

THE EFFECT OF ESSENTIAL OILS FROM CITRONELLA (*Cymbopogon nardus* L.) AND FRAGRANT PANDAN (*Pandanus amaryllifolius* Roxb) ON RICE WEEVIL CONTROL (*Sitophilus oryzae* L.)

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ABSTRACT

Sitophilus oryzae control using chemical pesticides cause many negative impacts. An alternative that can be use is botanical insecticides made from essential oils from citronella and fragrant pandan. The aim of this research was to determine the effect of citronella and fragrant pandan essential oils in controlling *S. oryzae* pests. This study was arranged in a Completely Randomized Design (CRD) with 8 treatments, namely control without treatment, control with acetone, citronella essential oil 10% and 15%, fragrant pandan essential oil 10%, fragrant essential oil 15%, mixture of citronella and fragrant pandan essential oils (1:1) 10% and a mixture of citronella and fragrant pandan essential oils (1:1) 15% with 3 replications. Data were analyzed using analysis of variance (ANOVA) at a 5% level. Further tests at a 5% LSD level if they show significant differences. The results showed that citronella essential oil 10% and 15% had an effect on *S. oryzae* mortality with 80 % and 100%, efficacy of 78% and 100%, speed of death of 2,5 and 3,2 individuals/day. This treatment was also able to suppress the population to 5 and 4 imagoes at 60th day, rice weight loss with 0,30g and 0,40g at 60th day, repellency with 93,94% and 94% not different from another essential oil traetments. Essential oils of citronella and fragrant pandan are able to control *S. oryzae*.

Keywords: *S. oryzae*, essential oil, citronella, fragrant pandan, botanical pesticides

PENGARUH MINYAK ATSIRI DAUN SERAI WANGI (*Cymbopogon nardus* L.) DAN DAUN PANDAN (*Pandanus amaryllifolius* Roxb) TERHADAP PENGENDALIAN HAMA KUTU BERAS (*Sitophilus oryzae* L)

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ABSTRAK

Pengendalian *S. oryzae* menggunakan pestisida kimia menimbulkan banyak dampak negatif. Alternatif pengendalian ramah lingkungan dapat dilakukan dengan penggunaan insektisida nabati berbahan minyak atsiri serai wangi dan pandan wangi. Tujuan penelitian untuk mengetahui pengaruh minyak atsiri serai wangi dan pandan wangi dalam pengendalian hama *S. oryzae*. Penelitian ini disusun dalam rancangan acak lengkap (RAL) dengan 8 perlakuan yaitu kontrol tanpa perlakuan, kontrol dengan aseton, minyak atsiri serai wangi konsentrasi 10 % dan 15 %, minyak atsiri pandan wangi 10% dan 15%, serta campuran minyak atsiri serai wangi dan pandan wangi (1:1) 10% dan campuran minyak atsiri serai wangi dan pandan wangi (1:1) 15% sebanyak 3 kali ulangan. Data dianalisis menggunakan analisis sidik ragam (ANOVA) taraf 5%. Uji lanjut *BNT* taraf 5% apabila menunjukkan perbedaan yang signifikan. Hasil penelitian menunjukkan bahwa minyak atsiri serai wangi konsentrasi 10% dan 15% memberikan pengaruh terhadap mortalitas *S. oryzae* dengan nilai 80% dan 100%, efikasi sebesar 78% dan 100%, kecepatan kematian pada 2,5 dan 3,2 ekor/hari. Perlakuan tersebut juga mampu menekan populasi hingga 5 dan 4 imago pada 60 hari. Penyusutan bobot beras sebesar 0,3 g dan 0,4 g pada 60 hari. Nilai repelensi sebesar 93,94% dan 94% tidak berbeda dengan perlakuan minyak atsiri pandan wangi penggunaan secara tunggal maupun campuran. Minyak atsiri serai wangi dan pandan wangi mampu mengendalikan *S. oryzae*.

Kata kunci: *S. oryzae*, Minyak Atsiri, Serai Wangi, Pandan Wangi, pestisida nabati