

# **COMPOSTING EXPERIMENT AND ASSESSMENT OF COMPOSTING AS WASTE MANAGEMENT STRATEGY IN GA WEST MUNICIPALITY**

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## **ABSTRACT**

Municipal solid waste generation is increasing worldwide as a result of population growth and increasing urbanization. In Ghana, this has increased the burden of management on local government authorities and is presenting major environmental and sanitation challenges in urban centres. This study was conducted in the Ga-West Municipality of the Greater Accra Region of Ghana to assess the potential of composting as an effective waste management tool. To achieve this goal, windrow composting was carried out with market waste, fruit waste, sawdust, rice straw, and swine manure in four different combinations. Physical and chemical parameters such as temperature, pH, electrical conductivity, nitrogen, phosphorus, potassium, and heavy metal concentrations were monitored. Germination test with water extracts of the composts was used to assess phytotoxicity of the composts. Questionnaires were administered to a total of 384 youth, comprising 150 farmers and 234 non-farmers, to ascertain their experiences with composting and compost use, willingness to buy compost, willingness to go into composting as an income-generating venture, and willingness to purchase compost-grown crops. Results from the study showed that composting and compost use among farmers were virtually absent, and all farmers involved in the study were willing to buy compost at maximum prices ranging between GH¢ 20 and GH¢ 40 per 50kg bag of compost. Seventy-three per cent of the youth surveyed were willing to go into composting if they are trained on the composting process. All respondents were willing to purchase crops produced with compost, although 21% of them were not willing to pay any premium price for crops grown with compost. All the composts attained maturity within 120 days of processing, and had heavy metal concentrations below the Canadian Council of Ministers of the Environment standards. Germination indices, a measure of plant v supporting potential, ranged from 80% to 99% for *Solanum lycopersicum* (tomatoes), 170% to 198% for *Cucumis sativus* (cucumber), and 114% to 166% for *Brassica oleracea* var. *capitata* (cabbage). The findings of the study indicated that compost production, using municipal solid waste, holds great promise for enhancing sanitation and waste management system in the Ga-West Municipality.

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