

Shells of Coconut and their Durability against Termite Attack

Manuel Daß¹, Andrew H.H. Wong², Wibke Unger³

¹MPA Stuttgart, Otto-Graf-Institut (FMPA), Universität Stuttgart,
Pfaffenwaldring 32, 70569 Stuttgart, Federal Republic of Germany

²Universiti Malaysia Sarawak (Unimas),
Faculty of Resource Science & Technology,
94300 Kota Samarahan, Sarawak, Malaysia

³Professor, Visiting Lecturer at the University of Applied Sciences Potsdam (FHP),
Department of Civil Engineering,
Pappelallee 8-9, 14469 Potsdam, Federal Republic of Germany

ABSTRACT

All tropical and subtropical areas of the Earth are inhabited by termites. In climates with moderate temperatures, they occur less frequently. Especially wood and non-wood materials that grows in tropical areas and used there in timber constructions and woodworking, wood durability and protection against termites should be researched. This paper reports findings from an experimental “AW011” laboratory forced- and choice- termite tests on the durability of shells of Coconut (*Cocos nucifera* L.) against termite attack by *Reticulitermes santonensis* de Feytaud to see if there could be any new use for them. Two reference tropical hardwoods were compared: Teak heartwood (*Tectona grandis* L.f.) as naturally durable and Jelutong sapwood (*Dyera costulata* Hook. f. (Miq.)) as non-durable wood. Furthermore, we compared with Beech (*Fagus sylvatica* L.). Pine sapwood (*Pinus sylvestris* L.) was the control for the tests. Overall from test varieties, termite mortality, visual rating and mass loss data, coconut shells and teak heartwood were comparably termite resistant. Jelutong and beech were rated moderately resistant while Pine was clearly susceptible among these non-durable woods.

Keywords: coconut shell, tropical timber, *Reticulitermes santonensis*, wood durability, evaluation, new standard, termite resistance, termite test methodology, application in tropical countries