

Evaluation of yield performance and nutritional value of *Pleurotus sajor-caju* cultivated on different lingo cellulosic wastes

R.M. KADAM^{1*}, B.S. JADHAV¹, S.S. PATIL¹, B.S. KADAM¹ AND J.A. KADAM²

¹Department of Botany, Mahatma Gandhi Mahavidyalaya, Ahmedpur, LATUR (M.S.) INDIA

²Department of Botany, Kumarswami Mahavidyalaya, Ausa, LATUR (M.S.) INDIA

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SUMMARY

This study was conducted to determine yield potential, biological efficiency and nutritional contents of *Pleurotus sajor-caju* grown on different lingo cellulosic wastes like Soybean, Paddy, Wheat, Jowar, Green gram and Black gram straw. Significantly maximum yield (with 88.73% B.E.), protein (26.15%), fat (2.38%) total carbohydrates (55.00%) and moisture (90.80 %) content were found when Mushroom was cultivated on Soybean straw. Black gram straw showed maximum crude fibre (7.50%) and ash (6.65%) content in Mushroom.

Key words : Nutritional value, *P. sajor-caju*, Oyster, B.E. (Bio-efficiency) Pickings, Substrates.

Pleurotus spp. are called as oyster mushroom because of its oyster like (pileus) shape. In India, it is commonly called as 'Dhingri'. Cultivation of *Pleurotus* spp. became more popular in India because they can grow well in moderate climate on wide variety of lingo cellulosic wastes. *Pleurotus* spp. have simple and low cost production technology, which gives high biological efficiency. Oyster mushroom are rich source of proteins, vitamins and minerals, hence they are important for both nutritive as well as medicinal values (Bonatti *et al.*, 2004). Mushroom proteins contains all the essential amino acids, vitamins required for human body (Stephen *et al.*, 2004; Caglarirmak, 2007). The genus *Pleurotus* has about 40 recognized species, out of which 25 species have been reported from India, of which 10 species are cultivated in different parts of country. In India *Pleurotus sajor-caju* is cultivated through out the country and through out the year except a few months of extreme hot climatic conditions. *Pleurotus sajor-caju* on dry weight basis contains 47.93% proteins, 0.28% reducing sugar, 0.06% ascorbic acid, 8.25% ash, 9.25% starch and 2.26% fats (Bahl, 1994). In the present work yield, biological efficiency and nutritional contents of *Pleurotus sajor-caju* were analyzed when cultivated on locally available substrates.

MATERIALS AND METHODS

The study was undertaken in Department of Botany, Mahatma Gandhi Mahavidyalaya, Ahmedpur Dist. Latur during August 2006 - August 2007. The culture of *Pleurotus sajor-caju* was obtained from N.C.I.M., National Chemical laboratory (NCL), Pune. Six substrates

viz. Soybean straw, Paddy straw, Wheat straw, Jowar straw, Green gram straw and Black gram straw were used for filling the bags. It was chopped to pieces of 2-3 cm. and soaked in water over night to moisten them. After soaking, the substrate was steam sterilized at 121°C for 30 minutes in an autoclave. The polythene bags of size 40-60 cm were used and filled with sterilized substrate (1 kg 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 replications were maintained for each treatment. After inoculation, the bags were transferred to mushroom house where temperature and humidity were maintained at 22-30°C and 80-90%, respectively. When spawn run (mycelial growth) was completed, the polythene bags were removed to promote mushroom formation. The bags were moistened and ventilated throughout the harvest period. The beds were maintained up to the harvest of three flushes.

The data was recorded for yield and biological efficiency (Table 1). The biological efficiency was expressed in per cent and calculated by the formula (Chang *et al.*, 1981).

$$\text{B.E. (\%)} = \frac{\text{Fresh wt. of mushroom}}{\text{Dry wt. of substrate}}$$

The data for nutritional contents of mushroom is given in the Table 2. The moisture content was determined by the direct oven drying method (AOAC, 1990). The protein, fat and ash were determined by the procedure recommended by AOAC (1984). Total carbohydrate was determined by phenol sulphuric acid method (Wankhede

* Author for correspondence.