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**Classifying white rot decay resistance of some hardwoods from Sarawak and Peninsular Malaysia and correlations with their tropical in-ground durability**

<sup>1</sup>Andrew H.H. Wong, <sup>1</sup>Jessica M. E Jem and <sup>2</sup>Lai Jiew Kok

<sup>1</sup>Faculty of Resource Science and Technology,  
Universiti Malaysia Sarawak,  
94300 Kota Samarahan, Sarawak, Malaysia  
Email: ahhwong@frst.unimas.my

<sup>2</sup>Timber Research and Technical Training Centre (TRTTC)  
Sarawak Forestry Corporation (SFC)  
93250 Kuching, Sarawak, Malaysia

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**IRG SECRETARIAT**  
**Box 5609**  
**SE-114 86 Stockholm**  
**Sweden**  
**[www.irg-wp.org](http://www.irg-wp.org)**

# Classifying white rot decay resistance of some hardwoods from Sarawak and Peninsular Malaysia and correlations with their tropical in-ground durability

<sup>1</sup>Andrew H.H. Wong, <sup>1</sup>Jessica M. E Jem and <sup>2</sup>Lai Jiew Kok

<sup>1</sup>Faculty of Resource Science and Technology,  
Universiti Malaysia Sarawak,  
94300 Kota Samarahan, Sarawak, Malaysia  
Email: ahhwong@frst.unimas.my

<sup>2</sup>Timber Research and Technical Training Centre (TRTTC)  
Sarawak Forestry Corporation (SFC)  
93250 Kuching, Sarawak, Malaysia

(Last name of authors are underlined)

## ABSTRACT

White rot wood decay under Malaysian (humid tropical) terrestrial conditions pose more serious threats to the in-ground service life of hardwoods than other common fungal decay types. A study is made on decay resistance variation for a total combined list of 30 Peninsular Malaysian and Sarawak timber species (plus 6 exotic reference temperate commercial woods for comparison) using the laboratory soil-block decay test method of ASTM D 2017, challenged with a representative virulent Malaysian white rot Basidiomycete *Pycnoporus sanguineus*. Results showed that *Hevea brasiliensis* (rubberwood) suffered the most severe wood decay with average percentage mass loss of 43.9%, and regarded as non-durable. On the other scale, there was expectedly negligible decay of the most durable species *Eusideroxylon zwageri* (belian) heartwood with mean mass loss of only 0.7 %. The remaining species varies between non-durability and high decay durability, but mainly moderately durable on the American ASTM 2017 and European EN350-1 decay resistance classification scales. The decay test findings were weakly correlated with recent Malaysian stake test results. Comparative variation of the white rot decay resistance among the timber species will augment the existing pool of information on wood quality classifications of some tropical timbers that are currently sought by the international timber trade, as well as detecting promising relatively decay resistant lesser-utilised species, that the international forest products trade may also be inclined to utilize in addition to the traditional commercial Malaysian species that are now in limited supplies.

Keywords: Decay resistance, natural durability, decay test, durability classification, ASTM D 2017, white rot, *Pycnoporus sanguineus*, Malaysian timbers