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Biological efficiency and nutritional value of *Pleurotus sapidus* cultivated on different substrates

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ABSTRACT

Pleurotus sapidus was cultivated on different substrates viz., soybean straw, paddy straw, wheat straw, jowar straw, bajra straw, tur straw and sunflower stalk, to determine the effect of these substrates on yield and nutritional contents of *Pleurotus sapidus*. Soybean straw showed significantly highest yield (with 72.86 % B.E.) with maximum protein (26.75 %) and ash (7.00 % content). Maximum carbohydrate (52.00 %), fat (2.60 %) and moisture (91.33 %) content in fruiting bodies were recorded on wheat straw cultivation. Highest crude fiber content in fruiting bodies (8.00 %) was recorded when cultivated on paddy straw

Key words : *Pleurotus sapidus*. Soybean straw, Paddy straw, Wheat straw, Biological efficiency

INTRODUCTION

Mushrooms are rich in proteins, vitamins and minerals. Cultivation of edible mushrooms not only help in recycling of agro - wastes but also filling up the protein gap prevalent among the large population. The mushrooms have the capacity to convert nutritionally valueless substrates into high protein food (Chang and Hayes, 1978). Zakhary *et al.* (1983) reported the edible mushroom species are highly nutritious. Their nutritional value comparing favorably with that of meat, eggs and milk. Among the various edible mushrooms *Pleurotus* sp. are efficient lignin degrading mushrooms and more suitable to tropical and sub-tropical countries, which can grow easily on large variety of lignocellulosic residues by secreting spectrum of enzymes require shorter growth time as compared to other edible mushroom types. *Pleurotus* species commonly known as Oyster fungus which can be used as food and medicine as it provide high protein contains all essential amino acids and good source of vitamins, minerals (Mandhare *et al.*, 2003). The *Pleurotus* species are intensively studied in many different parts of the world.

In present study the productivity and nutritional content of *Pleurotus sapidus* were analyzed. Based on

earlier studies and local availabilities of the agricultural wastes, soybean straw, paddy straw, wheat straw, jowar straw, bajra straw, tur straw and sunflower stalk were utilized for the cultivation of *Pleurotus sapidus*.

MATERIALS AND METHODS

The study was undertaken in Department of Botany, Yeshwant College, Nanded. The Culture of *Pleurotus sapidus* was obtained from N.C.I.M. National Chemical Laboratory (NCL), Pune. The substrates viz., soybean straw, paddy straw, wheat straw, jowar straw, bajra straw, tur straw and sunflower stalk were used for filling the bags. These were chopped to pieces of 2-3 cm. and soaked in water over night to moisten it. After soaking, the substrate was steam sterilized at 121°C for 30 minutes in an autoclave. The polythene bags of size 35-45 cm were used and filled with sterilized substrate (1kg dry substrate sample in each bag). Multi-layered technique was adopted for spawning the substrate. The spawn was added to bags at the rate of 2% of the wet weight of substrate. Five replicates were maintained for each treatment. After inoculation, the bags were transferred to mushrooms house where temperature and humidity were maintained at 22-