

PENGAWETAN KAYU TREMBULU (*Maesopsis eminii* Engl) MENGGUNAKAN CAMPURAN COPPER SULPHATE, POTTASIMUM BICROMATE, SODIUM HIDROGEN SULPHATE, DAN BORIC ACID DENGAN PERLAKUAN PENGUKUSAN SEBELUM PERENDAMAN DINGIN TERHADAP SERANGAN RAYAP KAYU KERING *Cryptotermes cynocephalus* Light.

Oleh :

Hendika Jaya Putra¹

Sutjipto A. Hadikusumo²

INTISARI

Kayu Trembulu (*Maesopsis eminii* Engl) merupakan salah satu jenis kayu yang termasuk dalam kelas awet IV tentunya memerlukan proses pengawetan agar tidak mudah terserang organisme perusak kayu seperti rayap kayu kering *Cryptotermes cynocephalus* Light sehingga kayu trembulu memiliki umur pakai kayu yang lebih lama. Tujuan dari penelitian untuk mengetahui pengaruh interaksi antara faktor lamanya pengukusan dan lamanya perendaman dingin terhadap absorpsi, retensi aktual, pengurangan berat, derajat kerusakan dan mortalitas rayap.

Rancangan penelitian yang digunakan yaitu rancangan acak lengkap dengan dua faktor yaitu lama pengukusan (1 jam, 2 jam, 3 jam) dan lama perendaman dingin (12 jam, 24 jam, 36 jam). Contoh uji yang digunakan berukuran 5 x 5 x 5 cm dan 2 x 2 x 2 cm dengan bahan pengawet campuran Copper Sulphate, Pottasium Bicromate, Sodium Hidrogen Sulphate, dan Boric Acid. Contoh uji dalam kondisi kering udara dikukus terlebih dahulu dengan suhu 80 °C selama 1 jam, 2 jam, dan 3 jam lalu dilanjutkan dengan perendaman dingin selama 12 jam, 24 jam, dan 36 jam. Selanjutnya contoh uji dalam kondisi kering udara diumpangkan terhadap rayap selama 30 hari, dengan cara memasang tabung gelas yang berdiameter 3 cm dan tinggi 4 cm lalu dimasukkan masing-masing 50 ekor rayap pada contoh uji yang telah diawetkan.

Hasil penelitian menunjukkan bahwa interaksi antara faktor lama pengukusan dan lama perendaman dingin tidak berpengaruh terhadap absorpsi, retensi aktual, pengurangan berat, derajat kerusakan dan mortalitas rayap. Faktor lama pengukusan memberikan perbedaan yang sangat nyata terhadap nilai absorpsi, retensi aktual, pengurangan berat, derajat kerusakan dan mortalitas rayap. Sedangkan faktor lama perendaman dingin memberikan perbedaan yang sangat nyata terhadap nilai absorpsi dan mortalitas rayap. Penggunaan bahan pengawet campuran Copper Sulphate, Pottasium Bicromate, Sodium Hidrogen Sulphate, dan Boric Acid konsentrasi 3 % dengan lama pengukusan 3 jam dan lama perendaman dingin 24 jam menunjukkan hasil yang cukup efektif dalam melindungi kayu trembulu terhadap serangan rayap kayu kering *Cryptotermes cynocephalus* Light dengan nilai mortalitas sebesar 96 % dan termasuk dalam skala derajat kerusakan ringan terhadap kontrol (6,6 %)

Kata Kunci : Pengawetan, Pengukusan, Rendaman dingin, Kayu trembulu

¹ Mahasiswa Jurusan Teknologi Hasil Hutan Fakultas Kehutanan UGM

² Dosen Jurusan Teknologi Hasil Hutan Fakultas Kehutanan UGM

**PRESERVATION OF TREMBULU TREE (*Maesopsis eminii* Engl)
USING THE MIXED OF COPPER SULPHATE, POTTASIMUM
BICROMATE, SODIUM HIDROGEN SULPHATE, AND BORIC ACID
WITH THE TREATMENT OF STEAMING BEFORE A COLD SOAKING
AGAINST THE ATTACK OF DRY WOOD TERMITE *Cryptotermes
cynocephalus* Light**

By:

**Hendika Jaya Putra¹
Sutjipto A. Hadikusumo²**

ABSTRACT

Trembulu Tree (*Maesopsis eminii* Engl) as one of the tree kinds including in a preserving class of IV requires of course the process of preserving in order to be not easily attacked by organisms damaging the tree such as a dry wood termite *Cryptotermes cynocephalus* Light as well as to has a relatively longer term of use. The purpose of this study is to find out the influence of interaction between factor of the length of steaming and that of cold soaking on absorbtion, actual retention, weight reduction, damage degree, and the termite's mortality.

The design of the study is a complete randomized design with two factors, i.e. the length of steaming (1 hours, 2 hours, and 3 hours) and that of cold soaking (12 hours, 24 hours, and 36 hours). The samples of tests used are 5 x 5 x 5 cm and 2 x 2 x 2 cm in size, respectively, with the preserving materials of the mixture of Copper Sulphate, Potassium Bicromate, Sodium Hydrogen Sulphate, and Boric Acid. The samples of tests in the condition of dry air are previously steamed in 80°C for 1 hour, 2 hours, and 3 hours, then continued by cold soaking for 12 hours, 24 hours, and 36 hours. The samples of tests in the condition of dry air are then used as bait to the termite for 30 days by installing the glass tube of 3 cm in diameter and 4 cm in height. Then each is entered 50 tails at the preserved samples of test.

The result of the study indicates that interaction of the factor of streaming length and that of cold soaking do not influence the absorbtion, actual retention, weight reduction, damage degree and the termite's mortality. While the factor of cold soaking length provides extremely real differences in absorption values and the termite's mortality. The use of the preserving materials of mixtue of Copper Sulphate, Potassium Bicromate, Sodium Hydrogen Sulphate, and Boric Acid of 3% in concentration for the steaming length of 3 hours and the cold soaking length of 24 hours in time indicate results that are effective enough in protecting Trembulu tree against the attack of dry wood termites *Cryptotermes cynocephalus* Light with the mortality value of 96% and includes in the degree of light damage scale compared with the control (6,6%).

Keywords: Preservation, Steaming, Cold Soaking, Trembulu Tree

¹ Student in Department of the Technology of Forestry Products, Forestry Faculty, UGM.

² Lecture in Department of the Technology of Forestry Products, Forestry Faculty, UGM.