

Agronomic effectiveness of water hyacinth-based composts

Abstract

Because water hyacinth-based compost contains substantial amounts of nitrogen (N), phosphorus (P) and potassium (K) its application can boost crop production. We evaluated the agronomic performance of water hyacinth - based composts using field experiments and five treatments which were; water hyacinth compost made using cattle manure (WH+CM), poultry manure (WH+PM), molasses (WH+MO), water hyacinth alone (WH alone) and the control. The composts were applied at two rates of 3 and 6 t ha⁻¹ using maize (LONGE 4) as a test crop. Grain yields of 6.8 t ha⁻¹ harvested in WH+CM applied at 6 t ha⁻¹ and 6.5 t ha⁻¹ harvested in WH+PM applied at 3 t ha⁻¹ were statistically similar, and were the highest in the experiment. The highest harvest index and agronomic nitrogen efficiency were obtained at 3 t ha⁻¹ from WH+PM (4.57) and WH+MO (42.6 kg kg⁻¹) respectively. Compost formulation WH+PM applied at 3 t ha⁻¹ was the most effective as measured in terms of grain yield and is recommended for application by farmers for good yields of maize crop.

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