

ABSTRAK

Biodrying bertujuan mengurangi kadar air dari sampah organik yang mengandung kadar air tinggi menggunakan panas yang dihasilkan selama proses degradasi dengan penambahan aerasi. Diperlukan pengaturan debit aerasi yang masuk untuk menghilangkan uap air dan mengontrol parameter proses seperti suhu dan ketersediaan oksigen. Substrat berupa sampah organik digunakan sebagai umpan dalam reaktor. Massa sampah berkaitan dengan banyaknya sampah yang akan diproses. Variasi massa sampah yang digunakan dalam penelitian ini sebesar 25,2 kg dan 42 kg. Sedangkan debit aerasi yang digunakan sebesar 6 liter/menit, 12 liter/menit, 18 liter/menit. Variasi massa sampah sebesar 25,2 kg dan debit aerasi 12 liter/menit merupakan variasi yang paling optimum menaikkan suhu, menurunkan volume, massa dan kadar air. Suhu tertinggi yang dicapai sebesar 54,5°C pada hari pertama, persentase penurunan massa, penurunan volume dan penurunan kadar air setelah 30 hari proses biodrying berturut-turut sebesar 55%; 62,32%; 19,03%.

Kata Kunci : Massa Sampah, Debit Aerasi, Biodrying

ABSTRACT

Biodrying aimed to reduce the high water content of organic waste using heat generated during the degradation process with the addition of aeration. Aeration discharge arrangement was needed to remove moisture and to control process parameters namely temperature and oxygen availability. Substrate in the form of organic waste used as feed in reactor. The mass of waste was related to the amount of waste that would be processed. The variations of waste mass used in this research were 25.2 kg and 42 kg. While the aeration discharges used were 6 litres/minute, 12 litres/minute, 18 litres/minute. Waste mass variation of 25.2 kg and aeration discharge of 12 litres/minute was the most optimum variation in raising temperature, decreased volume, mass and water content. The highest temperature reached was 54,5°C on the first day, the percentage of total mass decreased, volume decreased and moisture content decreased after 30 days biodrying process were 55%; 62,32%; 19,03% respectively.

Keywords: Solid Waste Mass, Aeration Discharge, Biodrying