

**ADDITION OF BACTERIAL STARTER AND LONG FERMENTATION
OF LIQUID DIAPERS ORGANIC FERTILIZER ON CONTENT
MACRO NUTRITIONAL ELEMENTS**

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ABSTRACT

The number of babies born and the number of toddlers increases every year, this phenomenon increases the use of diapers. The generation of diaper waste can cause environmental problems if proper processing is not carried out. Efforts to overcome the problem of diaper waste generation can be done by using diapers as material for making liquid organic fertilizer. The aim of this research was to identify differences in the addition of starter bacteria and the fermentation time of diaper liquid organic fertilizer on Nitrogen and Potassium content.

This type of research is a quasi-experimental posttest only control group design. The object of research is the hydrogel in the inner layer of diapers. The independent variable was the fermentation time (12, 15, 18, and 21 days), the dependent variable was the nitrogen and potassium content and was replicated 6 times. Data analysis used the One Way ANOVA test.

The results showed that the average nitrogen content in the fermentation period was 12 days (0.34%), the fermentation period was 15 days (0.43%), the fermentation period was 18 days (0.53%), the fermentation period was 21 days (0.64%) . The minimum nitrogen content in the fermentation period was 12 days (0.32%) while the maximum content was in the fermentation period of 21 days (0.66%). The average potassium content for fermentation time was 12 days (0.27%), fermentation time was 15 days (0.36%), fermentation time was 18 days (0.43%), fermentation time was 21 days (0.54%). The minimum potassium content in the fermentation period was 12 days (0.25%) while the maximum content was in the fermentation period 21 (0.56%).

It was concluded that there were differences in the addition of bacterial starter and the fermentation time of 12, 15, 18, 21 days on the Nitrogen and Potassium content. Suggestions for future researchers are to carry out acclimatization of the bacterial starter and pay attention to temperature, pH, and carry out sampling techniques based on SNI.

Keywords: Diapers, Hydrogel, Liquid Fertilizer, Nitrogen (N), Potassium (K)

**PENAMBAHAN STARTER BAKTERI DAN LAMA FERMENTASI
PUPUK ORGANIK CAIR DIAPERS TERHADAP KANDUNGAN
UNSUR HARA MAKRO**

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ABSTRAK

Angka bayi lahir dan jumlah balita setiap tahun mengalami peningkatan fenomena tersebut menambah penggunaan diapers. Timbulan sampah diapers dapat menyebabkan permasalahan lingkungan apabila tidak dilakukan pengolahan yang tepat. Upaya mengatasi permasalahan timbulan sampah diapers dapat dilakukan dengan menggunakan diapers sebagai bahan pembuatan pupuk organik cair. Tujuan penelitian ini mengidentifikasi perbedaan penambahan starter bakteri dan lama fermentasi pupuk organik cair diapers terhadap kandungan Nitrogen dan Kalium.

Jenis penelitian ini adalah eksperimen semu desain *posttest only control group design*. Objek penelitian adalah hidrogel pada lapisan dalam diapers. Variabel bebas adalah lama fermentasi (12, 15, 18, dan 21 hari), variabel terikat adalah kandungan Nitrogen dan Kalium dan dilakukan replikasi sebanyak 6 kali. Analisis data menggunakan uji One Way ANOVA.

Hasil penelitian menunjukkan rerata kandungan nitrogen pada lama fermentasi 12 hari (0,34%), lama fermentasi 15 hari (0,43%), lama fermentasi 18 hari (0,53%), lama fermentasi 21 hari (0,64%). Kandungan Nitrogen minimal pada perlakuan lama fermentasi 12 hari (0,32%) sedangkan kandungan maksimal pada lama fermentasi 21 hari (0,66%). Rerata kandungan Kalium pada lama fermentasi 12 hari (0,27%), lama fermentasi 15 hari (0,36%), lama fermentasi 18 hari (0,43%), lama fermentasi 21 hari (0,54%). Kandungan Kalium minimal pada perlakuan lama fermentasi 12 hari (0,25%) sedangkan kandungan maksimal pada lama fermentasi 21 (0,56%).

Disimpulkan terdapat perbedaan penambahan starter bakteri dan lama fermentasi 12, 15, 18, 21 hari terhadap kandungan Nitrogen dan Kalium. Saran bagi peneliti berikutnya melakukan aklimatisasi pada starter bakteri dan memperhatikan suhu, ph, melakukan teknik pengambilan sampel berdasarkan SNI.

Kata Kunci : Diapers, Hidrogel, Pupuk Cair, Nitrogen (N), Kalium (K)

