

## **Impregnation of sesenduk (*Endospermum diadenum*) wood with phenol formaldehyde and nanoclay admixture: effect on fungal decay and termites attack**

### **ABSTRACT**

The aimed of this study was to evaluate the resistance of sesenduk (*Endospermum diadenum*) wood, treated using admixture of low molecular weight phenol formaldehyde (LmwPF) resin and nanoclay, against white rot fungus (*Pycnoporus sanguineus*) and subterranean termites (*Coptotermes curvignathus* Holmgren). Seven sample groups including untreated sesenduk wood and treated sesenduk wood using 10, 15 and 20% LmwPF resin and the admixture of the 1.5% nanoclay with every level of resin concentrations. Air-dried samples were impregnated using vacuum-pressure process. After impregnation, the treated samples were heated in an oven at 150°C for 30 min. Five test blocks from each treatment group were tested separately against *P. sanguineus* and *C. curvignathus* in accordance with AWWA E10-12 and AWWA E1-13 standards, respectively. The results showed that both treatments had significant effects on the percentage weight loss and decay rate of the samples. The weight loss due to termite attack was found reduce with the increasing PF concentration. Generally, the addition of 1.5% nanoclay in PF resin slightly increased the resistance against both deteriorating agents compared to the wood treated using PF alone. It was found that the PF resin can be used as an effective method to improve the durability of sesenduk wood.

**Keyword:** *Coptotermes curvignathus*; Nanoclay; Phenolic resin; *Pycnoporus sanguineus*; Sesenduk