

OPTIMALISASI NAUNGAN DAN FREKUENSI PENYIRAMAN PADA PRODUKSI SEMAI BALSA (*Ochroma pyramidale*)

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INTISARI

Intensitas cahaya dan ketersediaan air merupakan faktor lingkungan yang sangat penting bagi pertumbuhan tanaman. Penelitian ini bertujuan untuk mengetahui pengaruh naungan dan frekuensi penyiraman terhadap pertumbuhan semai balsa (*Ochroma pyramidale*), serta menentukan kombinasi perlakuan yang paling optimal. Penelitian dilaksanakan di Persemaian dan Laboratorium Budidaya Hutan, Sekolah Vokasi, Universitas Gadjah Mada, dari April hingga Juni 2025. Rancangan penelitian menggunakan *Split Plot Design* dengan dua faktor: (*Main plot*) naungan (tanpa naungan, 40%, 60%, dan 80%) dan (*Sub plot*) frekuensi penyiraman (sekali sehari, 2 kali sehari, dan 2 hari sekali). Setiap kombinasi perlakuan diulang sebanyak 50 kali, dengan total 600 semai. Hasil penelitian menunjukkan bahwa naungan dan frekuensi penyiraman berpengaruh signifikan terhadap pertumbuhan semai balsa. Persentase hidup semai balsa pada semua perlakuan berkisar antara 94–100%. Pertumbuhan tinggi semai tertinggi dicapai pada perlakuan tanpa naungan dengan penyiraman 2 kali sehari (N1P2), yaitu 26,38 cm, sedangkan pertumbuhan terendah terjadi pada naungan 80% dengan penyiraman 2 hari sekali (N4P3), yaitu 12,03 cm. Pertumbuhan diameter terbaik juga ditemukan pada N1P2 (4,17 mm), sementara terendah pada N4P3 (1,92 mm). Lebih lanjut, biomassa akar tertinggi juga ditunjukkan pada perlakuan N1P2 (0,58 g), menunjukkan bahwa ketersediaan cahaya dan air yang cukup mendukung perkembangan sistem perakaran. Penelitian ini merekomendasikan penggunaan naungan maksimal 60% dan frekuensi penyiraman 2x sehari untuk memacu pertumbuhan semai balsa.

Kata Kunci: Balsa (*Ochroma pyramidale*), naungan, frekuensi penyiraman, pertumbuhan semai

OPTIMALIZATION OF SHADING AND WATERING FREQUENCY IN BALSA (*Ochroma pyramidale*) SEEDLING PRODUCTION

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ABSTRACT

Light intensity and water availability are very important environmental factors for plant growth. This study aims to determine the effect of shading and watering frequency on the growth of Balsa (*Ochroma pyramidale*) seedlings, and the most optimal treatment combination. The research was conducted at the Nursery and Silviculture Laboratory, Vocational College, Universitas Gadjah Mada, from April to June 2025. The research design used Split Plot Design with two factors: (Main plot) shading (no shading, 40%, 60%, and 80%) and (Sub plot) watering frequency (once a day, twice a day, and every other day). Each treatment combination was repeated 50 times, for a total of 600 seedlings. The results showed that shading and watering frequency had a significant effect on the growth of balsa seedlings. The percentage of live balsa seedlings in all treatments ranged from 94-100%. The highest seedling height growth was achieved in the no-shade treatment with twice daily watering (N1P2), which was 26.38 cm, while the lowest growth occurred in 80% shade with once daily watering (N4P3), which was 12.03 cm. The best diameter growth was also found in N1P2 (4.17 mm), while the lowest in N4P3 (1.92 mm). Furthermore, the highest root biomass was also shown in treatment N1P2 (0.58 g), indicating that the availability of sufficient light and water supported the development of the root system. This study recommends the use of maximum 60% shade and 2x daily watering frequency to spur the growth of balsa seedlings.

Keywords: Balsa (*Ochroma pyramidale*), shading, watering frequency, seedling growth