

**PENGARUH PUPUK KANDANG TERHADAP POPULASI
BAKTERI AMONIFIKASI DAN KADAR AMONIUM DI BAWAH
TEGAKAN *Acacia auriculiformis* A.Cunn. ex Benth. UMUR 9 BULAN
DI GUNUNGKIDUL**

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INTISARI

Kesuburan tanah merupakan salah satu faktor penting dalam keberlanjutan pertumbuhan tanaman, yang dapat dipengaruhi oleh kandungan bahan organik dan aktivitas mikroorganisme tanah. Salah satu indikator kesuburan tanah adalah keberadaan bakteri amonifikasi dan kadar amonium (NH_4^+). Bakteri amonifikasi berperan dalam proses dekomposisi bahan organik menjadi senyawa amonium yang dapat dimanfaatkan oleh tanaman. Penelitian ini bertujuan untuk menganalisis pengaruh pemberian pupuk kandang terhadap populasi bakteri amonifikasi dan kadar amonium di bawah tegakan formis umur 9 bulan pada tiga kedalaman tanah.

Penelitian dilakukan pada bulan Desember 2024 hingga Maret 2025. Dosis pupuk kandang sapi yang digunakan 0 kg, 1 kg, 2 kg dan 3 kg. Sampel tanah diambil pada tegakan formis pada 3 kedalaman yaitu 0-10 cm, 10-20 cm, dan 20-30 cm. Penghitungan populasi bakteri amonifikasi dengan metode MPN dan kadar amonium tanah dengan spektrofotometer UV-Vis yang dilakukan di Laboratorium Fisiologi Pohon dan Tanah Hutan, Fakultas Kehutanan, Universitas Gadjah Mada.

Hasil penelitian menunjukkan pupuk kandang tidak memberikan pengaruh yang signifikan terhadap populasi bakteri amonifikasi dan kadar amonium tanah. Dosis 0 kg dan 1 kg menunjukkan populasi bakteri amonifikasi dan kadar amonium tanah yang lebih tinggi dari dosis 2 kg dan 3 kg. Populasi bakteri amonifikasi dan kadar amonium tanah menurun seiring dengan bertambahnya kedalaman tanah.

Kata Kunci: Pupuk kandang, *Acacia auriculiformis*, bakteri amonifikasi, kadar amonium

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Influence Manure of Ammonification Bacteria Population and Ammonium Content Under *Acacia auriculiformis* A.Cunn. ex Benth. 9 Month in Gunungkidul

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ABSTRACT

Soil fertility is one of the important factors in the sustainability of plant growth, which can be influenced by the content of organic matter and the activity of soil microorganisms. One indicator of soil fertility is the presence of ammonification bacteria and ammonium content (NH₄⁺). Ammonification bacteria play a role in the process of decomposition of organic matter into ammonium compounds that can be utilized by plants. This study aims to analyze the effect of manure application on the population of ammonification bacteria and ammonium content under 9-month-old formis stands at three soil depths.

The research was conducted from December 2024 to March 2025. Doses of cow manure used were 0 kg, 1 kg, 2 kg and 3 kg. Soil samples were taken under formis stands at three depths: 0-10 cm, 10-20 cm, and 20-30 cm. Population counts of ammonification bacteria with MPN method and soil ammonium content with Uv-Vis Spectrophotometer were conducted at the Laboratory of Forest Tree and Soil Physiology, Faculty of Forestry, Gadjah Mada University.

The results showed that manure did not have a significant effect on the population of ammonification bacteria and ammonium content in the soil. Doses of 0 kg and 1 kg showed higher population of ammonification bacteria and ammonium content. The population of ammonification bacteria and ammonium content decreased with increasing soil depth.

*Keywords: Manure, *Acacia auriculiformis*, ammonification bacteria, ammonium content*

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