

**PERFORMANCE EVALUATION OF THE DEPARTMENT OF ENVIRONMENT
AND NATURAL RESOURCES SHREDDER - BIO COMPOSTER TANDEM
EQUIPMENT**

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ABSTRACT

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In this study, the DENR Shredder-Bio composter Tandem Equipment has undergone a performance evaluation. This study assessed the pH level, Total NPK ratio, and C: N ratio of the final organic fertilizer product that used vegetable waste as raw materials for composting. The findings of the study revealed the established actual shredding capacity, efficiency, and fuel consumption of the DENR Shredder at three different speeds of the shredding mechanism: 1200 rpm, 1400 rpm, and 1800 rpm. Accordingly, the high speed of 1800 rpm resulted in the highest shredding capacity of 1120 kg/hr, with the observed highest shredding efficiency also of 96.89%, and the highest fuel consumption of 2.14 L/hr. For the bio-composter unit, the output has total nitrogen, total phosphorus, and organic matter content within the range of the standard organic fertilizer based on Philippine National Standard of Organic Fertilizer. However, the parameters such as moisture content, pH, total potassium, and C: N ratio fall short of the minimum requirement. The average moisture content of the organic produced fertilizer was 13.78%. For the pH, the produced organic fertilizer was averaging 9.53. The NPK ratio has a percentage mean of 9.54%.

As for the C: N ratio, the mean ratio was 8:1 and for its organic matter, the mean percentage was 39.98%.

Keywords: Organic Fertilizer; Shredder; Composter

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