Abstract

**Aims:** To evaluate the effects of water hyacinth compost prepared with various cultures on growth and yield parameters of maize.

**Study Design:** Randomized Complete Block Design.

**Place and Duration of Study:** Field experiments were carried out at Otonglo Division in Kisumu County and greenhouse trials were carried out at Kenyatta University from November 2011 to August 2012.

**Methodology:** The water hyacinth compost was prepared using effective microorganisms (EM) solution, cow manure and molasses separately as starter cultures for composting. The compost was applied on maize (H513) on separate growth pots in the greenhouse and plots in the field. The treatments applied included compost prepared with EM (8.84 g/pot), compost prepared with cow manure (8.84 g/pot), compost prepared with molasses (8.84g/pot), diammonium phosphate (DAP) fertilizer (70.7 mg N/pot) and control (without fertilizer). For the field experiments, water hyacinth compost was applied at a rate of 5000 kg ha\(^{-1}\) and DAP at 40 kg N/ha. The experiments had five treatments and three replications for each treatment in the greenhouse and four treatments replicated four times in three farmers’ fields.

**Results:** Application of water hyacinth compost and DAP significantly influenced positively (P ≤ 0.05) the growth attributes of maize. Among the various treatments of the compost, water hyacinth compost prepared with EM (WHE) performed better in most parameters evaluated including plant height, shoot dry weight, root dry weight and root collar diameter. Yield parameters such as 100 seed weight and grain yield were not significantly (p > 0.05) influenced by various treatments.

**Conclusion:** Water hyacinth which is locally available and in large quantities (especially in lake Victoria) can be composted to prepare organic fertilizers and effectively used as an organic soil amendment to restore soil and increase maize production.