

Ekkapong Phetarwut 2012: Efficiency and Protection Methods against Subterranean Termites Damaging Rubberwood (*Hevea brasiliensis* Muell. Arg.) Using Boron Compounds. Master of Science (Forestry), Major Field: Forest Products, Department of Forest Products. Thesis Advisor: Associate Professor Teera Veenin, Dr.Agr. 59 pages.

Study on efficiency and protection methods against subterranean termites damaging rubberwood (*Hevea brasiliensis* Muell. Arg.) using boron compounds. Rubberwood sized 5×10×2.5 centimeter were divided into 2 parts. The first parts were impregnated with boron compound. The rates of average boric acid equivalent (BAE) retention were 0.8, 1.0, 1.2, 1.4 and 1.6%. The second parts were brushed with mixture of Bora-care and water at ratio of 1:1, 1:2 and 1:3. Both tested wood samples were exposed to subterranean termites for 6 months and 12 months in field condition without leaching. The result of all treated samples and control after 6 month experiment showed a little damage on surface area. After 12 month, the rubberwood treated with 1.6%BAE showed the lowest lose surface area (2%). However, there were no significantly differences with the rubberwood treated with 1.4%BAE (4%) and rubberwood brushed with mixture of Bora-care and water at ratio 1:1 (4%)

Then the amount of boron in rubberwood impregnated with boron compound at average BAE 0.8, 1.0, 1.2, 1.4 and 1.6% were analyzed in laboratory. The results of average BAE were 0.913, 0.920, 1.043, 1.193 and 1.727%, respectively.

Studies on penetration of boron in all treated rubberwood were determined with Turmeric solution and Salicylic acid solution. The results showed that all rubberwood impregnated with boron compound had full penetration along cross section area while penetration percentage of rubberwood brushed with mixture of Bora-care and water at ratio of 1:1, 1:2 and 1:3 were 69.33, 79.13 and 58.47%, respectively

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Thesis Advisor's signature