

**PENGGUNAAN DEKOMPOSER RIZOSFER BAMBU
(DE-RIZOBA) TERHADAP CIRI KIMIA DAN KUALITAS
KOMPOS BERBAHAN TONGKOL JAGUNG, TITHONIA
DAN PUPUK KANDANG AYAM**

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PENGUNAAN DEKOMPOSER RIZOSFER BAMBU (DE-RIZOBA) TERHADAP CIRI KIMIA DAN KUALITAS KOMPOS BERBAHAN TONGKOL JAGUNG, TITHONIA DAN PUPUK KANDANG AYAM

ABSTRAK

Limbah tongkol jagung merupakan limbah pertanian yang berpotensi dimanfaatkan sebagai bahan baku kompos, namun kandungan lignoselulosa dan rasio C/N yang tinggi menyebabkan proses dekomposisinya berlangsung lambat. Penelitian ini bertujuan untuk mengetahui pengaruh penggunaan dekomposer rizosfer bambu (De-Rizoba) terhadap ciri kimia dan kualitas kompos berbahan tongkol jagung, *Tithonia diversifolia*, dan pupuk kandang ayam. Penelitian menggunakan Rancangan Acak Lengkap (RAL) dengan lima taraf dosis De-Rizoba, yaitu 0, 20, 40, 60, dan 80 mL per 5 kg bahan kompos, masing-masing tiga ulangan sehingga diperoleh 15 satuan percobaan. Parameter yang diamati meliputi kadar air, pH, C-organik, N-total, rasio C/N, P_2O_5 , K_2O , dan karakteristik fisik kompos. Hasil penelitian menunjukkan bahwa penggunaan De-Rizoba menghasilkan kompos matang dalam waktu 12 minggu dengan ciri berwarna coklat kehitaman, bertekstur remah, tidak berbau, dan bersuhu mendekati suhu lingkungan. Pemberian De-Rizoba meningkatkan kualitas kimia kompos melalui peningkatan pH 6.84, N-total 3.15%, P_2O_5 0.031%, dan K_2O 0.07% , total hara makro ($N + P_2O_5 + K_2O$) 3.25% serta menurunkan rasio C/N 3.58. Dosis 60 ml De-Rizoba per 5 kg bahan kompos memberikan hasil terbaik. Secara umum, kompos yang dihasilkan memenuhi persyaratan mutu pupuk organik.

Kata kunci: De-Rizoba, rizosfer bambu, tongkol jagung, kompos, kualitas kompos.



**APPLICATION OF BAMBOO RHIZOSPHERE DECOMPOSER
(DE-RIZOBA) ON THE CHEMICAL CHARACTERISTICS
AND QUALITY OF COMPOST MADE FROM CORN COBS,
TITHONIA DIVERSIFOLIA, AND CHICKEN MANURE**
ABSTRACT

Corn cob waste is an agricultural by-product with considerable potential for use as a raw material in compost production. However, its high lignocellulosic content and high C/N ratio result in a slow decomposition process. This study aimed to evaluate the effect of a bamboo rhizosphere-based decomposer (De-Rizoba) on the chemical characteristics and quality of compost produced from corn cobs, *Tithonia diversifolia*, and chicken manure. The experiment was arranged in a Completely Randomized Design (CRD) consisting of five De-Rizoba application rates: 0, 20, 40, 60, and 80 mL per 5 kg of composting materials, with three replications, resulting in a total of 15 experimental units. The observed parameters included moisture content, pH, organic carbon, total nitrogen, C/N ratio, P₂O₅, K₂O, and the physical characteristics of the compost. The results showed that the application of De-Rizoba produced mature compost within 12 weeks, characterized by a dark brown to black color, crumbly texture, absence of unpleasant odor, and a temperature close to the ambient temperature. De-Rizoba application improved the chemical quality of the compost by increasing the pH to 6.84, total nitrogen to 3.15%, P₂O₅ to 0.031%, K₂O to 0.07%, and the total macronutrient content (N + P₂O₅ + K₂O) to 3.25%, while reducing the C/N ratio to 3.58. The application of 60 mL De-Rizoba per 5 kg of composting materials produced the best results. Overall, the compost produced met the quality requirements for organic fertilizer.

Keywords: bamboo rhizosphere, compost, corn cob waste, De-Rizoba, *Tithonia diversifolia*, organic fertilizer.