

**EVALUATION OF PHILRICE PROTOTYPE MUSHROOM SUBSTRATE
BAGGER FOR OYSTER MUSHROOM (*Pleurotus Ostreatus*)**

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This undergraduate thesis entitled "EVALUATION OF PHILRICE PROTOTYPE MUSHROOM SUBSTRATE BAGGER FOR OYSTER MUSHROOM (*Pleurotus Ostreatus*)," prepared and submitted by ALDRIN M. GASPAR and MELVIN JOHN B. CARA, in partial fulfillment of the requirements for the degree of BACHELOR OF SCIENCE IN AGRICULTURAL AND BIOSYSTEMS ENGINEERING (AB MACHINERY AND POWER ENGINEERING) is hereby accepted:


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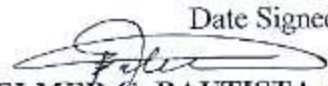
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Aldrin M. Gaspar was born on September 21, 2000 in Brgy. Sta Cruz, Guimba, Nueva Ecija. He is the eldest among the two children of Mr. Nemecio S. Gaspar and Mrs. Agnes M. Gaspar. He finished his elementary education at San Bernardino Elementary School in 2013 and continued his secondary education at Our Lady of the Sacred Heart College of Guimba Inc.

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ABSTRACT

GASPAR, ALDRIN M. and **CARA MELVIN JOHN B.**, Department of Agricultural and Biosystems Engineering, College of Engineering, Central Luzon State University, Science City of Muñoz Nueva Ecija, Philippines. **FEBRUARY 2024, EVALUATION OF PHILRICE PROTOTYPE MUSHROOM SUBSTRATE BAGGER FOR OYSTER MUSHROOM (*Pleurotus Ostreatus*)**

Adviser: **JEFFREY A. LAVARIAS, Ph.D.**

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Mushroom production in the Philippines involves several steps and a considerable amount of time in producing substrates and bagging them for cultivation. Although many mushroom substrate baggers are available in various countries, only a few of them are available in the market, and there is a lack of technical information about them. Developing a machine for filling mushroom bags is one way to increase mushroom production. Therefore, a study was conducted to evaluate a mushroom substrate bagger and compare it with traditional mushroom bagging. The comparison was made based on the capacity, height, weight, and density of substrates produced in polypropylene bags.

Results showed that the mushroom substrate bagger had a capacity of 0.419 bag/min. The time it took to bag the substrate increased by 139%, which affected the machine's capacity. The mushroom substrate bagger finished 40 bags of samples with a mean height, weight, volume, and density of 20.7237 cm, 842.3525 g, 1693.40 cm³, and 0.497 g/cm³ respectively. In contrast, the traditional mushroom substrate bagging can finish 1 bag/min. with a mean of height, weight, volume, and density of 23 cm, 750 g, 1879.34 cm³, and 0.399 g/cm³.

This study highlights the potential of the mushroom substrate bagger in optimizing mushroom production processes. Despite the increase in bagging time, the findings provide valuable insights for the industry, emphasizing the need for further exploration and adoption of advanced technologies to enhance efficiency in mushroom cultivation.

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