Abstrak

PENETAPAN KADAR FENOLIK TOTAL DAN UJI AKTIVITAS ANTIBAKTERI EKSTRAK ETIL ASETAT BIJI KURMA (*Phoenix dactylifera* L.) TERHADAP *Escherichia coli* dan *Salmonella typhi*

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Latar belakang: Biji kurma merupakan tanaman yang mengandung flavonoid, tannin, senyawa fenolik yang diketahui mempunyai aktivitas antibakteri. Penelitian ini bertujuan untuk mengetahui kadar fenolik total dan aktivitas antibakteri dalam ekstrak etil asetat biji kurma terhadap bakteri *Echerichia coli* dan *Salmonella typhi*.

Metodologi: Penelitian dilakukan dengan cara ekstraksi dengan metode maserasi menggunakan pelarut etil asetat. Penetapan kadar fenolik total menggunakan metode *Folin-Ciocalteu* dengan senyawa pembanding asam galat. Sedangkan uji aktivitas antibakteri dilakukan dengan metode difusi Kirby-bauer menggunakan 5 variasi konsetrasi 2, 4, 6, 8, 10 %. Kontrol positif menggunakan cakram berisi Metronidazole 5µg untuk bakteri *E. coli* sedangkan Tiamfenikol 30µg untuk bakteri *S. typhi* dengan media *Mueller Hinton Agar* (MHA) diinkubasi selama 1x24 jam dan kontrol negatif menggunakan DMSO. Data yang diperoleh untuk penentuan kadar fenolik total dianalisis secara deskriptif kuantitatif dan data aktivitas antibakteri berupa diameter zona hambat kemudian dianalisis menggunakan *ANOVA one way test*.

Hasil Penelitian: Hasil penelitian menunjukan bahwa ekstrak etil asetat biji kurma memiliki kadar fenolik total sebesar 50,3 ± 3, 175 mgGAE/g dan memiliki aktivitas antibakteri dengan diameter zona hambat terhadap pertumbuhaan bakteri *E. coli* sebesar 15,57 mm dan *S. typhi* 14,33 mm pada konsentrasi 10 %.

Kesimpulan: Ekstrak etil asetat *P. dactylifera* L. memiliki aktivitas antibakteri yang lebih besar terhadap E. coli dibanding S. typhi meskipun tidak berbeda signifikan.

Kata kunci: Ekstrak etil asetat *P. dactylifera* L., Fenolik Total, Aktivitas Antibakteri *Escherichia coli* dan *Salmonella typhi*

ABSTRACT

TOTAL PHENOLIC CONTENT AND ANTIBACTERIAL ACTIVITY OF ETHYL ACETATE EXTRACT OF Phoenix dactylifera L. (Date Palm) SEEDS AGAINST *Escherichia coli* and *Salmonella typhi*

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Background: Seeds of dates (*Phoenix dactylifera* L.) were plants that contained pnenolic compounds such as flavonoids and tannins. These compounds were able to inhibit bacterial activity. This research aims for knowing total phenolic content and antibacterial activity of the ethyl acetate extract of seeds dates against *Echerichia coli* and *Salmonella typhi*.

Methods: Seeds dates extract were obtained using maceration extraction by ethyl acetate as the solvent. The total phenolic content of the extract was determined quantitatively using the *Folin-Ciocalteu* reagent, with Gallic acid as the standard. Antibacterial activity was assessed by Kirby-Bauer diffusion method, the concentrations of seeds dates extract were 2%, 4%, 6%, 8%, and 10%. Metronidazole 5 µg was used as positive control against *E.* coli, Tiamfenikol 30 µg was used as positive control against *S. typhi*, and DMSO was used as negative control. The *Mueller Hinton Agar* (MHA) media were then incubated at 37° C for 1x24 hours. The data of determination total phenolic content were analyzed descriptive quantitatively and data of inhibition zone diameter on antibacterial activity test wew analyzed using one way analysis of variance (*ANOVA*).

Result: The results exhibited that the total phenolic content of ethyl acetate seed dates extract was 50,3 ± 3, 175 mgGAE/g. The largest zones of inhibition were achieved using the concentration of 10% against *E. coli* was 15.57 mm and *S. typhi* was 14.33 mm. It can be concluded that ethyl acetate extract of seeds *P. dactylifera* was more effective against *E. coli* than *S. typhi*, although they were not too different significantly.

Keywords: Ethyl acetate extract of *P. dactylifera* L. , Total Phenolic, Antibacterial Activity *Escherichia coli* and *Salmonella typhi*