

**PRODUCTION, TESTING, AND PERFORMANCE EVALUATION OF
BIOPLASTIC MULCH**

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ABSTRACT

GACAYAN, JEDDY LEE and **PEÑARANDA, LHIRA MAY A.**, Department of Agricultural and Biosystems Engineering, College of Engineering, Central Luzon State University, Science City of Muñoz, Nueva Ecija, Philippines, **June 2023.**
PRODUCTION, TESTING, AND PERFORMANCE EVALUATION OF COCONUT COIR AS BIOPLASTIC MULCH

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Biodegradable plastic mulch is a type of mulch made from plant products such as agricultural and crop residues. This study is vital in addressing the issue of agricultural plastic mulches, which endanger sustainable agriculture, while also converting coconut coir waste into a useful bioplastic mulch. Coconut coir biodegradable plastic are designed to be tilled into soil after use where resident microorganisms degrade the plastic.

The general objective of the study was to produce, test, and evaluate the performance of coconut coir as bioplastic mulch. There were three different treatments of bioplastic mulch: Treatment 1 (T1) for 25g of coco coir, Treatment 2 (T2) with 50g of coco coir, and the Treatment 3 (T3) has 75g of coco coir. The treatment 3 with 75g has the highest tensile strength and biodegradability. The average plant height of the eggplant was 15.16 inches, Treatment 1 produced the most leaves, and Treatment 3 produced fewest weeds. Soil moisture ranges from 9 which indicates that the moisture content was retained by the plastics thus minimizing the consumption of water supplied. In this study, the recommended treatment was T1 – 25 g, it performed best among the other treatments based on the parameters (biodegradability, tensile strength, growth of eggplant).

Keywords: bioplastic; bioplastic mulch; coco coir; mulching

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