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RESEARCH ARTICLE

Effect of spawn substrates on yield of *Pleurotus eous* (Berk.) Sacc.

■ C.T. KUMBHAR

SUMMARY

Grains of cereals and pulses and crop residues (straws) were assessed to determine their suitability for production of spawn and sporophores of *Pleurotus eous* (Berk.) Sacc. For each replicate of the various treatments, the days from inoculation of the spawn substrates till total colonization were recorded. Mycelium of *P. eous* indicated marked preference for cereal grains over pulses and crop residues. Among the cereals, ragi grain colonized the best in only 6 days, followed insignificantly by maize, pearl millet, sorghum, wheat and paddy grains. Pulses did not allow growth of the fungal mycelium. Colonization of various straws was prolonged considerably. The cereal grain and straw spawns were used as inocula on wheat straw to compare their yield characteristics. 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 ragi, maize, pearl millet and sorghum grain spawns accelerated the spawn run, pinning and maturity of sporophores and gave higher sporophore yield.

Key Words : *Pleurotus eous*, Oyster mushroom, Spawn substrates

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Oyster mushroom (*Pleurotus* spp.) cultivation has increased tremendously throughout the world during the last few decades (Chang, 1999; Royse, 2002). Oyster mushroom accounted for 14.2 per cent of the total world production of edible mushrooms in 1997 (Chang, 1999). 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). Above all, the wide choice of species available for cultivation under different climatic conditions has made this mushroom, a mushroom of a broad adaptability (Wani and Sawant, 1998). Among the various species of *Pleurotus*, *P. sajor-caju* is known to produce very high yields. However, consumer acceptability of *P. sajor-caju* has not been appreciable widely due to tough texture of stipe, brown to gray colour of the pileus and moderate aroma (Prabhu Dessai *et al.*, 1991). This calls for substitute to *P. sajor-caju* with a species having desirable attributes of consumer liking. *Pleurotus eous* (Berk.) Sacc. is a conspicuous species and because of its attractive bright pink sporophores, firm crisp and melting texture, it ranked higher in sensory evaluation *vis-à-vis P. sajor-caju. Pleurotus eous* also has yield potential comparable to that of *P. sajor-caju* and also it comes to yield earlier (Prabhu Dessai *et al.*, 1991). Proximate composition and nutritive constituents of this species are also similar to that of other species of *Pleurotus.* The protein content is 33.24 per cent on dry weight basis. It contains 13 free amino acids *viz.*, serine, glutamic acid, alanine, glycine, lysine, aspartic acid, arginine, tyrosine, methionine, valine, phenylalanine, isoleucine and leucine. In addition, the presence of cystine and threonine was also observed (Singh and Rajarathnam, 1977). *Pleurotus eous* contains moisture 93.73, protein 33.68, soluble carbohydrate 29.30, insoluble carbohydrate 26.10, crude fibre 2.16, fat 0.53 and ash 4.35 per cent on dry weight basis (Prabhu Dessai *et al.*, 1991). It is rich in iron (0.1972 g/100 g dry weight), aluminium (0.1558 g/100 g dry weight), potassium (2.98 g/100 g dry weight), calcium (0.3028 g/100 g dry weight) and magnesium (0.2137 g/ 100 g dry weight) (Gupta, 1998). It is likely that, *Pleurotus eous* mushroom has good future market. Yet there is a need for finding out the factors responsible for yield

AUTHOR FOR THE CORRESPONDENCE

C.T. KUMBHAR, Zonal Agricultural Research Station (Sub-montane Zone), Shenda Park, KOLHAPUR (M.S.) INDIA