

**EFFECTS OF MOISTURE CONTENT ON  
QUALITY OF VERMICOMPOST AND SPECIFIC  
EARTHWORM (*Perionyx excavatus*) POPULATION**

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## ABSTRACT

Vermicomposting is an eco-friendly, socially sound and economically viable technology to manage the organic waste resources. It is valuable, because it is one of the cheapest solutions to overcome the dangerous effects of modernized agriculture. Even though vermicomposting is an age old process, due to the changes occurred in the technology in present scenario, it is advisable to modify the process with application of advanced techniques available. As the earthworms are best functioning in the aqueous medium, the moisture content plays a significant role in the vermicomposting process. Therefore, this study was conducted to evaluate the effect of moisture content on the quality of vermicompost and *Perionyx excavatus* earthworm population. Selected earthworms were cultured in a composting media containing cattle manure (10 kg), gliricidia (4.5 kg), grasses (4.5 kg) and banana stems (1 kg) with different moisture contents varying from  $50 \pm 5\%$ ,  $60 \pm 5\%$ ,  $70 \pm 5\%$ ,  $80 \pm 5\%$  and  $90 \pm 5\%$ . The control was done without incorporating the worms and each were replicated three times. Chemical analysis of vermicompost at  $80 \pm 5\%$  moisture content resulted the maximum level of N (0.634 %), P (0.66 %), K (0.414 %), Ca (4.73 %) and Mg (1.28 %). The level of C (9.27 %) and C/N ratio (14.67) were minimum in  $80 \pm 5\%$  moisture containing vermicompost processed by *Perionyx excavatus* in comparison to the other treatments. It is observed that  $80 \pm 5\%$  is the most suitable moisture content at which the highest worm population has recorded along with the high decomposition rates and high nutrient contents in the vermicompost with *Perionyx excavatus*.

**Keywords:** Vermicompost, *Perionyx excavatus*, Moisture content, Nutrient content, earthworm population