

**Animal-based Organic Substrate for Oyster Mushroom (*Pleurotus ostreatus*) Cultivation in Sri Lanka**

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**Abstract**

Cultivation of oyster mushroom is widely practiced in small-scale cultivation as a self-employment cottage industry in Sri Lanka. Oyster mushroom, belongs to class *Basidiomycetes* and family *Agaricaceae*, is an efficient lignin-degrading mushroom and grows well on different types of lignocellulosic materials. Since the use of animal manure as a substrate for oyster mushrooms has not been fully investigated properly, the study was carried out to find the effect of using freely available livestock animal dung on oyster mushroom cultivation. The experiment was conducted in the grower's mushroom unit at Udathenna, Matale in 2019. The experiment was laid out in a Complete Randomized Design (CRD) with 5 treatments with 10 replicates. Five treatments were: 10 kg of paddy straw (T1), 9 kg of paddy straw + 1 kg of dry cow dung (T2), 9 kg of paddy straw + 1 kg of dry goat dung (T3), 9 kg of paddy straw + 1 kg of dry poultry litter (T4) and 9 kg of paddy straw + 1 kg of dry pig dung (T5). DOA recommendation is the use of 10 kg of paddy straw and it was used as the control of the study. Ten flushes were harvested to study the number of days taken from inoculation to completion of spawn run, pinhead formation, fruit body formation and the first harvest. Further, the total yield and biological efficiency (BE) were also calculated. The results revealed that there was a significant ( $p < 0.05$ ) difference observed in days to spawn run, pinhead formation, first flush and first harvest and total harvest per bag between T2 and control (T1). It showed that cattle dung with paddy straw is a better substrate compared to the other animal dung. It has a great positive impact on growth where the first harvest was achieved within 50 days with the highest total yield per bag (218 g) with the highest biological efficiency (44%). There was a significant ( $p < 0.05$ ) difference in final yield per bag between T2 and control (205 g). Hence it implies that increased mushroom production can be achieved by incorporating locally accessible low-cost substrates like livestock animal dung which also reduce the production cost.


**Keywords:** *Biological efficiency, cattle dung, dung substrate*

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