

**HUBUNGAN KANDUNGAN P DAN K TANAH  
DENGAN PERFORMA TEGAKAN *Eucalyptus* hibrida  
DI KHDTK WANAGAMA, GUNUNGKIDUL**

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**INTISARI**

*Eucalyptus* hibrida (*Eucalyptus pellita* × *Eucalyptus urophylla*) merupakan hasil persilangan dua spesies *Eucalyptus* yang memiliki keunggulan pertumbuhan cepat dan adaptasi tinggi, sehingga potensial dikembangkan pada hutan tanaman industri maupun rehabilitasi lahan marginal. Pertumbuhan tegakan sangat dipengaruhi oleh ketersediaan unsur hara tanah, terutama fosfor (P) dan kalium (K) yang berperan penting dalam proses fisiologis tanaman. Penelitian ini bertujuan untuk mengetahui kandungan P dan K tanah serta tren distribusinya berdasarkan kategori performa tegakan (Baik, Sedang, dan Kurang) di KHDTK Wanagama, Gunungkidul.

Prosedur penelitian meliputi lima tahapan, yaitu: (1) survei tegakan, (2) penentuan petak ukur menggunakan *purposive sampling*, (3) pengukuran dan klasifikasi performa tegakan (Baik, Sedang, dan Kurang), (4) pengambilan serta pengelolaan sampel tanah, dan (5) analisis laboratorium untuk menentukan kadar fosfor (P) dan kalium (K). Data yang diperoleh dianalisis secara deskriptif kuantitatif untuk menggambarkan pola distribusi unsur hara pada setiap kategori performa tegakan.

Hasil penelitian menunjukkan bahwa kadar P tanah di semua kedalaman lapisan tanah dan kategori performa tegakan termasuk dalam klasifikasi sangat tinggi (> 60 ppm), dengan konsentrasi tertinggi adalah lapisan tanah atas pada tegakan ber-Performa Kurang. Sementara itu, kadar K tanah tergolong rendah hingga sedang (0,09 – 0,15 cmol+/kg), dengan konsentrasi tertinggi yaitu lapisan atas dan tegakan ber-Performa Sedang. Distribusi unsur hara tidak selalu berkorelasi dengan kualitas performa tegakan, karena tegakan ber-Performa Baik justru menunjukkan distribusi vertikal hara yang merata. Temuan ini menegaskan bahwa performa tegakan tidak hanya dipengaruhi oleh kuantitas unsur hara P dan K, tetapi kemungkinan ditentukan oleh karakter fisika dan kimia lainnya.

**Kata Kunci:** Fosfor, Kalium, *Eucalyptus* hibrida, KHDTK Wanagama, Kesuburan tanah

**SOIL PHOSPHORUS AND POTASSIUM LEVELS IN RELATION WITH  
PERFORMANCE OF Hybrid *Eucalyptus* STANDS AT KHDTK  
WANAGAMA, GUNUNGKIDUL**

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**ABSTRACT**

*The hybrid *Eucalyptus* (*Eucalyptus pellita* × *Eucalyptus urophylla*) is a crossbreed species with superior growth rates and high adaptability, making it a promising candidate for industrial forest plantations and the rehabilitation of marginal lands. The growth performance of stands is strongly influenced by the availability of soil nutrients, particularly phosphorus (P) and potassium (K), which play essential roles in plant physiological processes. This study aimed to determine the soil P and K contents and their distribution trends based on stand performance categories (Good, Moderate, and Poor) in the Wanagama Educational Forest (KHDTK Wanagama), Gunungkidul.*

*The research procedure consisted of five stages: (1) stand survey, (2) plot selection using purposive sampling, (3) measurement and classification of stand performance (Good, Moderate, and Poor), (4) soil sampling and preparation, and (5) laboratory analysis to determine soil phosphorus (P) and potassium (K) concentrations. The data were analyzed using a quantitative descriptive approach to illustrate the nutrient distribution patterns across different stand performance categories.*

*The results showed that soil P levels at all soil depths and stand performance categories were classified as very high (> 60 ppm), with the highest concentration found in the upper soil layer of the Poorly Performing stands. Meanwhile, soil K levels ranged from low to moderate (0.09 – 0.15 cmol<sup>+</sup>/kg), with the highest concentrations observed in the upper layer and Moderately Performing stands. Nutrient distribution did not always correlate with stand performance, as stands with Good Performance exhibited a more uniform vertical nutrient distribution. These findings indicate that stand performance is not solely determined by the quantity of P and K nutrients, but is likely influenced by other soil physical and chemical characteristics.*

**Keywords:** *Phosphorus, Potassium, Hybrid *Eucalyptus*, KHDTK Wanagama, Soil fertility*