

## ABSTRACT

### FORMULATION OF A LIQUID *HAND WASH* COMBINING 70% ETHANOL EXTRACT OF BUTTERFLY PEA FLOWER (*Clitoria ternatea L.*) AND LEMONGRASS ESSENTIAL OIL (*Cymbopogon citratus*) AND ITS ANTIBACTERIAL ACTIVITY AGAINST *STAPHYLOCOCCUS AUREUS*

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**Background:** Butterfly pea flower and lemongrass have antibacterial properties that have the potential as a natural liquid hand wash that is effective against *Staphylococcus aureus* and safe for the skin.

**Objective:** This study aims to formulate a liquid hand wash combination of 70% ethanol extract of butterfly pea flower (*Clitoria ternatea L.*) and essential oil of lemongrass (*Cymbopogon citratus*) and evaluate its antibacterial activity.

**Methods:** The profile of secondary metabolite compounds can be observed through phytochemical screening and GC-MS was then formulated with F1 (70% ethanol extract of butterfly pea flower (70% ethanol extract of butterfly pea flower 12% and essential oil of kitchen lemongrass 2.30%), F2 (70% ethanol extract of butterfly pea flower 14% and essential oil of lemongrass 4.60%), F3 (70% ethanol extract of butterfly pea flower 14% and essential oil of 4.60%), F3 (70% ethanol extract of 16% butterfly pea flower and lemongrass essential oil 6.90%), and evaluated the results. 6.90%) and evaluation of the preparation includes organoleptical test, homogeneity, pH, moisture content, foam height, specific gravity and viscosity as well as antibacterial tests with the well diffusion method against *Staphylococcus aureus* bacteria.

**Results:** The handwash preparation of each formulation has fulfilled the physical quality test and produced an inhibition zone in F1; F2; F3 is 6.55 mm; 7.61 mm; 8.65 mm on *Staphylococcus aureus* bacteria.

**Conclusion:** The largest inhibition zone diameter was produced by F3 on *Staphylococcus aureus* bacteria.

**Keywords:** Butterfly Pea Flower, Lemongrass, Liquid Soap, Antibacterial, *Staphylococcus aureus*

## ABSTRAK

### FORMULASI SEDIAAN *HAND WASH* CAIR KOMBINASI EKSTRAK ETANOL 70% BUNGA TELANG (*Clitoria ternatea L.*) DAN MINYAK ATSIRI SERAI DAPUR (*Cymbopogon citratus*) SERTA AKTIVITASNYA SEBAGAI ANTIBAKTERI TERHADAP *Staphylococcus aureus*

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**Latar belakang :** Bunga telang dan serai dapur memiliki sifat antibakteri yang berpotensi sebagai *hand wash* cair alami yang efektif melawan *Staphylococcus aureus* dan aman bagi kulit.

**Tujuan :** Penelitian ini bertujuan untuk memformulasikan *hand wash* cair kombinasi ekstrak etanol 70% bunga telang (*Clitoria ternatea L.*) dan minyak atsiri serai dapur (*Cymbopogon citratus*) serta mengevaluasi aktivitas antibakterinya.

**Metode:** Profil senyawa metabolit sekunder dapat dilihat melalui skrining fitokimia dan GC-MS yang kemudian dilakukan formulasi dengan F1 (ekstrak etanol 70% bunga telang 12% dan minyak atsiri serai dapur 2,30%), F2 (ekstrak etanol 70% bunga telang 14% dan minyak atsiri serai dapur 4,60%), F3 (ekstrak etanol 70% bunga telang 16% dan minyak atsiri serai dapur 6,90%) serta dilakukan evaluasi sediaan mencakup uji organoleptis, homogenitas, pH, kadar air, tinggi busa, bobot jenis dan viskositas serta uji antibakteri dengan metode difusi sumuran terhadap bakteri *Staphylococcus aureus*.

**Hasil :** Sediaan *hand wash* setiap formulasi telah memenuhi uji evaluasi sediaan dan menghasilkan zona hambat pada F1; F2; F3 adalah 6,55 mm; 7,61 mm; 8,65 mm pada bakteri *Staphylococcus aureus*.

**Simpulan :** Diameter zona hambat terbesar dihasilkan oleh F3 pada bakteri *Staphylococcus aureus*.

**Kata kunci :** Bunga Telang, Serai Dapur, Sabun Cair, Antibakteri, *Staphylococcus aureus*