

**A Comparative Study on the Utilization of the *Eudrilus euginae*  
(African Night Crawler) in the Production of Vermicompost  
and Vermins Using Agricultural Waste  
as its Substrates  
SY 1996-1997**

**An Undergraduate Thesis  
Presented to  
the Faculty of the College of Arts and Sciences  
De la Salle University - Dasmariñas  
Dasmariñas, Cavite**

**In Partial Fulfillment  
of the Requirements for the Degree  
Bachelor of Science in Biology**

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**March 1997**

15 MAR 1997

**ABSTRACT**

**NAME OF INSTITUTION :** De la Salle University - Dasmarinas

**ADDRESS :** Bagong Bayan Dasmarinas, Cavite 4115

**TITLE :** A Comparative Study on the Utilization of the *Eudrilus euginae* (African Night Crawler) in the Production of Vermicompost and Vermins Using Agricultural Waste as its Substrate.

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**FUNDING SOURCE :** Parents

**COST :** 2,000 pesos

**DATE STARTED :** June 24, 1996

**DATE COMPLETED :** September 4, 1996

**OBJECTIVES OF THE STUDY :**

**A. GENERAL :** To be able to learn the relationship of *Eudrilus euginae* (African Night Crawler) on agricultural waste.

**B. SPECIFIC :** To determine the effect of the different substrates such as rice straw, sugar bagasse, and coconut coir in the production of compost in terms of weight and in the production of vermins in terms of number and weight.

**SCOPE AND COVERAGE :**

The study focused on the composting of different substrates using *Eudrilus euginae* (African Night Crawler). This study concentrated on the weight of both the compost and vermins and in the number of vermins produced. The study made use of three treatments

which were : a) 750 g rice straw + 250 g pig manure, b) 750 g sugar bagasse + 250 g pig manure, c) 750 g coconut coir + 250 g pig manure, with three replicates <sup>2/</sup>

#### METHODOLOGY :

There were <sup>3/</sup> two stages in the vermicomposting process: ~~(the first stage was)~~ the anaerobic and the ~~(second was the)~~ aerobic stage. <sup>3/</sup> *was performed;*

The first phase of the vermicomposting process was done by thoroughly mixing and watering the compost substrate. It was then placed in the containers which were lined at the bottom and sides with plastic sheets such as screen and blocks. This was done to step up the decomposition initiated by anaerobic bacteria. This stage lasted for 4 wks. When the temperature of the compost pile went down to ambient condition, the plastic cover was removed.

In the second phase of the vermicomposting process, live earthworms were stocked into the pile.

The vermicomposting unit was watered when necessary. This stage lasted for 5 wks.

<sup>4/</sup> When the substrate was fully composted, harvesting of the compost and vermins was done. <sup>4/</sup>

#### MAJOR FINDINGS :

Considering the data gathered and based on the results of the Analysis of Variance (ANOVA) and Duncan's Multiple Range Test (DMRT), it showed that there were significant differences in the effect of the treatments to the number of vermins. Treatment 3, which was the mixture of 750 g coconut coir + 250 g pig manure, produced more vermins followed by Treatment 2 (750 g sugar bagasse + 250 g pig manure).

**CONCLUSION :**

3/ From the data collected, it was concluded that a substrate composed of 75% rice straw + 25% pig manure was more efficient in producing the most vermicompost. But when it came to the vermin production, substrate composed of 75% coconut coir + 25% pig manure was more suitable. 3/

**RECOMMENDATION :**

Based on the findings, it is recommended that for vermicomposting, the use of 75% agricultural waste ( such as rice straw ) and 25% manure is eminently recommended. For vermiculture, with the intention of high vermin production, a mixture of 75% agricultural waste ( coconut coir ) and 25% pig manure is eminently recommended.

