

**KETAHANAN TIGA JENIS KAYU UNTUK BANTALAN REL  
KERETA API TERHADAP JAMUR PERUSAK KAYU SECARA  
LABORATORIS**

**The Resistance of Three Wood Species for Railway Sleeper Against Wood  
Destroying Fungi in a Laboratory Experiment**

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ABSTRACT

Wood still performs as the main materials for railway sleepers, especially at their connected portions, cross and bridge. So far, wood has not yet been effectively substituted by other materials. However, wood based railway sleepers are susceptible to deterioration by the decaying fungi. This study examined, the decay resistance of three wood species i.e. bangkirai (*Shorea laevis*), meranti batu (*Shorea platyclados*) and rasamala (*Altingia exelsa*). Samples were evaluated against the decaying fungi in a laboratory experiment using DIN 52176-modified standard. Results indicated that bangkirai and meranti batu were classified resistance against fungal attacks (Class II), whereas, rasamala was categorized moderately resistant (Class III). The weight loss percentage of rasamala was higher than those of bangkirai and meranti batu. The ability of fungus to degrade certain wood was depended upon kinds of wood and fungus itself. Fungi with significant decay ability were *Pycnoporus sanguineus* HHB-324, *Schizophyllum commune*, *Polyporus* sp., *Trametes* sp. and *Tyromyces palustris*. The highest weight losses were recorded on samples exposed consecutively to *Pycnoporus sanguineus* and *Schizophyllum commune*.

Keywords: Resistance, wood decaying fungi, weight loss

ABSTRAK

Kayu untuk bantalan rel merupakan bahan yang belum dapat digantikan dengan produk lain terutama pada sambungan, simpangan dan jembatan. Akan tetapi, kayu yang telah terpasang untuk bantalan rel umumnya rawan terhadap serangan jamur pelapuk. Tiga jenis kayu yaitu bangkirai (*Shorea laevis*), meranti batu (*Shorea platyclados*) dan rasamala (*Altingia exelsa*) diuji terhadap jamur menggunakan standar DIN 52176 yang dimodifikasi dengan tujuan untuk mengetahui ketahanan kayu tersebut terhadap jamur pelapuk di laboratorium. Hasil penelitian menunjukkan bahwa kayu bangkirai dan meranti batu termasuk kelompok kayu resisten (kelas II), sedangkan kayu rasamala termasuk kelompok kayu agak-resisten (kelas III). Kehilangan berat kayu rasamala lebih tinggi dibandingkan dengan kehilangan berat kayu bangkirai dan meranti batu. Kemampuan jamur untuk melapukkan kayu beragam menurut jenis kayu yang digunakan dan jenis jamur yang menyerangnya. Kemampuan melapukkan kayu yang tinggi didapatkan pada *Pycnoporus sanguineus* HHB-324, *Schizophyllum commune*, *Polyporus* sp., *Trametes* sp. dan *Tyromyces palustris*. Kehilangan berat tertinggi terjadi pada kayu rasamala yang diletakkan pada biakan *P. sanguineus* (15,89%) dan *S. commune* (15,32%).

Kata kunci: Ketahanan kayu, jamur pelapuk, kehilangan berat