

Investigation of vermicomposting feasibility of dewatered sludge and green wastes using a native earthworm in Ahvaz, Iran.

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Abstract

In this study vermicompost was produced from a green waste and dewatered sewage sludge collected from the west of Ahvaz municipal wastewater treatment plants with adjusted volumetric ratios and 30 local worms. Parameters including pH and moisture content were regularly determined every 3 days and parameters such as total and fecal coliforms, total carbon percent, and total nitrogen were determined twice at beginning and at the end of 23 days of composting time. All parameters were compared with standards. The maximum content of C/N ratio, total phosphorus, and total nitrogen were observed at the ratios of 3:1, 3:1 and 1:1 respectively (0.4%, 1.9%, and 23.02 %). The minimum content of total organic carbon and moisture were observed in ratios of 2; 1 and 1; 1. The initial pH was 6 in all vessels. The pH was 6.5, 7, 6.5 with the ratios of 1;1, 1;2, 1;3, respectively. The fecal coliform number was under the EPA limits for agricultural activities. It is suggested that the aerobic vermicomposting of dewatered sludge and green wastes is a simple and reliable operation with high compatibility in a local situation and may be used as a good soil fertilizer in agricultural lands.