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Preliminary Assessment of Growing Oyster Mushroom, Pleurotus sajor-caju on Coconut Husk Substrate Supplemented with Different Amounts of Copra Cake

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Preliminary Assessment of Growing Oyster Mushroom, Pleurotus sajor-caju on Coconut Husk Substrate Supplemented with Different Amounts of Copra Cake*

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Abstract

Mushroom cultivation is a newly introduced technology in the Marshall Islands to promote food security and community health due to its soluble fiber content and nutritive values. Mushroom is also known to have naturally occurring beta-glucans that could prevent high cholesterol and some other non-communicable disease (NCDs). Majuro Atoll has an ample amount of coconut husk and copra cake, a by-product from Tobolar Copra Processing Plant. The study aimed to assess the possibility of using copra cake for mushroom cultivation.

The capability of oyster mushroom in utilizing coconut by-product was assessed in terms of mycelial growth, number of fruiting body, cap diameter and biological efficiency conversion (BEC). The mushroom growing media used for this study were composed of shredded coconut husk, dolomitic lime, brown sugar and varying amounts (0%, 5%, 10%, 15%, 20%, 25%) of copra cake with 45-60% moisture content. It was hypothesized that copra cake supplementation will increase production yield. Treatments were distributed in 10 replications and data were analyzed using the Duncan's Multiple Test Range at 5% level of significance.

Mycelial growth occurred in all treatments in the following order: 10%$>$ 0%, 5%, 15% $>$20% $>$25%. Thin mycelial growth occurred at 0%, and slowest growth was observed for 25%. Fruiting bodies did not take place for treatment without copra cake supplementation (0%). The overall growth performance was observed to be very favorable at 10% copra cake supplementation. This result suggests that coconut husk supplemented with the right amount of copra cake could be utilized effectively as locally available materials for mushroom cultivation.

KEYWORDS: mycelial growth; supplementation; mushroom cultivation; copra cake

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