UNIVERSITAS GADJAH MADA
**Kualitas Benih Cendana (Santalum album Linn.) dengan Keragaman Genetik Induk Berbeda di Desa Petir,
Rongkop, Gunungkidul**
Alya Rohmatun Nafi'ah, Prof. Dr. Ir. Sapto Indrioko, S.Hut., M.P., IPU ; Dr. Ir. Yeni Widyana Nurchahyani Ratnaningru
Universitas Gadjah Mada, 2026 | Diunduh dari http://etd.repository.ugm.ac.id/

KUALITAS BENIH CENDANA (*Santalum album* Linn.) DENGAN KERAGAMAN GENETIK INDUK BERBEDA DI DESA PETIR, RONGKOP, GUNUNGKIDUL

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INTISARI

Cendana (*Santalum album* Linn.) merupakan salah satu jenis kayu penting di Asia yang bernilai ekonomi tinggi dengan status *vulnerable* menurut *International Union for Conservation of Nature Resources* (IUCN). Salah satu tantangan dalam upaya konservasi cendana adalah penebangan tidak diimbangi dengan keberhasilan regenerasi yang dipengaruhi oleh berbagai faktor termasuk kualitas benih. Desa Petir merupakan salah satu lokasi permudaan alami cendana yang berpotensi untuk diusulkan sebagai sumber benih unggul. Salah satu syarat penetapan suatu kawasan menjadi sumber benih adalah adanya data kualitas fisik dan fisiologis benih. Oleh karena itu, penelitian ini bertujuan untuk menguji kualitas fisik dan fisiologis benih cendana yang berasal dari kelompok tegakan dengan keragaman genetik induk berbeda di Desa Petir, Rongkop, Gunungkidul.

Parameter yang diuji pada penelitian ini meliputi berat benih 1000 butir, volume benih, kadar air, daya berkecambah, dan kecepatan berkecambah, kemudian dianalisis menggunakan uji statistik *analysis of variance* (Anova) pada program SPSS. Hasil analisis dinilai berpengaruh nyata dengan signifikansi <0,05, sehingga dilanjutkan dengan uji statistik DMRT.

Hasil penelitian menunjukkan bahwa rata-rata berat benih 1000 butir keragaman rendah 189,20 gram, keragaman tinggi 171,40 gram, dan keragaman sedang 163,80 gram. Volume benih keragaman rendah 227,05 mm^3, keragaman tinggi 222,36 mm^3, dan keragaman sedang 198,26 mm^3. Kadar air benih keragaman tinggi 6,79%, keragaman rendah 7,86%, dan keragaman sedang 8,29%. Adapun kualitas fisiologis berupa daya berkecambah benih keragaman tinggi 46,22%, keragaman rendah 24%, dan keragaman sedang 7,55%. Kecepatan berkecambah benih keragaman tinggi 6,04 minggu, keragaman rendah 8,42 minggu, dan keragaman sedang 9,04 minggu.

Kata kunci: cendana, benih, keragaman genetik, kualitas fisik, kualitas fisiologis

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SEED QUALITY OF SANDALWOOD (Santalum album Linn.*) FROM PARENT TREES WITH VARYING GENETIC DIVERSITY IN PETIR VILLAGE, RONGKOP, GUNUNGKIDUL*

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ABSTRACT

Sandalwood (Santalum album Linn.) is an important wood species in Asia with economic value and is listed as vulnerable by the International Union for Conservation of Natural Resources (IUCN). One of the challenges in sandalwood conservation efforts is the imbalance between logging and successful regeneration, which is influenced by various factors including seed quality. Petir Village is one of the natural sandalwood regeneration locations that has the potential to be proposed as a source of superior seeds. One of the requirements for designating an area as a seed source is the availability of data on the physical and physiological quality of the seeds. Therefore, this study aims to examine the physical and physiological quality of sandalwood seeds originating from stand groups with different parental genetic diversity in Petir Village, Rongkop, Gunungkidul.

The parameters tested in this study included 1,000 seed weight, seed volume, water content, germination capacity, and germination rate. These parameters were then analyzed using analysis of variance (ANOVA) in SPSS. The results were deemed significant with a significance level of <0.05, and therefore, the DMRT statistical test was used.

The results showed that the average weight of 1000 seeds of low diversity was 189.20 grams, high diversity 171.40 grams, and medium diversity 163.80 grams. The volume of low diversity seeds was 227.05 mm^3, high diversity 222.36 mm^3, and medium diversity 198.26 mm^3. The moisture content of high diversity seeds was 6.79%, low diversity 7,86%, and medium diversity 8.29%. The physiological quality in the form of germination of high diversity seeds was 46.22%, low diversity 24%, and medium diversity 7.55%. The germination rate of high diversity seeds was 6.04 weeks, low diversity 8.42 weeks, and medium diversity 9.04 weeks.

Keywords: sandalwood, seeds, genetic diversity, physical quality, physiological quality

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