

PENGOLAHAN SAMPAH PASAR INDUK BUAH DAN SAYUR GEMAH RIPAH MENJADI PUPUK ORGANIK CAIR DENGAN PENAMBAHAN KOTORAN AYAM

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INTISARI

Latar Belakang: Sampah organik buah dan sayur yang tidak dikelola dapat menimbulkan pencemaran lingkungan. Salah satu upaya pemanfaatannya yaitu menjadi pupuk organik cair (POC). Penambahan kotoran ayam yang mengandung unsur hara makro berpotensi meningkatkan kandungan nitrogen (N), fosfor (P), dan kalium (K) pada POC Pasar Induk Buah dan Sayur Gemah Ripah.

Tujuan: Mengetahui kualitas POC hasil pengolahan sampah Pasar Induk Buah dan Sayur Gemah Ripah dengan penambahan kotoran ayam.

Metode: Penelitian *Quasi Experiment* dengan *Post-test Only with Control Group Design*. Fermentasi anaerob selama 21 hari dengan variasi perlakuan penambahan kotoran ayam 15%, 30%, dan 45%, serta kontrol. Parameter yang diuji yaitu kadar NPK. Data dianalisis menggunakan uji *One-Way* ANOVA dan uji Regresi Linear Sederhana.

Hasil: Perlakuan dengan penambahan kotoran ayam 45% menghasilkan kadar NPK tertinggi sebesar 0,273%, diikuti oleh perlakuan 30% sebesar 0,228%, dan 15% sebesar 0,200%. Hasil uji *One-Way* ANOVA menunjukkan variasi penambahan kotoran ayam berpengaruh signifikan terhadap kadar fosfor ($p=0,000$), tetapi tidak berpengaruh signifikan terhadap kadar nitrogen ($p=0,098$) dan kalium ($p=0,115$). Berdasarkan uji regresi linear sederhana untuk mencapai kadar NPK sesuai standar (2-6%) perlu ditingkatkan fermentasi kotoran ayam 58,13%.

Kesimpulan: Seluruh perlakuan menghasilkan kadar total NPK yang masih berada di bawah standar mutu pupuk organik cair sebesar 2-6%.

Kata Kunci: Pupuk Organik Cair, Kotoran Ayam, NPK, Sampah Organik

PROCESSING OF WASTE FROM THE GEMAH RIPAH FRUIT AND VEGETABLE WHOLESALE MARKET INTO LIQUID ORGANIC FERTILIZER WITH THE ADDITION OF CHICKEN MANURE

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ABSTRACT

Background: Unmanaged organic fruit and vegetable waste can cause environmental pollution. One way to utilize this waste is by turning it into liquid organic fertilizer (LOF). The addition of chicken manure, which contains macronutrients, has the potential to increase the nitrogen (N), phosphorus (P), and potassium (K) content in the POC produced at the Gemah Ripah Central Fruit and Vegetable Market.

Objective: Determining the quality of LOF produced from the processing of waste from the Gemah Ripah Central Fruit and Vegetable Market with the addition of chicken manure.

Methods: A quasi-experimental study using a post-test-only design with a control group. Anaerobic fermentation was conducted for 21 days with treatment variations involving the addition of 15%, 30%, and 45% chicken manure, as well as a control group. The parameter tested was the NPK content. The data were analyzed using One-Way ANOVA and simple linear regression.

Results: The treatment with 45% chicken manure resulted in the highest NPK content of 0.273%, followed by the 30% treatment at 0.228% and the 15% treatment at 0.200%. The results of the one-way ANOVA test showed that variations in chicken manure addition had a significant effect on phosphorus content ($p=0.000$), but no significant effect on nitrogen ($p=0.098$) or potassium ($p=0.115$) content. Based on a simple linear regression analysis, to achieve NPK levels in accordance with the standard (2–6%), chicken manure fermentation needs to be increased by 58,13%.

Conclusion: All treatments resulted in total NPK levels that remained below the required quality standard of 2–6% for liquid organic fertilizer.

Keywords: Liquid Organic Fertilizer, Chicken Manure, NPK, Organic Waste