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Effect of supplementing rice straw with water hyacinth on the yield and nutritional qualities of oyster mushrooms (*Pleurotus* spp.)

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ABSTRACT

Cultivation of oyster mushroom on the aquatic weed water hyacinth is an eco-friendly way of disposing the problematic weed. In the present work, water hyacinth (without root) has been used as low cost substrate in different combinations with rice-straw for cultivation of *Pleurotus* florida, *P. citrinopileatus* and *P. pulmonarius* to determine the effect of the weed on the biological yield, as well as on nutritional qualities of the mushrooms. Water hyacinth and rice straw (1:1) supported significant increase in biological yield in all the three *Pleurotus* species in the 1st flush at optimal temperatures. The highest average yield was obtained from *P. citrinopileatus*. Mushrooms grown on rice straw alone, water hyacinth alone, and on rice straw plus water hyacinth (1:1) were analyzed for their moisture, total protein, total carbohydrate, starch, cholesterol, ascorbic acid, niacin, reducing sugar, crude fiber, ash, K^+, EC, and pH. All the mushroom species showed (on dry weight basis) 16-25% protein, 19-28% carbohydrate with no detectable amount of starch and cholesterol, 0.012-0.013% ascorbic acid, 0.001-0.002% niacin, about 9% crude fiber, and 2.8-5.8% potassium. No significant differences were obtained due to supplementation of rice straw with water hyacinth except the pH and EC.

Key words: Biological yield, nutritional qualities, *Pleurotus citrinopileatus*, *P.* florida, *P. pulmonarius*, rice straw, supplementation, water hyacinth.