

CHARACTERIZATION OF TRADITIONAL MARKET ORGANIC WASTE COMPOST WITH EM4 BIOACTIVATORS AND VARIOUS ANIMAL MANURES

ABSTRACT

Organic waste is a type of waste that comes from leftover organic materials such as food scraps, leaf scraps, and other natural materials that are easily decomposed by microorganisms. This research aims to determine the physical and chemical properties of composting variables Temperature, pH, water content, C-organic, Nitrogen (N), Phosphorus (P), Potassium (K) and C/N ratio of organic waste with the addition of EM4 bioactivator and manure cattle, goats and chickens based on compost quality standards according to SNI 19-7030-2004. This research was carried out in November 2023 – January 2024 using experimental research methods. Chemical variables in organic waste compost were analyzed at the UIN Raden Fatah Palembang Laboratory and the PT Laboratory. Binasawit Makmur. The results of this research show that the temperature of the composting process increased on day 14 and decreased on day 21. The average final temperature of compost P0, P1, and P3 was 30°C while P2 was 31°C. The pH of the compost increased on day 6 and decreased on day 21, at the end of the composting process (day 30) the pH returned to neutral. Average compost pH (30th day) P0 7, P1 6.8 P2 7.2 and P3 6.8. All market organic waste compost test variables with EM4 bioactivator and various animal waste meet compost quality standards according to SNI 19-7030-2004, except c-organic and c/n ratio in P3.

Keywords: Garbage, EM4, Animal Manure, Compost.

**KARAKTERISASI KOMPOS SAMPAH ORGANIK PASAR
TRADISIONAL DENGAN BIOAKTIVATOR EM4 DAN BERBAGAI
KOTORAN HEWAN**

ABSTRAK

Sampah organik adalah jenis sampah yang berasal dari sisa-sisa bahan organik seperti sisa makanan, potongan daun, dan bahan-bahan alami lainnya yang mudah terurai oleh mikroorganisme. Penelitian ini bertujuan untuk mengetahui sifat fisik dan kimia composting variabel Suhu, pH, kadar air, C-organik, Nitrogen (N), Fosfor (P), Kalium (K) dan C/N rasio dari sampah organik dengan penambahan bioaktivator EM4 dan kotoran hewan sapi, kambing dan ayam berdasarkan standar kualitas kompos menurut SNI 19-7030-2004. Penelitian ini dilaksanakan bulan November 2023 – Januari 2024 dengan metode penelitian eksperimen. Variabel kimia pada kompos sampah organik dianalisis di Laboratorium UIN Raden Fatah Palembang dan Laboratorium PT. Binasawit Makmur. Hasil penelitian ini menunjukkan bahwa suhu proses pengomposan meningkat pada hari ke 14 dan menurun di hari ke 21. Rerata suhu akhir kompos P0, P1, dan P3 yaitu 30°C sedangkan P2 31°C. Pada pH kompos terjadi kenaikan pada hari ke 6 dan menurun pada hari ke 21, pada akhir proses pengomposan (hari ke 30) pH kembali netral. Rerata pH kompos (hari ke 30) P0 7, P1 6,8 P2 7,2 dan P3 6,8. Seluruh variabel uji kompos sampah organik pasar dengan bioaktivator EM4 dan berbagai kotoran hewan memenuhi standar kualitas kompos menurut SNI 19-7030-2004, kecuali c-organik dan c/n rasio pada P3.

Kata kunci : Sampah, EM4, Kotoran Hewan, Kompos.