

INTISARI

AGUNG, DEWADITA, G., 2019, UJI AKTIVITAS ANTIBAKTERI EMULGEL MINYAK ATSIRI RIMPANG JAHE MERAH (*Zingiber officinale* var. *rubrum*) TERHADAP BAKTERI *Staphylococcus aureus* ATCC 25923 SECARA *in vivo*, SKRIPSI, FAKULTAS FARMASI, UNIVERSITAS SETIA BUDI, SURAKARTA.

Rimpang jahe merah diketahui memiliki aktivitas antibakteri terhadap bakteri *Staphylococcus aureus*. Rimpang jahe merah yang diambil kandungan minyak atsiri lalu diformulasi menjadi sediaan emulgel dengan variasi konsentrasi minyak atsiri. Penelitian ini bertujuan untuk mengetahui aktivitas antibakteri emulgel minyak atsiri rimpang jahe merah terhadap infeksi bakteri *Staphylococcus aureus* ATCC 25923 secara *in vivo*.

Rimpang jahe merah diambil minyak atsiri dengan metode destilasi uap air selama 5-6 jam. Minyak atsiri rimpang jahe merah diformulasi menjadi 3 formula dengan perbedaan konsentrasi 15%, 20%, dan 25%. Sediaan emulgel dari setiap formula di uji organoleptis, homogenitas, pH, viskositas, daya sebar, daya lekat, dan stabilitasnya. Uji antibakteri sediaan emulgel dengan mengamati waktu penyembuhan infeksi berdasarkan hilangnya eritema, nanah, dan penurunan jumlah koloni bakteri yang dilakukan dengan metode *Plate count*. Data yang diperoleh diolah secara statistik dengan uji *Kolmogorov-Smirnov* dilanjutkan dengan uji *two way anova*.

Minyak atsiri rimpang jahe merah dapat dibuat sediaan emulgel dengan mutu fisik yang baik dan stabilitas yang baik pada konsentrasi 20% dan 25%. Hasil uji statistik terhadap aktivitas antibakteri emulgel minyak atsiri rimpang jahe merah menyatakan bahwa konsentrasi 25% memiliki efek penyembuhan paling optimal terhadap bakteri *Staphylococcus aureus* ATCC 25923 yang diinfeksi pada kelinci.

Kata kunci : *Zingiber officinale* var. *rubrum* , minyak atsiri, emulgel, antibakteri, *Staphylococcus aureus*.

ABSTRACT

AGUNG, DEWADITA, G., 2019, TEST OF ANTIBACTERIAL ACTIVITY OF EMULGEL RED GINGER RHIZOME ESSENTIAL (*Zingiber officinale* var. *rubrum*) TO BACTERIA *Staphylococcus aureus* ATCC 25923 *in vivo*, SKRIPSI, FACULTY OF PHARMACY, SETIA BUDI UNIVERSITY, SURAKARTA.

Red ginger rhizome are known to have antibacterial activity against the bacterium *Staphylococcus aureus*. The rhizome of red ginger taken from the oil content is then formulated into emulgel preparations with variations in essential oil concentrates. The aim of this study was to determine the antibacterial activity of red ginger rhizome essential oil emulgel against the infection of *Staphylococcus aureus* ATCC 25923 *in vivo*.

Red ginger rhizome of essential oil is taken by the steam distillation method for 5-6 hours. The oil of the red ginger rhizome is formulated into 3 formulas with a concentration difference of 15%, 20%, and 25%. The emulgel preparations of each formula were organoleptic, homogeneity, pH, viscosity, dispersion, adhesion and stability. Antibacterial test of emulgel preparations by observing the healing time of infection based on loss of erythema, pus, and decreasing the number of bacterial colonies carried out by the Plate count method. The data obtained were processed statistically by the Kolmogorov-Smirnov test followed by the two way ANOVA test.

Red ginger essential oil can be made emulgel preparation with good physical quality and good stability at a concentration of 20% and 25%. The results of statistical tests on the antibacterial activity of red ginger rhizome essential oil emulgel revealed that the concentration of 25% had the most optimal healing effect on the bacterium *Staphylococcus aureus* ATCC 25923 which was infected in rabbits.

Keyword : *Zingiber officinale* var. *rubrum* , essential oil, *emulgel*, antibacterial, *Staphylococcus aureus*.