

EFEKTIVITAS ASAP CAIR DARI LIMBAH TEMPURUNG KELAPA SEBAGAI BIOPESTISIDA BENIH DIGUDANG PENYIMPANAN

*(Effectiveness of Liquid Smoke from Coconut Shell Waste
As Biopesticide for Seeds in Storage Warehouse)*

Arinto Nugroho & Imas Aisyah¹⁾

¹⁾Centre Vocational Education Development Center for Agriculture (VEDGA)
in Cianjur (West Java)

E-mail: arinto_ngrh@yahoo.com; nuraisyah761@yahoo.com

Diterima 12 Juni 2012, disetujui 12 Februari 2013

ABSTRACT

Liquid smoke was formed as condensation product during the process of wood pyrolysis at temperature around 400 C). Phenolic compounds, aldehydes, ketones, alcohols, organic acids and ester, could functioned as antioxidants and anti-microbes (anti-bacteria and anti fungi). This research aimed to study the effectivity of liquid smoke from coconut shell waste as alternative agent to control the attack by seed pests (i.e. fungi) on the plant seed stored in the warehouse, of the Plant Seeding Departement, Vocational Education Development Center for Agriculture (VEDCA). The Initial step of the research was the production of liquid smoke from coconut shell, the obtained liquid smoke was then sprayed evenly onto corn seeds and soy bean seeds at four different concentration : 0%, (control), 0.5%, 1%, and 2% (v/v). Each of which were made in 3 replications, re-drying process was then done to let the seeds reach its optimum moisture content. Concentration 3 replications were made. The seeds were then packed in wheat flour sack and each kept for 72 days. Samples were then taken at day-0, day-36 and day-72 for observation on germination test and seed health testing (insensitivity of fungi attack). The treatment of liquid smoke with varying concentration, i.e 0.5%, 1%, and 2% brought about significant difference in the germination of both corn and soy bean seeds after warehouse storage for 72 days, and 0.5% concentration showed the best result.

Keywords: Liquid smoke, anti-microbe, pyrolysis, coconut shell, seed viability

ABSTRAK

Asap cair merupakan hasil kondensasi proses pirolisis kayu pada suhu sekitar 400 °C. Asap cair mengandung berbagai komponen kimia seperti fenol, aldehid, keton, asam organik, alkohol dan ester. Senyawa fenol, asam dan alkohol dapat berperan sebagai antioksidan dan antimikroba (antibakteri dan antifungi). Penelitian ini dilakukan untuk menguji efektivitas asap cair dari limbah tempurung kelapa sebagai bahan alternatif untuk mengendalikan serangan organisme pengganggu benih di gudang penyimpanan benih yang terdapat di lingkungan Departemen Perbenihan Tanaman, *Vocational Education Development Center for Agriculture* (VEDCA) Cianjur. Tahap pertama penelitian ini adalah pembuatan asap cair dari tempurung kelapa, tahap selanjutnya adalah penyemprotan asap cair pada benih jagung dan kedelai secara merata, dengan 4 konsentrasi yang berbeda yaitu 0% (kontrol), 0,5%, 1%, 2%, masing-masing perlakuan dilakukan dengan 3 kali ulangan, kemudian dilakukan pengeringan kembali sampai kadar air benih optimal, selanjutnya dikemas dalam karung terigu dan disimpan dalam waktu yang sama yaitu 72 hari. Pada hari ke-0, ke-36 dan hari ke-72, diambil beberapa sampel benih untuk uji daya kecambah dan uji kesehatan benih. Perlakuan asap cair dengan konsentrasi 0,5%, 1%, dan 2%, berpengaruh nyata terhadap perkecambahan benih jagung dan kedelai, setelah disimpan sampai 72 hari di gudang, dan konsentrasi 0.5% menunjukkan hasil yang terbaik.

Katakunci: Asap cair, antimikroba, pirolisis, tempurung kelapa, viabilitas benih