

# Resistance of Borate-Treated Rubberwood Chipboard to the Formosan Subterranean Termite (Isoptera: Rhinotermitidae)

by

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## ABSTRACT

Both no-choice and two-choice 4-week AWPA laboratory tests were performed to evaluate the resistance of borate-treated rubberwood (*Hevea brasiliensis*) chipboard prepared from a commercial mill run, against the Formosan subterranean termite *Coptotermes formosanus*. Boric acid (technical granular) was incorporated into the boards during manufacture to achieve loadings of 1.0% or 1.1% boric acid equivalents (BAE). In the no-choice test, both the untreated chipboard and solid rubberwood controls sustained heavy termite attack (respective mean visual ratings of 4.6 and 2.7 on a 10-point AWPA scale), while the two retentions of borate-treated chipboard showed only light grazing (mean rating 9.2). The two-choice test demonstrated a preference of termites for solid rubberwood (mean rating 2.4) instead of untreated chipboard (rating 8.4), and for untreated (mean rating 8.4 and 8.8) instead of borate-treated (mean ratings 9.8 & 9) chipboards. Complete termite mortality in the presence of borate-treated chipboard in both laboratory tests demonstrates the toxicity of borates to Formosan subterranean termites.

Keywords: *Hevea brasiliensis*, *Coptotermes formosanus*, wood composite, borate wood treatment

## INTRODUCTION

The availability of cost-effective wood protecting chemicals with low environmental impact would offer a considerable marketing advantage to the wood preservation industry at a time when some of the traditional wood preservatives are being subjected to heavy regulatory scrutiny. Borates have relatively low mammalian toxicity and environmental impact, and are widely reported to effectively protect solid wood from decay fungi, wood-boring beetles and termites, under non-leaching

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