MANAGEMENT OF ORGANIC WASTE INTO COMPOST USING THE OPEN BIN METHOD AT BRAMA MUDA *INTEGRATED WASTE MANAGEMENT FACILITY*

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ABSTRACT

Background: *TPS3R Brama Muda receives 450 - 600 kg of organic waste every day. If the waste doesn't get handled immediately, it will cause many negative impacts. To utilize the organic waste, it can be composted using an effective and efficient method known as the open bin method.*

Objective: *The research aims to understand the process of organic waste into compost using the Open Bin system at TPS3R Brama Muda.*

Method: *The type of this research is descriptive quantitative. Composting was carried out using 3 bins with weights of 15.3 kg; 15.3 kg; 15.45 kg, followed by physical measurements (temperature, humidity, odor, color) over a 46-day composting period. Next, the final compost results were tested for Nitrogen, Phosphorus, and Potassium content according to SNI 19-7030-2004.*

Results: *The research results show that composting in the three bins was carried out for 46 days, with 30 days of composting and 16 days of maturation. The total N content was 2.55%; the total P content was 3.48%; the total K content was 2.92%; the final temperature in each bin was 28.2°C; 28°C; 28.4°C; the pH in the bins was 7; the humidity in the three bins was normal; and the weight reduction of the material in the three bins was more than 80% of the initial weight.*

Conclusion: *The three bins have achieved the standards for good compost maturity according to SNI 19-7030-2004 specifications for compost from domestic organic waste.*

Keywords: *Composting, NPK, and open bin*

PENGOLAHAN SAMPAH ORGANIK MENJADI KOMPOS DENGAN METODE *OPEN BIN* DI TPS3R BRAMA MUDA

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ABSTRAK

Latar Belakang : TPS3R Brama Muda menerima 450 - 600 kg sampah organik setiap harinya. Sampah tersebut apabila tidak segera dilakukan pengelolaan maka akan menimbulkan banyak dampak negatif. Untuk memanfaatkan sampah organik tersebut dapat dilakukan menggunakan pengomposan dengan metode yang efektif dan efisien yakni metode *open bin.*

Tujuan : Penelitian bertujuan untuk mengetahui proses pengolahan sampah organik menjadi kompos dengan menggunakan sistem *Open Bin* di TPS3R Brama Muda.

Metode : Jenis penelitian ini adalah deskriptif kuantitatif. Pengomposan dilakukan menggunakan 3 bak dengan berat 15,3 kg; 15,3 kg; 15,45 kg kemudian dilakukan pengukuran secara fisik (suhu, kelembaban, bau, warna) selama 46 hari masa pengomposan. Selanjutnya hasil akhir kompos diuji kandungan Nitrogen, Phospor, dan Kalium sesuai dengan SNI 19-7030-2004.

Hasil : Hasil penelitian menunjukkan bahwa pengomposan pada ketiga bak dilakukan selama 46 hari dengan 30 hari masa pengomposan dan 16 hari masa pematangan. Besarnya kandungan N-total sebesar 2,55%; kandungan P-total sebesar 3,48%; kandungan K-total sebesar 2,92%; suhu akhir pada masing-masing bak sebesar 28,2^{0}C; 28^{0}C; 28,4^{0}C; pH pada bak sebesar 7; kelembaban pada ketiga bak normal; dan besar penurunan berat bahan pada ketiga bak lebih dari 80% dari berat awal.

Kesimpulan : Ketiga bak telah memenuhi standar kematangan kompos yang baik sesuai SNI 19-7030-2004 spesifikasi kompos dari sampah organik domestik.

Kata kunci : Pengomposan, NPK, dan *open bin*