Production of liquid spawn of an edible grey oyster mushroom, *Pleurotus pulmonarius* (Fr.) Quél by submerged fermentation and sporophore yield on rubber wood sawdust

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**Abstract**

Production of quality spawn having good ability to colonise fruiting substrates at low risk of contamination is of utmost importance to the mushroom industry. The aim of this study was to investigate the potential of producing liquid spawn of an edible mushroom, *Pleurotus pulmonarius* (grey oyster) by submerged fermentation in a 2-L stirred-tank bioreactor under controlled conditions and to evaluate its ability to colonise rubber wood sawdust substrate for sporophore production. The liquid spawn cultivation medium contain 20 g L⁻¹ of brown sugar, 4 g L⁻¹ of rice bran, 4 g L⁻¹ of malt extract, and 4 g L⁻¹ of yeast extract (BRMY) with initial pH of 5.5 and incubated at 28 °C with agitation speed of 250 rpm and oxygen partial pressure of 30–40%. Maximum *P. pulmonarius* dry biomass production of 11.72 ± 5.26 g L⁻¹ was achieved after 3 days of fermentation. The liquid spawn has the ability to colonise sterile rubber wood sawdust as fruiting substrates in a shortened time and produced higher yield of sporophores compared to the traditionally used grain spawn.