

PENGARUH VARIASI KONSENTRASI MIKROORGANISME LOKAL (MOL) KULIT PISANG TERHADAP LAMA WAKTU DAN KADAR KALIUM (K) KOMPOS

Viviana Kurnianingsih¹, Adib Suyanto², Sri Puji Ganefati³, Sri Haryanti⁴
^{1,2,3,4} Jurusan Kesehatan Lingkungan Poltekkes Kemenkes Yogyakarta
Jl. Tatabumi No. 3 Banyuraden, Gamping, Sleman
email: vivianakurnianingsih8@gmail.com

INTISARI

Latar Belakang: Salah satu upaya pengelolaan sampah organik adalah dengan pengomposan. Proses pengomposan dapat dipercepat dengan menambahkan Mikroorganisme Lokal (MOL) dengan bahan baku sampah kulit pisang. Kulit pisang mengandung kalium tinggi sehingga dapat dimanfaatkan sebagai sumber nutrisi bagi bakteri untuk mendukung aktivitasnya sebagai agen dekomposer.

Tujuan: Mengetahui pengaruh variasi konsentrasi 0%, 20%, 25%, 30%, 35%, dan 40% MOL kulit pisang terhadap lama waktu dan kadar kalium kompos.

Metode: Metode penelitian ini adalah *Quasy Experiment* dengan menggunakan rancangan *Post Test Only Design*. Penelitian ini dilaksanakan pada bulan Januari – Maret 2026. Analisis data dilakukan menggunakan uji *One Way Anova*.

Hasil: Rata-rata lama waktu terbentuknya kompos penambahan MOL kulit pisang konsentrasi 20% adalah 35 hari, konsentrasi 25% adalah 34 hari, konsentrasi 30% adalah 32 hari, konsentrasi 35% adalah 30 hari, konsentrasi 40% adalah 28 hari, dan kontrol adalah 38 hari. Rata-rata kadar kalium kompos penambahan MOL kulit pisang konsentrasi 20% adalah 3,0569%, konsentrasi 25% adalah 2,5919%, konsentrasi 30% adalah 2,7068%, konsentrasi 35% adalah 2,3720%, dan konsentrasi 40% adalah 2,6289%, dan kontrol adalah 3,5672%. Berdasarkan hasil uji *One Way Anova* didapatkan nilai Sig. 0,000 pada variabel lama waktu terbentuknya kompos dan kadar kalium kompos yang artinya ada pengaruh variasi konsentrasi MOL kulit pisang terhadap lama waktu dan kadar kalium kompos.

Kesimpulan: Ada pengaruh variasi konsentrasi MOL kulit pisang terhadap lama waktu dan kadar kalium kompos.

Kata Kunci: MOL, kompos, kalium

**THE EFFECT OF VARYING CONCENTRATIONS OF LOCAL
MICROORGANISMS (MOL) FROM BANANA PEELS ON THE
COMPOSTING TIME AND POTASSIUM (K) CONTENT**

Viviana Kurnianingsih¹, Adib Suyanto², Sri Puji Ganefati³, Sri Haryanti⁴
^{1,2,3,4} Department of Environmental Health Poltekkes Kemenkes Yogyakarta
Jl. Tatabumi No. 3 Banyuraden, Gamping, Sleman
email: vivianakurnianingsih8@gmail.com

ABSTRACT

Background: One method of managing organic waste is composting. The composting process can be accelerated by adding Local Microorganisms (MOL) to banana peel waste. Banana peels are high in potassium, making them a valuable source of nutrients for bacteria to support their activity as decomposers.

Objective: To determine the effect of varying concentrations of 0%, 20%, 25%, 30%, 35%, and 40% MOL banana peel on the processing time and potassium content of the compost.

Method: The research method used was a quasi-experimental study employing a post-test-only design. The study was conducted from January to March 2026. Data analysis was performed using a one-way ANOVA.

Results: The average time required for the formation of compost with added banana peel MOL supplemented samples was 35 days at a 20% concentration, 34 days at a 25% concentration, 32 days at a 30% concentration, 30 days at a 35% concentration, 28 days at a 40% concentration, and 38 days for the control. The average potassium content of the compost with added banana peel MOL at a 20% concentration was 3.0569%, at a 25% concentration was 2.5919%, at a 30% concentration was 2.7068%, at a 35% concentration was 2.3720%, at a 40% concentration it was 2.6289%, and for the control it was 3.5672%. Based on the results of the One-Way ANOVA test, a Sig. value of 0.000 was obtained for the variables of compost formation time and compost potassium content, indicating that variations in the concentration of banana peel MOL and the control had an effect on the formation time and potassium content of the compost.

Conclusion: There is an effect of variations in the concentration of banana peel MOL on the duration and potassium content of the compost.

Keywords: MOL, compost, potassium