

EFFECTIVENESS OF DECORATED GUAVA LEAVES IN INHIBITING THE GROWTH OF STAPHYLOCOCCUS AUREUS BACTERIA CAUSES OF GINGIVITIS

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ABSTRACT

Background : Gingivitis is an inflammation of the gums caused by plaque and bacterial buildup. Staphylococcus aureus is a gram-positive bacterium that is one of the causes of localized infections with symptoms of pain and inflammation. Gingivitis can be prevented naturally by using natural plants, one of which is guava leaves (*Psidium guajava* L.), which are known to contain antibacterial properties such as tannins, flavonoids, and saponins.

Objective : It is known that the effectiveness of boiled guava leaves in inhibiting bacterial growth *Staphylococcus aureus* causes gingivitis with concentrations of 25%, 50%, 75%, 100%.

Method : This research was an experimental laboratory study with a post-test group-only design using the well diffusion method. The study was conducted in July 2025. The research location was the laboratory of the Medical Laboratory Technology Department of the Ministry of Health Polytechnic of Yogyakarta, with 15 bacterial isolates as samples. *Staphylococcus aureus* grown on Mueller-Hinton (MHA) media. Samples were divided into control (ciprofloxacin antibiotic) and treatment (guava leaf decoction) groups with three replications. The clear zone formed in the petri dish was measured using a vernier caliper. Data normality was tested using the Shapiro-Wilk test and data homogeneity was tested using the Levene test.

Results : The results of testing the antibacterial activity of guava leaf decoction preparations against *Staphylococcus aureus* bacteria from the four concentrations have activity against *Staphylococcus aureus* bacteria with each inhibition zone diameter of 25% concentration having an average of 15.8 mm, 50% concentration having an average of 16.83 mm, 75% concentration having an average of 17.73 mm, and 100% concentration having an average of 26.5 mm.

Conclusion : Guava leaf decoction can inhibit growth *Staphylococcus aureus* less effective

Keywords: Guava leaf decoction, *Staphylococcus aureus*, Gingivitis

EFEKTIVITAS REBUSAN DAUN JAMBU BIJI DALAM MENGHAMBAT PERTUMBUHAN BAKTERI *STAPHYLOCOCCUS AUREUS* PENYEBAB GINGIVITIS

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ABSTRAK

Latar belakang : *Gingivitis* merupakan peradangan pada gusi yang disebabkan penumpukan plak dan bakteri. *Staphylococcus aureus* merupakan bakteri gram positif yang menjadi salah satu penyebab infeksi lokal dengan gejala nyeri dan peradangan. Pencegahan *gingivitis* dapat dilakukan secara alami melalui pemanfaatan tanaman dari alam, salah satunya daun jambu biji (*Psidium guajava L.*), yang diketahui memiliki kandungan antibakteri seperti *tanin*, *flavonoid*, dan *saponin*.

Tujuan : Diketuainya efektivitas rebusan daun jambu biji dalam menghambat pertumbuhan bakteri *Staphylococcus aureus* penyebab *gingivitis* dengan konsentrasi 25%, 50%, 75%, 100%.

Metode : Jenis penelitian ini adalah eksperimental laboratorium dengan rancangan *post-test group only* dengan metode difusi sumuran. Penelitian dilaksanakan pada bulan juli 2025. Lokasi penelitian dilaboratorium Jurusan Teknologi Laboratorium Medis Poltekkes Kemenkes Yogyakarta dengan sampel sebanyak 15 isolat bakteri *Staphylococcus aureus* yang ditanam pada media *Mueller-Hinton* (MHA). Sampel dibagi menjadi kelompok kontrol (antibiotik *ciprofloxacin*) dan perlakuan (rebusan daun jambu biji) dengan tiga kali pengulangan. Zona bening yang terbentuk pada cawan petri diukur menggunakan jangka sorong. Uji normalitas data menggunakan uji *shapiro-wilk* dan uji homogenitas data menggunakan uji *levne*.

Hasil : Hasil pengujian aktivitas antibakteri sediaan rebusan daun jambu biji terhadap bakteri *Staphylococcus aureus* dari keempat konsentrasi memiliki aktivitas terhadap bakteri *Staphylococcus aureus* dengan masing-masing diameter zona hambat konsentrasi 25% memiliki rerata 15,8 mm, konsentrasi 50% memiliki rerata 16,83 mm, konsentrasi 75% memiliki rerata 17,73 mm, dan konsentrasi 100% memiliki rerata 26,5 mm.

Kesimpulan : Rebusan daun jambu biji dalam menghambat pertumbuhan bakteri *Staphylococcus aureus* termasuk dalam kategori kurang efektif.

Kata kunci: Rebusan daun jambu, *Staphylococcus aureus*, *Gingivitis*