MYCELIAL GROWTH PERFORMANCE AND ANTIOXIDANT PROPERTIES OF *Lentinus tigrinus* CULTIVATED ON SELECT CUCURBIT-BASED MEDIA

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ABSTRACT

LIWANAG, EFRAIM JOSE H., Department of Biological Sciences, College of Arts and Sciences, Central Luzon State University, Science City of Munoz, Nueva Ecija, Philippines, **JUNE 2019, MYCELIAL GROWTH PERFORMANCE AND ANTIOXIDANT PROPERTIES OF *Lentinus tigrinus* CULTIVATED ON SELECT CUCURBIT-BASED MEDIA**

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Lentinus tigrinus is an edible basidiomycetes fungus that is known to be nutritious and exhibit functional activities. With the intention of developing technique on the production of mycelial biomass, the effects of select cucurbit-based media on the mycelial performance and antioxidant properties of *L. tigrinus* were evaluated. Mycelial growth performance was evaluated in both solid and liquid culture conditions. The DPPH radical scavenging activity and the total phenolic content of the mycelia grown in the select cucurbit-based liquid media at the best concentration were analyzed. Mycelia on potato decoction gulaman recorded the widest mycelial diameter (71.99 mm) and shortest period of incubation (6.0 days), regardless of concentration. However, 500 g/L concentration of cucurbit species registered the widest mycelial diameter with a mean of [illegible] culture, the heaviest mycelial biomass was noted in both squash broth [illegible] a mean of 0.09 g, but the highest volume loss was recorded in squash broth [illegible] Among concentrations, 500 g/L of all broth media had the highest mycelial biomass [illegible] g) and volume loss (13.42 ml). Mycelia grown in winter melon broth showed [illegible] radical-scavenging activity (51.56%) and total phenolic content [illegible]

biomass production, free radical scavenging activity, and total phenolic content of *L. tigrinus* was significantly affected by liquid culture media (Dulay *et al.*, 2015). The optimum culture condition of *L. tigrinus* was recorded in coconut water gulaman at pH range of 6.0 – 7.0 under dark condition at room temperature (32°C) (Dulay *et al.*, 2012b).

For several years, cucurbits have been one of the staple food among the most important plant families that offers edible products and useful fibers (Bisognin, 2002). They have been reported to offer pharmacognostical properties and bioactivities through extensive research (Bisognin, 2002). *Cucurbita maxima* (squash), one of the most well-known member of family cucurbitaceae has been reported with highly beneficial fiber, and minerals namely potassium, calcium, phosphorus, magnesium, sulphur, silicon, iron and zinc (Czech *et al.*, 2018). *Luffa cylindrica* (luffa), on the other hand, contains group of compounds such as oleanolic acid, vitamin C, vitamin E and carotenoids (Azeez *et al.*, 2013). *Lagenaria siceraria* (bottle gourd) is a good source of various nutrients like protein, fat, fibre, carbohydrates, calcium and magnesium (Kumar *et al.*, 2012) . Moreover, the previous investigation of Al-Snafi (2013) showed that the major components of *Benincasa hispida* (winter melon) fruits are saccharides, proteins, carotenes, vitamins and minerals.

In order to develop practical and innovative cultivation technique towards the utilization of mushroom as source of nutritional food and natural remedy, select cucurbits were evaluated as culture media for mycelial biomass production and antioxidant activities of *L. tigrinus*.

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