

POTENSI EKSTRAK TUMBUHAN *Drimys* spp. SEBAGAI
Repellent TERHADAP *Tribolium castaneum* Herbst

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ABSTRAK

Tribolium castaneum Herbst merupakan hama sekunder yang berpotensi merusak hasil pasca panen pertanian. Keberadaan *T. castaneum* pada gudang penyimpanan beras dapat menurunkan kualitas dan kuantitas beras, yang merupakan bahan pangan utama bagi sebagian besar masyarakat Indonesia. Penelitian ini bertujuan untuk mengetahui efektivitas ekstrak daun dan kulit batang *Drimys* spp. sebagai *repellent* terhadap *T. castaneum*, bagian organ yang paling berpotensi sebagai *repellent* serta golongan senyawa yang terkandung didalam ekstrak berpotensi sebagai *repellent* *T. castaneum*. Ekstraksi daun dan kulit batang *Drimys* spp. dilakukan dengan cara maserasi menggunakan pelarut *petroleum eter*. Pengujian *repellent* dilakukan menggunakan *olfaktometer*, dan analisis kandungan senyawanya dengan *GCMS*. Data hasil pengamatan dianalisis dengan *ANOVA* dan uji *Duncan* menggunakan aplikasi *SPSS 20*. Hasil penelitian menunjukkan bahwa ekstrak daun dan kulit batang *D. piperita*, *D. becariana*, dan *D. arfakensis* efektif sebagai penolak terhadap *T. castaneum*. Persentase *repellency* tertinggi ditunjukkan oleh ekstrak daun *D. becariana* konsentrasi 1000 ppm sebesar 97,5%. Jika dilihat berdasarkan konsentrasi maka persentase *repellency* tertinggi terdapat pada ekstrak daun *D. piperita* konsentrasi 62,5 ppm yaitu 91,25%. Hasil analisis *duncan* menunjukkan bahwa kombinasi perlakuan (jenis ekstrak* konsentrasi* waktu) yang paling berpengaruh terhadap efektivitas *repellency* adalah ekstrak daun *D. piperita* konsentrasi 500 ppm setelah dua jam pemaparan. Ekstrak daun *D. piperita* lebih efektif sebagai *repellent* terhadap *T. castaneum* dari pada ekstrak daun dan kulit batang *D. becariana*, daun dan kulit batang *D. arfakensis*, dan ekstrak kulit batang *D. piperita*. Peningkatan konsentrasi larutan uji tidak menunjukkan peningkatan yang linier terhadap efektivitas *repellency* *T. castaneum*. Ekstrak daun *D. piperita* (ekstrak paling berpotensi), mengandung 92 senyawa yang dikelompokkan kedalam senyawa monoterpen, seskuiterpen, diterpen, triterpen dan β -tocopherol (Vitamin E).

Kata kunci: *Drimys*, *repellent*, *Tribolium castaneum* Herbst, *GCMS*.

THE POTENTIAL OF *Drimys* spp. EXTRACT AS REPELLENT FOR *Tribolium castaneum* Herbst

ABSTRACT

T. castaneum is a potential insect to damage the yield of postharvest agriculture. The existence of *T. castaneum* in rice warehouse can decline quality and quantity of rice, which it is the main of staple food for most of Indonesian people. The aim of this research was to know the effectiveness of leaf and bark extracts of *Drimys* spp. as repellent against *T. castaneum*, the most potential organ as repellent, and group of compound which was contained in potential extracts as repellent against *T. castaneum*. Extraction of leaves and barks of *Drimys* spp. was conducted using olfactometer and analysis of compound concentration using GCMS. The data of observed result was analyzed using ANOVA and Duncan Multiple Range Test. The result of this research showed that leaf and bark extracts of *D. piperita*, *D. becariana*, and *D. arfakensis* were effective as repellent against *T. castaneum*. The highest percentage of repellency was indicated by leaf extract of *D. becariana* of 1000 ppm concentrations by 97,5%. If it was viewed based on ,concentration, then the highest percentage of repellency was in leaf extract of *D. piperita* of 62,5 ppm concentrations by 91,25%. The result of Duncan Test showed that treatment combination (types of extract* concentrations* time) which had the most influential effect against the effectiveness of repellency was leaf extract of *D. piperita* of 500 concentrations after 2 hours of exposure. Leaf extract of *D. piperita* was more effective as repellent against *T. castaneum* than leaf and bark extract of *D. becariana*, leaf and bark extract of *D. arfakensis*, and bark extract of *D. piperita*. Increasing concentration of solution test showed no linear increase against effectiveness of *T. castaneum* repellency. Leaf extract of *D. piperita* (the most potential extract) contained 92 compounds which were classified into monoterpenes, sesquiterpenes, diterpenes, triterpenes, and β -tocopherol.

Key Words: *Drimys*, repellent, *Tribolium castaneum* Herbst, GCMS.