlled environmental conditions as in case of button mushroom. The crop has got a number of varieties varying in shape, colour, texture and aroma which can be cultivated throughout the year under varied agro-climatic conditions. Faster growth rate and early cropping is observed. About 5 to 6 crops can be taken in a year as the total cropping period is 60 days.

High quality commercial cultivation of the crop even on a small scale is a viable proposition as it is in good demand both in domestic and foreign markets. Following are the facts and figures which facilitates the cultivation of *P. florida*:

- i) Cost of spawn is to be Rs. 100/- per kg, whereas that of the wheat straw is Rs. 700/- per qtl.
- ii) A bag containing 2-3 kg straw is produced 2-3 kg of mushroom on 03 harvests. Polythene covering is left intact till second harvest, thereafter; it is removed prior to third harvest.
- iii) Life span from inoculation to the final harvest is observed to be 60 days
- iv) Of the total cost incurred, Rs. 30,000/- could be earned as profit if the number of bags is 400.
- v) Dhingri could be raised either in a low cost bamboo hut costing not more than Rs. 35,000/- or in a dark but moist and humid room.

It could therefore be concluded that the cultivation of dhingri mushroom will open a plethora of opportunities for the young brains and for the marginal and even poor farmers by making them employable.