

Appraisal of agricultural wastes for cultivation of *Pleurotus eous* (Berk.) Sacc.

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SUMMARY

Pleurotus eous (Berk.) Sacc. was cultivated on different agro-wastes viz., rice straw, wheat straw, maize stalks, sugarcane leaves, banana leaves, cotton stalks, pigeonpea straw and, soybean straw to find out the most suitable substrate for its cultivation. Parameters assessed included the spawn run period, number of days from spawning till appearance of pinheads, the days from spawning to first flush and, fresh yield of sporophores. Biological efficiency was also determined. The results indicated that spawn run was most expeditious in the beds prepared using cotton stalks and pigeonpea straw, which was found to be completed earlier by 2 to 4.7 and 1.6 to 4.3 days, respectively whereas, pinheads in these beds were found to be induced earlier by 2 to 5 and 1.7 to 4.7 days, respectively in comparison with the rest of substrates tried. First flush of sporophores with these beds was ready for harvest in 12.7 and 13 days, respectively as against 14.7 to 17.7 days with the rest of substrates tried in the investigation. Cotton stalks yielded 10.7 to 35.3 per cent more yield whereas increase in yield with pigeonpea straw, wheat straw and soybean straw ranged between 7.6 to 28.2 per cent in comparison with the rest of substrates.

Key Words : *Pleurotus eous*, Oyster mushroom, Substrates

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Mushroom cultivation is the most efficient and economically -viable biotechnology for the conversion of lignocellulosic waste materials into high-quality protein food and this will naturally open up new job opportunities especially in rural areas and may be prepackage by food industry and exported to other countries as food conditions and for revenue generation. Mushrooms are important source of edible protein for human consumption. The use of these may contribute significantly in overcoming protein deficiency in the developing nations, where good quality proteins from animal sources are either unavailable or unacceptable for religious beliefs. Edible mushrooms have been recommended by the FAO as food contributing to the protein nutrition of the developing countries depending largely on cereals (Sohi, 1992). On dry weight basis, mushrooms are positioned well above most foods such as cereals/vegetables or fruits including animal products but below most meats.

Species of *Pleurotus* (oyster mushroom) are well known edible mushrooms in different parts of the world. Their cultivation is becoming popular due to desirable attributes like rapid mycelial growth, greater ability for saprophytic colonization, simple and cheap cultivation techniques, time advantage over other cultivated mushrooms and easy post harvest storage. Oyster mushroom production accounted for 14.2 per cent of the total world yield (6,161,000 t) of all edible mushrooms in 1997 (Chang, 1999). Oyster mushrooms also have high productivity as compared to button mushrooms, which have around one-fifth the productivity of oyster mushrooms. Gastronomically, oyster mushrooms are the only cultivated mushrooms classified among first quality mushrooms. Button mushrooms and shiitake are classified as mushrooms of second quality (Kohli, 1999).

Oyster mushrooms belong to family Tricholomataceae which includes many species such as *P. flabellatus*, *P. sajor-caju*, *P. eryngii*, *P. ostreatus*, *P. florida*, *P. eous* and *P. sapidus*. Among the various species of *Pleurotus*, *P. sajor-caju* is known to produce very high yield. However, consumer acceptability of *P. sajor-caju* has not been appreciable widely

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