

**PENGARUH SUBSTITUSI SERABUT KELAPA (COCOPEAT) PADA  
PUPUK ORGANIK BERBAHAN DASAR FESES SAPI PERAH  
TERHADAP KUALITAS DAN APLIKASI PADA TANAMAN**

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**INTISARI**

Penelitian ini bertujuan untuk mengetahui pengaruh substitusi *cocopeat* terhadap kualitas fisik, kimia, dan biologis pupuk organik kompos feses sapi perah pada berbagai level *cocopeat* yang berbeda. Penelitian terdiri dari lima perlakuan, yaitu perlakuan pertama 0%(T<sub>0</sub>) sebagai kontrol, perlakuan kedua 5%(T<sub>1</sub>), perlakuan ketiga 10%(T<sub>2</sub>), perlakuan keempat 15%(T<sub>3</sub>), dan perlakuan kelima 20%(T<sub>4</sub>) level substitusi *cocopeat*. Parameter yang diamati meliputi kualitas fisik yaitu suhu, pH, warna, bau, dan tekstur kompos. Kualitas kimia terdiri dari kadar air, kadar abu, bahan organik, C-organik, C/N rasio, N total, P total, dan K total pupuk organik kompos. Kualitas biologi terdiri dari jumlah daun, panjang akar, tinggi, dan berat panen kangkung. Data yang diperoleh diuji statistik dengan analisis variansi rancangan acak lengkap pola searah dan apabila menunjukkan perbedaan dilanjutkan dengan uji beda *Duncan's New Multiple Range Test* (DMRT). Hasil penelitian menunjukkan penambahan *cocopeat* pada T<sub>1</sub>, T<sub>2</sub>, T<sub>3</sub>, dan T<sub>4</sub> berpengaruh yang nyata (P<0,05) dengan kontrol T<sub>0</sub> terhadap kandungan abu, kadar air, C-organik, bahan organik, N total, C/N, P total, dan K total pupuk kompos. Perlakuan T<sub>1</sub>, T<sub>2</sub>, T<sub>3</sub>, T<sub>4</sub> tidak berpengaruh yang berbeda nyata (P>0,05) dengan kontrol (T<sub>0</sub>) terhadap jumlah daun dan panjang akar kangkung. Perlakuan T<sub>2</sub>, T<sub>3</sub>, dan T<sub>4</sub> berpengaruh yang berbeda nyata (P<0,05) dengan kontrol (T<sub>0</sub>) terhadap tinggi tanaman dan berat panen kangkung. Kesimpulan penelitian ini, level penambahan *cocopeat* pada perlakuan 20% (T<sub>4</sub>) memberikan hasil yang lebih baik pada peningkatkan kualitas kimia dan biologi.

Kata kunci : Pupuk organik kompos, Feses sapi perah, *Cocopeat*, Kualitas pupuk kompos

## **THE EFFECT OF COCONUT FIBER WASTE (COCOPEAT) SUBSTITUTION TO COMPOST FERTILIZER QUALITY FROM DAIRY COWS FECES MATERIAL AND APPLICATION IN PLANT**

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### **ABSTRACT**

This research aims to know the effect of the substitution of cocopeat to physical, chemistry, and biological quality of dairy cows feces compost fertilizers on variety of different substitution level of cocopeat. This study consists of five treatments, namely the first treatment 0%(T<sub>0</sub>) cocopeat substitution as control, the second treatment 5%(T<sub>1</sub>), the third treatment 10%(T<sub>2</sub>), the fourth treatment 15%(T<sub>3</sub>), and fifth treatment 20%(T<sub>4</sub>). Parameters observed covering the quality of physical are temperature, pH, color, smell, and texture compost. The chemical quality are water content, ash content, organic matter, C-organic, N in total, C/N ratio, P in total, and K in total. The quality of biology which consists of the amount of water spinach leaf, water spinach long roots, water spinach height, and water spinach harvest weight. The data were tested analysis mean differences were analyzed with Duncan's New Multiple Range Test (DMRT). The research results showed that the addition of cocopeat on T<sub>1</sub>, T<sub>2</sub>, T<sub>3</sub>, and T<sub>4</sub> significantly different (  $P < 0,05$ ) to control (T<sub>0</sub>) against ash content, water content, C-organic content, organic matter content, N in total, C/N ratio, P, and K in total. Treatment T<sub>1</sub>, T<sub>2</sub>, T<sub>3</sub>, and T<sub>4</sub> do not significantly different ( $P > 0,05$ ) to control (T<sub>0</sub>) against the number of water spinach leaves and long roots. Treatment T<sub>2</sub>, T<sub>3</sub>, T<sub>4</sub> significantly different ( $P < 0,05$ ) to control (T<sub>0</sub>) against water spinach height and harvest weight. It can be concluded the substitution level of cocopeat that better improve the quality of chemistry and biology in treatment T<sub>4</sub> (20%)

**Keywords :** Organic compost fertilizer, Dairy cows feces, Cocopeat, compost quality