

Cocomposting of Green Waste and Wastewater Dewatering Sludge of Wastewater Treatment Plant (Chonibieh) in West of Ahvaz- Iran

N. Jafarzadeh Haghghi fard^{1,2}, M. Abbasi^{2,3}, R. Alivar Babadi^{2,3}, H. Bahrani^{2,3},
A. Mirzaie² and M. Ravanbakhsh^{2,3*}

(Received: May. 20-2013 ; Accepted : June 25-2014)

Abstract

As there are some health and environmental concerns about wastewater, dewatered sludge, increase in green waste, and restricted legislation about burning them outdoors, environmental health engineers are investigating to find a simple, cost effective and efficient method. This is aimed to have healthy, safe and sustainable disposal of such materials. Co-composting of sludge and green waste is a newly developed process which can help us to achieve this goal. This study was to investigate the most suitable ratio of dewatered sludge to green waste from Chonibieh wastewater treatment plant in Ahvaz, Iran, and assess the feasibility of co-composting of this waste. So, dewatered sludge was composted with green waste as a bulking agent in three different ratios (1:1 ,2:1 ,3:1 : green waste: dewatered sludge W:W). Then composting proceeded in pilot vessels (M1, M2, M3) for 23 days. The C/N ratio, the percentage of total nitrogen, phosphorus, total organic carbon, humidity and pH were tested in certain periods and compared with the national standards. This study showed that in M1, M2, M3 pilots, all parameters (except for total phosphorus) including C/N ratio, percentage of total nitrogen and total organic carbon, humidity, pH could meet class 1 national standard in Iran. Moreover, this compost product could meet the EPA microbial standards, class A. So, the product of this compost process is completely stabilized and could be used in agricultural lands.

Keywords: Compost, Wastewater sludge, Green Waste, Ahvaz.

1. Environ. Technol. Rese. Center, Ahvaz Jundishapur Univ. of Medical Sci., Ahvaz, Iran.

2. Dept of the Environ. Health Eng. School of Public Health, Ahvaz Jundishapur Univ. of Medical Sci., Ahvaz, Iran.

3. Dept of the Environ. Health Eng. School of Public Health, Student Research Committee of Ahvaz Jundishapur Univ. of Medical Scs., Ahvaz, Iran.

*: Corresponding Author, Email:mapseh@gmail.com