

ABSTRAK

Prince Elisabeth Silalahi, NIM 4173220016 (2017), Uji Aktivitas Antibakteri Ekstrak Jahe Merah (*Zingiber officinale* var. Rubrum) Terhadap Bakteri *Bacillus cereus* dan *Salmonella thypi*.

Jahe merah (*Zingiber officinale* var. Rubrum) mengandung senyawa aktif diantaranya alkaloid, flavonoid, oleorosin, minyak atsiri, saponin dan tanin. Senyawa tersebut bersifat antibakteri yang mampu menghambat pertumbuhan bakteri penyebab diare. Penelitian ini bertujuan untuk menguji aktivitas antibakteri dan mengetahui konsentrasi hambat minimum (KHM) ekstrak jahe merah (*Zingiber officinale* var. Rubrum) terhadap bakteri *Bacillus cereus* dan *Salmonella thypi*. Penelitian menggunakan metode deskriptif kualitatif melalui tahap pengujian eksperimental di laboratorium. Ekstrak jahe merah diperoleh dengan menggunakan metode maserasi dengan pelarut etanol 96%. Ekstrak yang dihasilkan dilanjutkan dengan uji fitokimia pada senyawa alkaloid, flavonoid, tanin, saponin dan steroid/triterpenoid. Uji aktivitas antibakteri dilakukan dengan metode *disc diffusion* Kirby-Baurer. Pada uji KHM digunakan variasi konsentrasi ekstrak, yaitu 10%, 20%, 30%, 40%, 50%, ciprofloxacin sebagai kontrol positif dan etanol 96% sebagai kontrol negatif. Hasil uji fitokimia menunjukkan senyawa aktif yang terkandung dalam ekstrak jahe merah adalah alkaloid, flavonoid, saponin dan steroid/triterpenoid. Uji aktivitas menunjukkan bahwa ekstrak jahe merah mampu menghambat pertumbuhan bakteri *Bacillus cereus* dan *Salmonella thypi*. Pada uji KHM, konsentrasi 10% dinyatakan sebagai KHM karena merupakan konsentrasi terkecil yang sudah memiliki daya hambat pada bakteri *Bacillus cereus* dan *Salmonella thypi* dengan zona hambat masing-masing sebesar 7,5 mm dan 7,03 mm. Berdasarkan penelitian ini, ekstrak jahe merah (*Zingiber officinale* var. Rubrum) memiliki aktivitas antibakteri terhadap bakteri *Bacillus cereus* dan *Salmonella thypi*.

Kata kunci: Ekstrak jahe merah, bakteri *Bacillus cereus*, bakteri *Salmonella thypi*, antibakteri, konsentrasi hambat minimum



ABSTRACT

Prince Elisabeth Silalahi, NIM 4173220016 (2017), Antibacterial Activity Test of Red Ginger Extract (*Zingiber officinale* var. *Rubrum*) Against *Bacillus cereus* and *Salmonella thypi* bacteria.

Red ginger (*Zingiber officinale* var. *Rubrum*) contains active compounds including alkaloids, flavonoids, oleorosin, essential oils, saponins and tannins. These compounds are antibacterial which can inhibit the growth of bacteria that cause diarrhea. This study aimed to test the antibacterial activity and determine the minimum inhibitory concentration (MIC) of red ginger extract (*Zingiber officinale* var. *Rubrum*) against *Bacillus cereus* and *Salmonella thypi* bacteria. The study used a qualitative descriptive method through the experimental testing phase in the laboratory. Red ginger extract was obtained by using the maceration method with 96% ethanol as solvent. The resulting extract was continued with phytochemical tests on alkaloids, flavonoids, tannins, saponins and steroids/triterpenoids. The antibacterial activity test was carried out using the Kirby-Bauer disc diffusion method. In the MIC test, various extract concentrations were used, namely 10%, 20%, 30%, 40%, 50%, ciprofloxacin as a positive control and etanol 96% as a negative control. The results of the phytochemical test showed that the active compounds contained in red ginger extract were alkaloids, flavonoids, saponins and steroids/triterpenoids. The activity test showed that red ginger extract was able to inhibit the growth of *Bacillus cereus* and *Salmonella thypi* bacteria. In the MIC test, a concentration of 10% was declared as MIC because it was the smallest concentration that already had inhibitory power on *Bacillus cereus* and *Salmonella thypi* bacteria with inhibition zones of 7.5 mm and 7.03 mm, respectively. Based on this research, red ginger extract (*Zingiber officinale* var. *Rubrum*) has antibacterial activity against *Bacillus cereus* and *Salmonella thypi* bacteria.

Keywords: Red ginger extract, *Bacillus cereus* bacteria, *Salmonella typhi* bacteria, antibacterial, minimum inhibitory concentration

