

ABSTRAK

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Judul : Perbandingan Efektivitas Ekstrak Daging dan Biji Kurma Ajwa (*Phoenix dactylifera* L.) terhadap Bakteri *Aggregatibacter actinomycetemcomitans* dengan Konsentrasi 70% dan 100%

Bentuk periodontitis agresif dapat disebabkan oleh bakteri *Aggregatibacter actinomycetemcomitans*. Bahan kimia antibakteri dipakai dalam upaya pencegahan. Peneliti bertujuan untuk menentukan apakah konsentrasi ekstrak 70% atau 100% dari daging atau biji kurma ajwa lebih berhasil dalam membunuh bakteri *Aggregatibacter actinomycetemcomitans*. Studi ini mempergunakan metode difusi cakram dalam pengaturan eksperimental dengan desain kontrol pasca-uji saja. Laboratorium Terpadu Universitas Prima Indonesia mengkulturkan populasi murni *Aggregatibacter actinomycetemcomitans*, yang berfungsi sebagai populasi penelitian. Enam kategori dipakai untuk mengklasifikasikan 36 sampel. Pengujian antimikroba dilakukan menggunakan teknik difusi cakram, yang mengukur diameter zona inhibisi dalam milimeter. Uji *Kruskal-Wallis* dan *Mann-Whitney* dipakai untuk menganalisis data. Hasil penelitian memperlihatkan bahwa rerata diameter zona inhibisi daging kurma Ajwa (*Phoenix dactylifera* L.) pada konsentrasi 70% dan 100% masing-masing adalah $8,82 \pm 1,02$ mm dan $10,51 \pm 1,28$ mm. Kelompok biji kurma memiliki rerata diameter zona inhibisi sejumlah $15,61 \pm 0,72$ mm dan $16,84 \pm 0,57$ mm pada dosis 70% dan 100%, sedangkan klorheksidin sejumlah $19,65 \pm 0,380$ mm. Tidak terdapatnya inhibisi terhadap bakteri *Aggregatibacter actinomycetemcomitans* terlihat pada kategori kontrol yang diberi DMSO. Menurut uji *Kruskal-Wallis*, semua kelompok pada daging dan biji kurma Ajwa memiliki diameter zona inhibisi yang berbeda secara signifikan ($p=0,000$; $p<0,05$). Uji *Mann-Whitney* mengungkapkan bahwa kemanjuran antibakteri kedua kelompok berbeda, kecuali ekstrak daging kurma Ajwa (*Phoenix dactylifera* L.), yang tidak memperlihatkan efek signifikan kepada bakteri *Aggregatibacter actinomycetemcomitans* baik pada konsentrasi 100% maupun 70% ($p=0,055$; $p>0,05$). Singkatnya, hasil penelitian memperlihatkan bahwa bakteri *Aggregatibacter actinomycetemcomitans* dapat ditargetkan secara efektif oleh ekstrak kurma Ajwa.

Kata kunci:

Aggregatibacter actinomycetemcomitans, kurma ajwa, antibakteri, periodontitis

ABSTRACT

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Title : Comparison of the Effectiveness of Ajwa Date (*Phoenix dactylifera* L.) Flesh and Seed Extracts against *Aggregatibacter actinomycetemcomitans* Bacteria with 70% and 100% Concentrates

An aggressive form of periodontitis may be caused by the bacteria *Aggregatibacter actinomycetemcomitans*. Antibacterial chemicals are used in prevention efforts. The researchers set out to determine if a 70% or 100% concentration of extracts from the flesh or seeds of the Ajwa date (*Phoenix dactylifera* L.) was more successful in killing the bacterium *Aggregatibacter actinomycetemcomitans*. This study used the disc diffusion method in an experimental setting using a post-test control only design. Prima Indonesia University's Integrated Laboratory cultured a pure population of *Aggregatibacter actinomycetemcomitans*, which served as the research population. Six categories were used to classify the 36 samples. Antimicrobial testing was conducted using the disc diffusion technique, which quantifies the inhibition zone diameter in millimeters. Kruskal-Wallis and Mann-Whitney U tests were used to analyze the data. The findings revealed that $8,82 \pm 1.02$ mm and $10,51 \pm 1.28$ mm, respectively, were the average diameters of the inhibition zones of Ajwa date (*Phoenix dactylifera* L.) meat at 70% and 100% concentrations. The date seed group had an average inhibitory zone diameter of $15,61 \pm 0.72$ mm and $16,84 \pm 0.57$ mm at 70% and 100% doses, respectively, whereas chlorhexidine was 19.65 ± 0.380 mm. The absence of inhibition against *Aggregatibacter actinomycetemcomitans* bacteria was seen in the DMSO-treated control group. According to the Kruskal-Wallis test, all groups in the Ajwa date flesh and seeds had significantly different inhibitory zone diameters ($p=0.000$; $p<0.05$). The Mann-Whitney U test revealed that the two groups' antibacterial efficacy differed, with the exception of the Ajwa date (*Phoenix dactylifera* L.) flesh extract, which did not show any significant effect against *Aggregatibacter actinomycetemcomitans* bacteria at either the 100% or 70% concentrations ($p=0.055$; $p>0.05$). To sum up, the results show that the *Aggregatibacter actinomycetemcomitans* bacteria may be effectively targeted by an Ajwa date extract. .

Keywords:

Aggregatibacter actinomycetemcomitans, ajwa dates, antibacterial, periodontitis