

ABSTRAK

Octo Fransisco Marpaung, 2016. “**Aplikasi Asap Cair Limbah Tempurung Kelapa Untuk Menekan Pertumbuhan dan Perkembangan Jamur Akar Putih (*Rigidoporus microporus*) Pada Okulasi Bibit Karet (*Hevea brasiliensis*)**, penelitian ini dibawah bimbingan Prof. Dr. Ir. Retna Astuti Kuswardani, MS., selaku Ketua Pembimbing dan Ir. Gusmezal, MP., selaku Anggota pembimbing. Penelitian ini bertujuan untuk mengetahui konsentrasi asap cair tempurung kelapa yang optimal dalam menekan pertumbuhan dan perkembangan jamur akar putih (*Rigidoporus microporus*). Penelitian ini dilaksanakan di Laboratorium Universitas Medan Area (untuk uji *invitro*) dan untuk uji lapangan dilaksanakan di desa Durin Tonggal Ujung Bandar, Kec. Pancur Batu. Kab. Deli Serdang mulai bulan April sampai bulan Juli 2016. Penelitian di Laboratorium menggunakan Rancangan Acak Lengkap (RAL) secara Non Faktorial dengan 6 Perlakuan dan 4 Ulangan. Pada penelitian di Lapangan menggunakan Rancangan Acak Kelompok (RAK) Secara Non Faktorial dengan 6 Perlakuan dan 4 Ulangan. Pada Penelitian di Laboratorium Perlakuan *Trichoderma* sp (kontrol positif), Tanpa *Trichoderma* sp dan asap cair (kontrol negatif) dan Berbagai Konsentrasi Asap Cair (0,5%, 1%, 1,5%, 2% per liter air). Pada penelitian di Lapangan Perlakuan *Trichoderma* sp (kontrol positif), Tanpa *Trichoderma* sp dan asap cair (kontrol negatif) dan Berbagai Konsentrasi Asap Cair (5ml, 10ml, 15ml, 20ml per liter air).

Hasil penelitian di Laboratorium menunjukkan bahwa aplikasi asap cair tempurung kelapa dengan konsentrasi 1,5% dan 2% / liter air, memiliki kemampuan menekan pertumbuhan koloni jamur akar putih (*Rigidoporus microporus*) yang paling efektif. Hasil penelitian di Lapangan menunjukkan bahwa perlakuan asap cair tempurung kelapa dengan konsentrasi 15 ml dan 20 ml per liter air memiliki kemampuan meningkatkan pertumbuhan tinggi bibit karet, jumlah daun bibit karet, menekan volume akar terinfeksi dan menekan intensitas serangan pada 28 hari setelah aplikasi asap cair.

Kata kunci : asap cair, tempurung kelapa, *Rigidoporus microporus*, *Hevea brasiliensis*

ABSTRACT

Octo Pransisco Marpaung, 2016, " **The Liquid Smoke Waste Application Of Coconut Shell To Suppress The Growth and Development Of The White Root Mushroom (*Rigidoporus microporus*) On Grafting Rubber Seedlings (*Hevea brasiliensis*)**, this research under the guidance of Prof. Dr. Ir. Retna Astuti Kuswardani, MS., as the Head Counselor and Ir. Gusmezal, MP., as a Member of Counselor. It aims to determine the concentration of the liquid smoke of coconut shell optimized in suppressing the growth and development of the white root mushroom (*Rigidoporus microporus*). This research was conducted in Universitas Medan Area Laboratory (for *invitro* test) and for field test was conducted at Durin Tonggal Village Ujung Bandar, Sub-district. Pancur Batu, District. Deli Serdang from April to July 2016. Research Laboratory using Completely Randomized Design (CRD) Non Factorial with 6 treatments and 4 replications. In the field using Randomized Block Design (RBD) Non factorial with 6 treatments and 4 replications. On research in the Laboratory the treatment of the *Trichoderma* sp (control positive), Without the *Trichoderma* sp and liquid smoke (control negative) and various concentrations of the liquid smoke (0,5%, 1%, 1,5%, 2% per water liter). On research in field the treatment of the *Trichoderma* sp(control positive), without the *Trichoderma* sp and liquid smoke (control negative) and various concentrations of the liquid smoke (5ml, 10 ml, 15ml, 20ml, per water liter).

The results of laboratory research showed that the application of the liquid smoke of coconut shell with concentrate 1,5% and 2% of water, have the ability to suppress the growth of colonies the white root mushroom (*Rigidoporus microporus*) most effectively. The results of research in the field indicate that treatment of liquid smoke of coconut shell with concentrate 15 ml and 20 ml per water liter have ability to raise the high growth of rubber seeds, the amount of rubber seeds, to reduce the volume of infected root and suppress the intensity of the attacks on 28th day after the application of liquid smoke.

Keywords : The liquid smoke, coconut shell , *Rigidoporus microporus*, *Hevea brasiliensis*