

## **Evaluasi Kemampuan Trubus dan Sifat Kayu pada Tegakan *Eucalyptus pellita* Hasil Penyerbukan *Selfing*, Alam dan *Crossing* di KHDTK Wanagama I**

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### **INTISARI**

*Eucalyptus pellita* merupakan salah satu spesies cepat tumbuh yang banyak ditanam di HTI dengan tujuan kayu pertukangan dan bahan baku industri pulp dan kertas. Di KHDTK Wanagama terdapat tegakan *E. pellita* hasil penyerbukan *selfing*, *crossing* dan alam yang saat ini berumur 23 tahun. Keturunan dari ketiga tipe penyerbukan tersebut memiliki perbedaan sifat kayu dan kemampuan pembentukan trubusan. Penelitian ini bertujuan untuk (1) mengetahui sifat kayu pada tegakan *E. pellita* hasil penyerbukan *selfing*, *crossing* dan alam berbasis analisis pilodyn untuk pemanfaatan sebagai kayupertukangan; dan (2) mengetahui kemampuan pembentukan trubusan sebagai bahan propagasi vegetatif untuk tujuan pulp dan kertas.

Penelitian dilakukan di Petak 14 KHDTK Wanagama I, Gunungkidul, Yogyakarta pada bulan Februari – Juni 2023. Penaksiran sifat kayu dilakukan dengan metode *non – destructive*, yaitu penetrasi pilodyn. Sementara itu, kemampuan pembentukan trubusan diamati melalui parameter persentase individu pohon yang berhasil membentuk trubusan, jumlah trubusan, ukuran trubusan (panjang dan diameter) serta jumlah daun per trubusan; yang diukur 4 bulansetelah dilakukan *girdling*.

Hasil penelitian menunjukkan bahwa keturunan hasil *selfing* memilikisifat kayu yang lebih baik, dengan nilai penetrasi pilodyn sebesar 10 mm dan estimasi berat jenis sebesar 0,55. Keturunan hasil penyerbukan alam memilikinilai penetrasi pilodyn sebesar 11 mm dengan estimasi berat jenis sebesar 0,54. Sementara itu, keturunan hasil *crossing* memiliki nilai penetrasi pilodyn sebesar 15 mm dan estimasi berat jenis sebesar 0,50. Akan tetapi, keturunan hasil penyerbukan *crossing* menampilkan kemampuan pembentukan trubusan yang lebih tinggi; dengan persentase pembentukan trubusan 38,33% rerata panjangtrubusan 94,93 cm, jumlah trubusan 6, diameter trubusan 5,15 mm dan jumlah daun per trubusan 49. Keturunan hasil penyerbukan alam memiliki persentase pembentukan trubusan 29,71%, rerata panjang trubusan 93,39 mm, jumlah trubusan 4, diameter trubusan 4,88 mm dan jumlah daun per trubusan 48. Sementara itu, keturunan hasil *selfing* memiliki persentase keberhasilan trubusan terendah, yaitu 24,69%, dengan rerata panjang trubusan 71,69 cm, diameter trubusan 3,32 mm, jumlah trubusan 2 dan jumlah daun per trubusan 29.

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**Kata kunci : *Eucalyptus pellita*, sistem perkawinan, pilodyn, sifat kayu, kemampuan trubus**

***The Evaluation of Sprouting Ability and Wood Properties of *Eucalyptus pellita* Progenies Derived from Selfing, Natural and Crossing Pollination in KHDTK Wanagama I***

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**ABSTRACT**

*Eucalyptus pellita* is one of fast growing species which is recommended for HTI since it is widely used as carpentry and raw materials for pulp and paper industry. The 23 year-old stand of *E. pellita* in KHDTK Wanagama was established from the progenies derived from selfing, natural and crossing pollination. There were differences in the quality of wood and the sprouting ability among these three pollination types. This research aimed to (1) determine the quality of wood in *E. pellita* progenies derived from selfing, natural and crossing pollination based on pilodyn, for carpentry wood; and (2) determine the sprouting ability as vegetative propagation materials for pulp and paper.

The research was conducted in Compartment 14 of KHDTK Wanagama I, Gunungkidul, Yogyakarta from February to June 2023. Measurement of wood properties was carried out using a non-destructive method by pilodyn penetration. The parameter observed in this experiment included, the sprouting ability, number of sprouts, length and diameter of sprout, and number of leaves per sprout. The observation was conducted four months after girdling.

The results showed that wood quality performed better in selfing progenies, with a pilodyn penetration value was 10 mm and the estimated specific gravity value was 0,55. The natural pollinated progenies has pilodyn penetration value 11 mm and the estimated specific gravity value was 0,54. Meanwhile, the crossing progenies performed the lowest wood quality, with a pilodyn penetration value was 15 mm and the estimated specific gravity value was 0,50. However, the crossing progenies performed the highest sprouting ability (38,33%) with an average sprout length was 94,93 cm, number of sprouts was 6, diameter of sprouts was 5,15 mm and number of leaves per sprout was 49. Sprouting ability of the natural pollination progenies was 29,71%, with an average sprout length was 93,39 mm, number of sprouts was 4, sprout diameter was 4,88 mm and number of leaves per sprout was 48. Meanwhile, selfing progenies had the lowest sprouting ability (24,69%) with an average sprout length was 71,69 cm, number of sprouts was 2, diameter of sprouts was 3,32 mm and number of leaves per sprouts was 29.

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**Keywords : *Eucalyptus pellita*, mating system, pilodyn, wood properties, sprouting ability**