

ABSTRACT

UTILIZATION OF VEGETABLE WASTE INTO LIQUID ORGANIC FERTILIZER WITH THE ADDITION OF EM4 BIOACTIVATOR

Mhd Qurnia Ilahi Nasution¹, Rina Fauziah², Jessy Novita Sari³

xiii + 54 pages + 5 tables + 3 appendices

¹ Environmental Sanitation Student

² Primary Supervisor

³ Assistant Supervisor

The problem of organic waste, particularly vegetable waste, remains an environmental issue that has not been optimally addressed. Yet, vegetable waste contains nutrients that have the potential to be recycled into useful products such as fertilizer. This study aims to utilize vegetable waste into liquid organic fertilizer (POC) by adding 60 ml/liter of EM4 bioactivator, and to compare the effectiveness of cabbage and Chinese cabbage waste in the fermentation process.

The research method used was an experiment with a post-test only control group design. Observations were made on changes in pH, color, aroma, and the presence of white spots during the 21day fermentation process.

The results showed that Chinese cabbage waste produced POC with an average pH of 6,22, higher than cabbage, which only achieved an average pH of 3,46. Furthermore, the physical appearance of the Chinese cabbage waste showed changes in color and aroma that were more in line with indicators of fermentation success.

The study concluded that Chinese cabbage waste was more effective and optimal than cabbage waste in producing liquid organic fertilizer that met quality standards. The optimal fermentation time was found to be day 21.

Keywords : Vegetable waste, liquid organic fertilizer, EM4, fermentation, cabbage, white mustard greens.

Reading List: 29 (2006 – 2025)



Cicyn Riantoni

Translator and Proofreader

ABSTRAK

PEMANFAATAN LIMBAH SAYURAN MENJADI PUPUK ORGANIK CAIR DENGAN PENAMBAHAN BIOAKTIVATOR EM4

Mhd Qurnia Ilahi Nasution¹, Rina Fauziah², Jessy Novita Sari³

xiii + 54 halaman + 5 tabel + 3 lampiran

¹ Mahasiswa Prodi Sanitasi Lingkungan

² Pembimbing Utama

³ Pembimbing Pendamping

Permasalahan sampah organik, khususnya limbah sayuran, masih menjadi isu lingkungan yang belum tertangani secara optimal. Padahal limbah sayuran memiliki kandungan zat gizi yang berpotensi dimanfaatkan kembali menjadi produk bermanfaat seperti pupuk. Penelitian ini bertujuan untuk memanfaatkan limbah sayuran menjadi pupuk organik cair (POC) dengan penambahan bioaktivator EM4 sebanyak 60ml/liter, serta membandingkan efektivitas antara limbah sayur kol dan sawi putih dalam proses fermentasi.

Metode penelitian yang digunakan adalah eksperimen dengan desain post-test only control group design. Pengamatan dilakukan terhadap perubahan pH, warna, aroma dan keberadaan bercak putih dalam proses fermentasi selama 21 hari.

Hasil penelitian menunjukkan bahwa limbah sayur sawi putih menghasilkan POC dengan pH akhir sebesar 6,22, lebih tinggi dibandingkan kol yang hanya mencapai pH akhir 3,46. Selain itu, secara fisik limbah sayur sawi putih menunjukkan perubahan warna, aroma dan bercak putih yang lebih sesuai dengan indikator keberhasilan fermentasi.

Hasil penelitian dapat disimpulkan bahwa limbah sayur sawi putih lebih efektif dan optimal dibandingkan limbah sayur kol dalam menghasilkan pupuk organik cair yang memenuhi standar mutu. Waktu optimal fermentasi ditemukan pada hari ke 21.

Kata kunci: Limbah sayuran, pupuk organik cair, EM4, fermentasi, kol, sawi putih.

Daftar Bacaan: 29 (2006 – 2025)