

Oyster Mushrooms- Nature's Hidden Treasure

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SUMMARY

Mushrooms are valuable and nutritious food, low in calories and high in vegetable proteins, zinc, chitin, fibres, vitamins and minerals. The mineral salt content in mushrooms is superior to that of meat and fish and nearly twice that of the most commonly used vegetables. Hence they are mostly preferred by health conscious vegetarians. Mushrooms with their flavour, texture, nutritive value and high productivity per unit area have been identified as an excellent food source to alleviate malnutrition in developing countries.

INTRODUCTION

The name oyster comes from oyster shaped cap and very short stem with decurrent gills. These mushrooms are also called as dhingri mushrooms. *Pleurotus* species majorly represent oyster mushrooms. Oyster mushrooms are industrially used for mycoremediation purposes. Arabitol, a sugar alcohol present in mushrooms can cause gastrointestinal upset in some individuals. Some species also have bioluminescent properties. These mushrooms are usually light grey or white or greyish brown in colour and differ according to species. *P. eous* is a pink coloured mushroom while *Hypsizygus ulmarius* (this genus also represents oysters) is having a bluish grey tinge on the edge. *P. pulmonarius* is yellow while *P. citrinopileatus* is golden yellow coloured. All these mushrooms have a mild flavour and is usually undetectable when incorporated into a dish. Fungi belonging to the genus *Pleurotus* have an important place among the commercially cultivated Basidiomycetes because of their gastronomic, nutritional and medicinal properties. Generally in nature these mushrooms grow as saprophytes on wooden logs. Although these mushroom species can be easily cultivated on a wide range of substrates. *Pleurotus* spp. has a tremendous organoleptic as well as nutritional value.

Among the mushrooms cultivated all over the world, oyster mushrooms rank second in world production. Mushrooms in this group belong to different families such as Pleurotaceae, Lyophyllaceae, Tricholomataceae etc. These mushrooms have wide adaptability to environment and growing substrates. Therefore, they are cultivated all over the world. They are found in both tropical and temperate climates throughout the world. They are predominantly cultivated in about 25 countries in Asia, Europe and America. China alone contributes 88 per cent of the total world production. In India, it is popularly grown in the states of Kerala, Tamil Nadu, Karnataka, Orissa, Maharashtra, Andhra Pradesh, Madhya Pradesh, and West Bengal and in the North-Eastern States of Meghalaya, Tripura, Manipur, Mizoram and Assam. The hot and humid climate in these regions favours mycelial run as well as fruit body formation of these mushrooms. So also, it has greater abilities to grow at a wide range of temperatures utilizing various lignocelluloses. Obviously; it is the most suitable fungus for conversion agro waste into a protein rich food.

Indian production scenario has been negligible amounting only to approximately 50,000 tonnes per annum as against world production of 55 lakh tones. Demand for mushrooms is increasing day by day as people have realized that mushroom consumption is the best solution to a number of health problems such as high cholesterol, diabetes, hypertension, constipation and also have anti carcinogenic properties. Large varieties of biomass have been successfully utilized for cultivation of *Pleurotus* spp. Agro waste such as straws of cereals, sugarcane bagasse, weeds, left over's of the harvested crops, cotton waste, sorghum stalks, soybean stalks, maize cobs have been successfully used as substrates for cultivation of oyster mushrooms. But paddy straw is the most widely used substrate for commercial production of oyster mushroom. The farmers from Konkan region can utilize the excess paddy straw for mushroom production as a small scale business. Substrate enrichment with protein rich supplements like wheat bran, rice bran, soybean flour have also been reported to be very effective in enhancing biological efficiency of oyster mushrooms. Although cereal straws have proved to be better substrates, their fortification with protein rich supplements definitely enhances the biological efficiency of mostly all the oyster mushrooms.

Commercialization of mushroom production needs to be boosted up to which can serve as an additional income to the farmers. In that case some supplements will have to be used for increasing the biological efficiency of mushrooms. Though supplementation of substrates with protein rich supplements have been tried to increase the yield, use of micronutrients, growth regulators and chemical fertilizers for yield enhancement has not been investigated to a greater extent. Plant growth regulators play an important role in mycelial growth of mushroom under *in vitro* conditions. Macro and micronutrients, especially essential bio-metals are often used to increase the yield of medicinal mushroom biomass. *Pleurotus* species have the ability to absorb microelements from different cultivation media and thus they may present an excellent dietary source.

CONCLUSION

Now a day's ready mix soups, mushroom powders and many such products have been emerged in the markets as mushrooms are gaining more nutritional importance. There is an escalating trend in demand for mushrooms so there is a need for increasing the production by adopting measures to enhance the biological efficiency of mushrooms.

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