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Kapasitas Menahan Air Tanah di Tiga Umur Tegakan Jati (Tectona grandis) di KHDTK WANAGAMA
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KAPASITAS MENAHAN AIR TANAH DI TIGA UMUR TEGAKAN JATI (*Tectona grandis*) DI KHDTK WANAGAMA

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INTISARI

Tanah memiliki peran penting sebagai *water storage* alami. Besarnya kapasitas menahan air tanah secara langsung menentukan sejauh mana air tersedia bagi tanaman Penelitian ini dilakukan untuk mengetahui nilai kapasitas tanah menahan air (*soil water holding capacity*) di tegakan jati pada umur dan kedalaman yang berbeda serta untuk mengetahui hubungan antara kapasitas tanah menahan air dengan tekstur tanah, BV dan BO tanah pada tegakan jati.

Sebanyak 81 sampel tanah terusik dan 81 sampel tanah tidak terusik diambil yang mencakup sampel tanah yang diambil pada kedalaman 0-10 cm, 10-20 cm, dan 20-30 cm. Sampel tersebut diambil pada tiga tegakan jati dengan umur yang berbeda, yaitu tegakan jati tahun tanam 1988, 2004, dan 2014. Sampel tanah kemudian diuji untuk memperoleh nilai kemampuan tanah menahan air, berat volume tanah, C-organik tanah, serta tekstur tanah.

Nilai *Water Holding Capacity* (WHC) tanah tertinggi ditemukan pada tegakan jati sedang kedalaman 20–30 cm (66,90%), dan terendah terdapat pada tegakan jati muda kedalaman 20–30 cm (51,74%). Secara keseluruhan, kapasitas tanah menahan air berada dalam kategori sedang (46–68%). Hasil analisis regresi linear sederhana menunjukkan bahwa BV memiliki hubungan negatif yang kuat terhadap WHC (R^2 = 0,7895). Hubungan antara BO tanah dan WHC tergolong lemah dan negatif (R^2 = 0,0654). Sementara itu, fraksi pasir memiliki hubungan negatif terhadap WHC (R^2 = 0,4464), fraksi debu memiliki hubungan positif sangat lemah (R^2 = 0,0663), dan fraksi lempung memiliki hubungan negatif sangat lemah dengan (R^2 = 0,0009).

Kata Kunci: Kemampuan tanah menahan air, KHDTK Wanagama I, tegakan jati

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SOIL WATER HOLDING CAPACITY IN THREE AGE CLASSES OF TEAK (Tectona grandis) STANDS AT KHDTK WANAGAMA

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ABSTRACT

Soil plays an important role as a natural water storage. The soil's water-holding capacity directly determines how much water is available to plants. This study was conducted to determine the soil water-holding capacity (WHC) in teak stands at different ages and depths, and to examine the relationships between soil WHC and soil texture, bulk density (BD), and soil organic matter (SOM) in teak stands.

A total of 81 disturbed and 81 undisturbed soil samples were taken, covering depths of 0–10 cm, 10–20 cm, and 20–30 cm. Samples were collected from three teak stands of different ages: planted in 1988, 2004, and 2014. The soil samples were then analyzed to obtain values for water-holding capacity, bulk density, soil organic carbon, and soil texture.

The highest soil water-holding capacity (WHC) was found in the middle-aged teak stand at 20–30 cm depth (66.90%), and the lowest was in the young teak stand at 20–30 cm depth (51.74%). Overall, soil water-holding capacity fell into the moderate category (46–68%). Simple linear regression analysis showed that bulk density had a strong negative relationship with WHC ($R^2 = 0.7895$). The relationship between soil organic matter and WHC was weak and negative ($R^2 = 0.0654$). Meanwhile, the sand fraction had a negative relationship with WHC ($R^2 = 0.4464$), the silt fraction showed a very weak positive relationship ($R^2 = 0.0663$), and the clay fraction showed a very weak negative relationship ($R^2 = 0.0009$).

Keywords: *Soil water holding capacity, KHDTK Wanagama I, teak stand*

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