

INTISARI

AKTIVITAS ASAP CAIR LIMBAH BATANG TEMBAKAU SEBAGAI INSEKTISIDA TERHADAP LARVA *Spodoptera litura* FABRICIUS

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Spodoptera litura merupakan hama penting pada beberapa komoditas pertanian di Indonesia. Kerusakan daun akibat hama ini mampu menurunkan produktivitas tanaman secara signifikan. Pengendalian hama ini masih menggunakan insektisida kimia. Di sisi lain penggunaan insektisida kimia ini menyebabkan kerusakan lingkungan, resistensi hama, resurgensi hama, and keracunan pada manusia. Oleh karena itu penelitian terkait pengendalian hama yang ramah lingkungan sangat diperlukan. Salah satunya adalah penggunaan asap cair limbah batang tembakau sebagai insektisida terhadap *Spodoptera litura*. Tujuan dari penelitian ini untuk mengetahui aktivitas insektisida asap cair limbah batang tembakau sebagai insektisida terhadap larva *Spodoptera litura*. Penelitian dilaksanakan di Laboratorium Hama dan Penyakit, Balai Penelitian Tanaman Pemanis dan Serat pada bulan Agustus 2015 sampai dengan Januari 2016. Konsentrasi asap cair limbah batang tembakau yang digunakan untuk uji pematapan adalah 1,19; 2,91; 7,89; 11,49; 21,42; dan 89,98%. Asap cair limbah batang tembakau bersifat insektisida terhadap *S. litura* dengan persentase mortalitas tertinggi sebesar 95%. Selain bersifat toksik, asap cair limbah batang tembakau mampu menghambat perkembangan bobot larva, pupa, serta menghambat aktivitas makan *S. litura*. Pada uji penolak makan baik pada pakan pilihan dan tanpa pilihan mampu menghambat makan larva sampai dengan 80,19%. Sedangkan pada uji anti oviposisi asap cair memiliki persentase hambatan telur *S. litura* sampai dengan 59,76%. Aplikasi asap cair limbah batang tembakau dengan konsentrasi tertinggi 72,2% (setara LC_{95} %) tidak menyebabkan gejala fitotoksisitas berat pada tanaman pakcoy. Kandungan tertinggi asap cair batang tembakau yang diduga bersifat insektisida adalah asam asetat.

Kata kunci: aktivitas, asap cair, batang tembakau, *Spodoptera litura*

ABSTRACT

ACTIVITY OF LIQUID SMOKE OF TOBACCO STEM WASTE AS AN INSECTICIDE AGAINST *Spodoptera litura* FABRICIUS LARVAE

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Spodoptera litura is a significant pest on several agricultural commodities in Indonesia. Severe leaf damage due to this pest could decrease the crop production significantly. The control of this pest is mainly achieved by the use of chemical insecticide. On the other hand, the use of the insecticide has lead to serious environmental pollution, pest resistance, pest resurgence, and toxicity to human. Therefore the development of environmentally friendly techniques controlling insect pest are needed. One of such development is study on the activity of liquid smoke made from tobacco stem waste as an insecticide to *Spodoptera litura*. The objective of this study was to determine the activity of tobacco waste liquid smoke as an insecticide to *S. litura*. The research was studied at the Laboratory of Pest and Disease of Indonesian Sweetener and Fiber Crops Research Institute from August 2015 to January 2016. Concentration of liquid smoke used is 0; 1.19; 2.91; 7.89; 11.49; 21.42; and 89.98%. Tobacco stem waste liquid smoke has activity as an insecticide to *S. litura* with the highest percentage of mortality of 95%. Beside lethal effect, the liquid smoke inhibited the increase of weight of larval and pupal and also the feeding activity of the larval. *S. litura* that had been treated with liquid smoke and survived had lower larval and pupal weight in comparison with the control. The treatment of liquid smoke on choice and non choice test was able to suppress the feeding activity of larvae as much as 80,19%. While the anti-oviposition test of liquid smoke has a percentage of eggs obstacles *S. litura* as much as 59.76%. Application of waste liquid smoke with the highest concentration of 72.2% (equivalent $LC_{95}\%$) can be applied to Chinese lettuce without heavy fitotoxicity symptom. Predominat component in liquid smoke that role as insecticide was acetic acid.

Key words: activity, liquid smoke, waste tobacco stem, *Spodoptera litura*