

**KARAKTER FISIK DAN MEKANIK AKAR SENGON (*Albizia Falcataria*)
DAN DAMPAKNYA TERHADAP STABILITAS LERENG**

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INTISARI

Vegetasi telah terbukti menunjukkan pengaruh positif bagi kestabilan lereng. Tujuan penelitian ini untuk mencari pengaruh sifat fisik dan mekanik akar tanaman sengon terhadap stabilitas lereng. Lokasi yang dipilih sebagai tempat penelitian yaitu sub DAS Bompon yang berada di kabupaten Magelang, Jawa Tengah. Dalam penelitian ini, data yang berhubungan dengan sifat fisik dan mekanik akar sengon diambil. Persebaran akar sengon diambil dengan metode penggalian dan *root area ratio*. Nilai *tensile strength* akar diambil dengan pengujian kuat tarik. Nilai kadar air akar diambil dengan metode gravimetri. Hasil menunjukkan persebaran akar meningkat pada kedalaman awal, dan kemudian menurun seiring kedalaman tanah, dengan rata-rata luas akar $186,23 \pm 26,78 \text{ cm}^2$. Rata-rata *tensile strength* akar yaitu $16,38 \pm 5,794 \text{ MPa}$ untuk diameter 2,26 mm sampai 5,92 mm. Jika dibandingkan dengan tanaman lain, sifat fisik dan mekanik tanaman sengon termasuk rendah, sehingga penanaman sengon di lahan miring perlu dikaji lebih lanjut.

Kata kunci : stabilitas lereng, persebaran akar, kekuatan tarik akar, sengon, Sub DAS Bompon

EFFECT OF PHYSICAL AND MECHANICAL WHITE ALBIZIA (*Albizia Falcataria*) ROOTS PROPERTIES ON SLOPE STABILITY

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ABSTRACT

Vegetation has proven to give positive effect on slope stability. The objective of this study was to find the effect of physical and mechanical white albizia (*albizia falcataria*) roots properties on slope stability. This study was located at Bompon sub-watershed in Magelang regency, Central Java. In this study, related data with physical dan mechanical white albizia root were collected. Root distribution was collected with concept of root area ratio and trenching method. Root tensile strength was collected with tensile test. Root water content was collected with gravimetry method. Result showed that root distribution was increasing in first depth and then decreased with soil depth, with average root area was $186,23 \pm 26,78 \text{ cm}^2$. Average root *tensile strength* was $16,38 \pm 5,794 \text{ MPa}$ for 2,26 mm until 5,92 mm diameter range. Compared with other plant, white albizia has lower physical and mechanical roots properties, with that result white albizia implantation on high degree slope need to be evaluated.

Keywords : slope stability, root distribution, tensile strength, white albizia, Bompon sub-watershed