

Pertumbuhan dan Karakteristik Anatomi Jaringan Trubusan Stek mini Jati (*Tectona grandis* Linn. F) pada Berbagai Klon dan Dosis Pupuk NPK

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Intisari

Upaya pemenuhan kebutuhan kayu jati dilakukan dengan pengembangan perhutanan klon jati dengan potensi mencapai >120 m³/ha. Penyediaan bibit unggul untuk perhutanan klon saat ini antara lain dilakukan dengan stek pucuk yang diperoleh dari kebun pangkas dengan materi klon-klon unggul. Keterbatasan pengakaran pada stek pucuk mendorong pengembangan stek mini dengan materi yang lebih juvenil. Stek mini memerlukan suplai nutrisi yang cukup terutama NPK untuk mempertahankan juvenilitas materi. Penelitian ini dilakukan untuk mengetahui pengaruh variasi klon dan dosis NPK terhadap pertumbuhan dan anatomi trubusan.

Penelitian ini didesain dengan Rancangan Acak Lengkap (RAL) faktorial dengan faktor 4 klon jati (F31, F71, WG1, WG2) dan 4 dosis NPK (0g, 1,5g, 3,0g, 4,5g) dengan 10 ulangan untuk masing-masing perlakuan. Variabel yang diamati yaitu jumlah, panjang, dan diameter trubusan, panjang internodia 1, 2, dan 3, jumlah daun, struktur jaringan, frekuensi dan diameter pembuluh, serta frekuensi dan diameter serat. Hasil pengamatan dianalisis dengan *two ways Analysis of Varians* (ANOVA), dan dilanjutkan *Duncan's Multiple Range Test* (DMRT) jika terdapat perbedaan nyata pada taraf kepercayaan 95%.

Hasil penelitian menunjukkan jumlah trubusan terbaik dihasilkan dari klon WG2 yaitu 3,94 pada umur 6 minggu. Panjang trubusan, diameter trubusan, dan panjang internodia 1 paling baik yaitu sebesar 2,11 cm, 0,40 cm, dan 0,69 cm dihasilkan dari dosis NPK 3,0g. Berdasarkan pengamatan anatomi, diameter serat terbesar adalah klon WG2 yaitu 9,32 μm . Frekuensi pembuluh, diameter pembuluh, frekuensi serat, dan diameter serat paling baik dihasilkan dari perlakuan dosis NPK 3,0 g dengan nilai berturut-turut sebesar 556 mm⁻², 28,36 μm , 4469 mm⁻², dan 9,44 μm . Hasil interaksi klon terbaik pada diameter serat adalah WG2 dan dosis NPK 3,0 g dengan nilai 10,95 μm .

Kata kunci: *klon unggul, dosis NPK, stek mini, jati*

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Growth and Tissue Anatomy of Teak (*Tectona grandis* Linn. F) Mini Cutting on Various Clones and NPK Fertilizer Dosages

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Abstract

Efforts to meet the demand of teak wood were carried out by developing clonal forestry that potentially can produce up to >120 m³/ha. Superior mass propagation for clonal forestry was currently done through shoot cutting obtained from hedge gardens of superior clones. Poor rooting ability of shoot cuttings led to the development of mini cutting with more juvenile material. Mini cutting requires an adequate supply of NPK nutrients to maintain the juvenility. This study aims to determine the effects of clones and NPK dosages on shoot growth and tissue anatomy.

The research was designed in a factorial Complete Randomized Design (CRD) with two factors, i.e. 4 teak clones (F31, F71, WG1, WG2) and 4 NPK dosages (0g, 1.5g, 3.0g, 4.5g). Each treatment was replicated 10 times. The parameters analyzed were the number, length, and diameter of shoot, length of internode 1, 2, and 3, number of leaves, tissue structure, vessel frequency and diameter, and fibre frequency and diameter. Data were analyzed by two ways Analysis of Variance (ANOVA), and a further Duncan's Multiple Range Test (DMRT) was conducted if there were significant differences at 95% level of confidence.

The results showed that the highest number of shoots (3.94) significantly were produced from WG2 clone at the age of 6 weeks. The best length and diameter of shoot, and length of internodia 1 resulted from 3.0g NPK dosage were 2.11 cm, 0.40 cm, and 0.69 cm respectively. Based on anatomical observations, the largest fibre diameter (9.32 μm) was shown by clone WG2. The best vessel frequency and diameter, and fibre frequency and diameter resulted from 3.0g NPK dosage were 556 mm⁻², 28.36 μm , 4469 mm⁻², and 9.44 μm respectively. The best result of clone interaction on fibre diameter was WG2 at NPK dosage of 3.0g with the value of 10.95 μm .

Keywords: *superior teak clone, NPK dosage, mini cutting, teak*

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