

Minerals composition of mushroom (*Pleurotus* species)

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SUMMARY

Three *Pleurotus* species namely *Pleurotus sajor-caju*, *Pleurotus florida* and *Pleurotus ostreatus* were evaluated for their mineral (Na, K, P, Ca, Fe) content when cultivated on different substrates (soybean, paddy, wheat straw and their combination in 1:1 proportions). *Pleurotus ostreatus* showed maximum Na (318 mg/100g) K (2450 mg/100g) and P (935 mg/100g) content when grown on soybean straw, whereas maximum Fe (14.30 mg/100gm content was found when grown on combination of soybean +paddy straw. *Pleurotus sajor-caju* was found to give maximum Ca (350 mg/100g) content when grown on combination of soybean +paddy straw.

Key words : *Pleurotus sajor-caju*, *Pleurotus ostreatus*, *Pleurotus florida*, Minerals

Consumption of mushroom have been known from many years, as they are important for both nutritive and medicinal values (Bonatti *et al.*, 2004; Cheung and Cheung, 2005). The edible mushroom species are highly nutritious and their nutritional value comparing favorably with that of milk, eggs and meat (Gruen and Wong, 1982; Suzuki and Oshima, 1976; Zakhary *et al.*, 1983). Mushrooms are the rich source of minerals (Jiskani, 2001) and provide valuable nutrients to the diet in the form of proteins, vitamins and salts of phosphates, potassium, sodium, sulphur, calcium, magnesium, iron, zinc chlorides, silicates, molybdenum and vanadium. Singh *et al.* (2003) reported 4.75 to 21.00% ash (minerals) in different mushroom species. Presence of high potassium: sodium ratio makes the mushroom an ideal food for person suffering from hypertension and heart diseases (Rai *et al.*, 1998; Mandhare *et al.*, 2003). Huseyin *et al.* (2009) estimated the macronutrients (mg/g d.w.) as ca (0.17-8.80) k (12.6-29.1), Na (0.03 – 4.85), P (0.64-4.49) and micronutrient as Fe (50.1-842 mg/kg. d.w. from wild grown edible mushroom species.

Necla (2007) reported average mineral value of *Pleurotus* sp. (mg/kg wet basis) were Zn (11.18 - 9.31), Fe (14.80 -7.94), P (998.47 - 716.31), Ca (81.16 - 23.66), K (2225-2687) and Na (750.77 -773.67). The present study was conducted to study the effect of different substrates on mineral content of *Pleurotus* species.

MATERIALS AND METHODS

Samples:

The *Pleurotus* species viz., *Pleurotus sajor-caju*, *Pleurotus florida* and *Pleurotus ostreatus* were grown on different substrates viz., soybean, paddy, wheat straw and their combinations in 1:1 proportions. The samples were collected from three successive harvesting (pickings), dehydrated in cabinet dryer and ground to fine powder, packed in bottles and stored in refrigerator till used for analysis.

Mineral analysis:

The samples were digested in tri-acid mixture [(HNO₃: H₂SO₄ and HClO₄) in 10:1:4 ratio]. For digestion 1 gm of powdered samples of dehydrated mushrooms from different harvesting were taken in 100 ml conical flask, 5 ml of concentrated HNO₃ was added to it and kept overnight. On next day, 10ml of tri-acid mixture was added and digested on hot plate as described by Piper (1966). After digestion, the material was filtered and volume was made to 100 ml. This acid digest was used for estimation of minerals viz., sodium, potassium, phosphorus, calcium and iron (Jackson, 1958). Sodium and potassium content of mushroom samples were estimated by using flame photometer (Chapman and Pratt, 1961). Calcium content was estimated by Versenate titration method (Black, 1965). Iron content was estimated by using spectrophotometer at 480nm. (Ranganna, 1995). Phosphorus content was determined by Vanadomolybdate yellow colour method as described by Piper (1966). The recorded data in the present work was subjected to statistical analysis as per the procedure recommended by Panse and Sukhatme (1967).

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