Co-composting of municipal sewage sludge and landscaping waste : a pilot scale study

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Abstract

Compost with nutrient-rich organic matter can be produced from renewable biomass materials such as municipal sewage sludge, landscaping waste and others. In this study, co-composting of municipal sewage sludge and landscaping waste as a soil amendment using 10 m^3 pilot scale bioreactor system was tested. The temperature, oxygen level, moisture content and pH were monitored throughout the composting process. Proximate and ultimate analyses of the compost were determined for nutrient availability. The matured compost produced has nitrogen, phosphorus and potassium content of 3.01, 0.27 and 0.68 %, respectively, which made it suitable for the growth of ornamental plants. The Solvita® compost maturity kit gave an index result of 7, which indicated that the product was matured. Pathogenicity test of the compost confirmed that coliforms and Escherichia coli were eliminated within 15 days of composting at the thermophilic stage,making the compost safe to be used in the natural environment. © 2016 Springer Science+Business Media Dordrecht

Author keywords

Biofertiliser; Bioreactor composting; Compost; Landscaping waste; Municipal sewage sludge

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