

ABSTRACT

STUDY INHIBITION OF *Staphylococcus aureus*, IRRITATION TEST AND CHARACTERISTICS OF HAND SANITIZER WARU LEAF EXTRACT (*Hibiscus tiliaceus L*) IN ACID SOLUTION LIME PEEL EXTRACT (*Citrus aurantifolia Swingle*)

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The aim of the study was to determine the inhibition of *hand sanitizer* of bacterial hibiscus leaf extract against *Staphylococcus aureus*, the irritating effect, and the characteristics of the best hand sanitizer from hibiscus leaf extract in an acid solution of lime peel extract. The research was arranged in a Completely Randomized Block Design (RAKL) non-factorial with 6 levels of concentration of hibiscus leaf extract, namely 0%, 5%, 10%, 15%, 20% and 25% with 4 replications. The data obtained were tested for similarity of variance using the Bartlett test and additional data were tested using the Tuckey test. The data were analyzed by means of variance and if there was a difference, it was continued with the further test of BNT at the 5% level. The results showed that the concentration of hibiscus leaf extract had a significant effect on the inhibition, pH, and dispersion of the *hand sanitizer*. The best treatment was the use of 25% hibiscus leaf concentration (W5) in an acidic solution of lime extract which resulted in 16.18 mm of inhibition against *Staphylococcus aureus*; no irritation (no rash); with a characteristic pH 6,1; the gel formed was homogeneous and the dispersion was 6.4 cm.

Keywords: *Hand sanitizer, waru leaf extract, lime peel extract*

ABSTRAK

KAJIAN DAYA HAMBAT *Staphylococcus aureus*, UJI IRITASI DAN KARAKTERISTIK HAND SANITIZER DARI EKSTRAK DAUN WARU (*Hibiscus tiliaceus L*) DALAM LARUTAN ASAM EKSTRAK KULIT JERUK NIPIS (*Citrus aurantifolia Swingle*)

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Tujuan penelitian ini adalah untuk mengetahui daya hambat *hand sanitizer* ekstrak daun waru terhadap bakteri *Staphylococcus aureus*, efek iritasi, dan karakteristik *hand sanitizer* terbaik dari ekstrak daun waru dalam larutan asam ekstrak jeruk nipis. Penelitian ini disusun dalam Rancangan Acak Kelompok Lengkap (RAKL) non faktorial dengan 6 taraf konsentrasi ekstrak daun waru yaitu 0%, 5%, 10%, 15%, 20% dan 25% dengan ulangan sebanyak 4 kali. Data yang diperoleh diuji kesamaan ragamnya dengan menggunakan uji Bartlett dan kementerian data diuji dengan uji Tuckey. Data dianalisis dengan sidik ragam dan apabila terdapat perbedaan dilanjutkan dengan uji lanjut BNT pada taraf 5%. Hasil penelitian menunjukkan penggunaan konsentrasi ekstrak daun waru berpengaruh nyata terhadap daya hambat, pH, dan daya sebar *hand sanitizer*. Perlakuan terbaik adalah penggunaan konsentrasi daun waru 25% (W5) dalam larutan asam ekstrak jeruk nipis menghasilkan daya hambat terhadap bakteri *Staphylococcus aureus* sebesar 16,18 mm; tidak terjadi iritasi (tidak terdapat ruam); dengan karakteristik pH 6,1; gel yang terbentuk homogen dan daya sebar sebesar 6,4 cm.

Kata kunci : *Hand sanitizer, ekstrak daun waru, ekstrak kulit jeruk nipis*