



# Assessment of Nutrient Status in Vermicompost Prepared from Fruit Waste

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**Abstract:** The research work deals with the production of vermicompost from fruit waste by utilising three different species of earthworms, namely *Perionyx excavatus*, *Eudrilus eugeniae* and *Eisenia foetida*. Collected samples were washed with water, air-dried, weighed and mixed with cow dung slurry in the ratio 3:1 and pre composted for three weeks. Four sets of pots in total with three replicates each were taken, of which three sets were used for vermicomposting and the fourth set for composting only. The harvesting of vermicompost and compost were carried out on 60<sup>th</sup> day. Compound samples of the four sets of pots were processed for analysis of nitrogen, phosphorus, potassium, Iron, Copper, Zinc and Manganese. The macronutrients N,P and K were significantly increased in vermicompost of all the three types of earthworm when compared to the compost without earthworm and substrate. The amount of Copper, Zinc and Manganese decreased in vermicompost. The temperature gradually lowers as the composting process continued and ranged from 25.5 to 23.1°C. The pH gradually increased and value ranged from 6.1 to 7.3. The moisture content ranged from 60.2 to 65.1 per cent. Electric conductivity increases significantly in vermicompost than that of substrate. The growth parameters of the three earthworm species cultured in fruit waste showed that *Eudrilus eugeniae* giving the maximum length and weight followed by *Eisenia foetida* and *Perionyx excavatus*. The number of juveniles and adults increased in *E. foetida* and *P. excavatus*. The total length, weight and biomass of the three earthworm species increased at the end of the experiment. There was increased in growth parameters of the three species. The result indicates that more nutrients were present in vermicompost than the compost and substrate.

**Keywords:** Fruit waste, Vermicompost, *Eudrilus eugeniae*, *Eisenia foetida*, *Perionyx excavatus*

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