

Solid hardwood flooring resistance to termites (*Coptotermes curvignathus*) under laboratory condition

ABSTRACT

Hardwood flooring is generally manufactured using solid timbers because they can withstand harsh weather conditions and are more resistant to pest attack. In Malaysia, a major pest to timber structures is the subterranean termites. To prevent wood degradation by termites, chemical preservatives have been applied to wood. However, this practice is not environmentally friendly and may be hazardous to humans, thus creating the demand for naturally durable wood. In this study, the durability of six local and three foreign tropical hardwoods against *Coptotermes curvignathus* were tested in the laboratory. Untreated solid hardwoods were each cut into replicate test wafers of 25 mm square by 6 mm in the radial direction and were exposed to 400 termites (360 workers and 40 soldiers) in culture bottles following AWP A EI-97 protocols. After four weeks, visual rating, mass loss of each sample and termite mortality were determined. All the test samples subjected to *C. curvignathus* had 100% mortality rate, sample weight losses of 3.30-8.52%, and a minimum visual rating of 9.0 at the end of a 4-week test. There was a weak correlation between specific gravity and mean mass loss of the samples. Our results suggest that local hardwood species 'bids' (*Madhuca utilis*) and 'kekatong' (*Cynometra malaccensis*), and a foreign species 'pyinkado' (*Xylia dolabriformis*) are highly resistant to *C. curvignathus* attack and could be used as flooring materials without chemical treatment.

Keyword: *Coptotermes curvignathus*; Malaysia tropical hardwood; Natural resistance