



## Effects of Cultural Practices on Mineral Composition of Cassava Peel Compost and its Effects on Growth of Cabbage (*Brassica oleracea* L.)

OLANIYI J.O. and AKANBI W.B.

Department of Agronomy, Faculty of Agricultural Sciences, Ladoké Akintola University of Technology, P.M.B 4000, Ogbomoso, Oyo State, Nigeria.

Corresponding author email: [olaniyikunle2005@yahoo.com](mailto:olaniyikunle2005@yahoo.com)

### ABSTRACT

*Objective:* In Nigeria, compost is increasingly becoming a suitable substitute for inorganic fertilizers to improve crop productivity. However, information on the ideal cultural practices that enhance the quality of composts is scanty. Experiments were therefore conducted to assess the mineral compositions of cassava peel compost, and to determine its effects on growth of cabbage.

*Methodology and results:* Cassava peel compost was prepared and subjected to three turning rates viz: 7, 14 and 21 days intervals and three similarly spaced watering regimes. Cabbage growing under field conditions was treated with the compost produced through the various turning and watering options. The nine treatment combinations were laid out in a factorial experiment and fitted into a randomized complete block design with three replicates. Temperature during

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composting, and the growth and yield attributes of cabbage were assessed. The temperature in the compost increased as the composting days increased up to 40 days, and then declined slightly thereafter. The temperatures and mineral elements of the cassava peel compost were significantly affected by turning and watering regimes. The highest temperature was in compost that was turned after 14 days and watered every 14 days. The highest mineral composition values were for compost that was turned after every 14 days and watered after 21 days, while compost that was turned and watered after every seven days had the least mineral composition. There were significant differences ( $P \leq 0.05$ ) in plant height and number of leaves of cabbage plants that were treated with compost produced under different turning and watering regimes. The tallest plants, as well as the highest shoot and head yields, were for plants that were treated with compost produced under 14 days turning and 21 days watering regimes.

*Conclusion and application of results:* The results demonstrate that cassava peel compost produced under 14 days turning and 21 days watering regimes had the best composition and effect on cabbage growth. These should therefore be recommended as the best conditions and management practices for preparing cassava peel compost.

*Key words:* Cassava peel, compost, turning rate, watering rate, cabbage, head yield.