

Dalam Bahasa Indonesia :

ABSTRAK

Wulan Retno Widyanti¹, Demes Nurmayanti², Marlik³

PENGARUH LAMA PENYIMPANAN EKSTRAK KULIT JERUK, BONGGOL PISANG DAN BELIMBING WULUH TERHADAP DAYA HAMBAT

BAKTERI (*Staphylococcus aureus*)

1x + xv + 62 Halaman + 10 Tabel + 6 Lampiran

Indonesia menghasilkan 19 juta ton sampah pada 2023, 41,38% belum terkelola. Sampah organik seperti kulit jeruk, bonggol pisang, dan belimbing wuluh kaya flavonoid antibakteri, namun efektivitasnya menurun seiring waktu. Penelitian ini mengkaji pengaruh lama penyimpanan ekstrak pada daya hambat bakteri *Staphylococcus aureus*.

Penelitian menggunakan desain *true experiment* dengan *posttest only control group*, ekstrak diuji kandungan flavonoid dan daya hambat bakteri menggunakan metode difusi sumuran pada tiga lama penyimpanan (7, 14, dan 21 hari) dalam suhu ruang 25–35°C dan kelembaban 30–60 dengan replikasi sebanyak tiga kali. Analisis data menggunakan Two Way ANOVA dan post hoc Tukey.

Hasil didapatkan kadar flavonoid pada ekstrak belimbing wuluh (2,23%), diikuti kulit jeruk (1,42%), dan bonggol pisang (1,01%). Daya hambat pada ketiga ekstrak terbesar ada pada hari ke-7 penyimpanan, menurun signifikan pada hari ke-14, stabil pada hari ke-21. Uji statistik menunjukkan pengaruh signifikan dari jenis ekstrak dan lama penyimpanan terhadap daya hambat bakteri.

Disarankan untuk menguji variasi konsentrasi ekstrak untuk menentukan dosis efektif dalam menghambat pertumbuhan *Staphylococcus aureus* serta menganalisis senyawa antibakteri lain seperti alkaloid, saponin, dan tanin untuk pemahaman lebih lanjut mengenai mekanisme kerja ekstrak.

Kata kunci : lama penyimpanan , kulit jeruk, bonggol pisang, belimbing wuluh, *Staphylococcus aureus*

Daftar bacaan : 10 buku (2008-2023), 54 jurnal/artikel ilmiah (2015-2024)

Dalam Bahasa Inggris :

ABSTRACT

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THE EFFECT OF STORAGE DURATION OF ORANGE PEEL, BANANA PSEUDOSTEM, AND STARFRUIT EXTRACTS AGAINST THE INHIBITORY POWER OF BACTERIA (*Staphylococcus aureus*)

1x + vx + 62 Pages + 10 Tables + 6 Appendices

Indonesia generated 19 million tons of waste in 2023, with 41.38% unmanaged. Organic waste such as orange peels, banana stems, and bilimbi fruit contains antibacterial flavonoids, though their effectiveness declines over time. This study investigates the effect of extract storage duration on the inhibition of *Staphylococcus aureus*.

This study utilized a true experimental design featuring a post-test-only control group. Extracts were tested for flavonoid content and antibacterial activity using the well diffusion method after 7, 14, and 21 days of storage at room temperature (25–35°C) and humidity (30–60%). Each treatment and control was replicated three times. Data were analyzed using Two Way ANOVA and Tukey's post hoc test.

Results showed the highest flavonoid content in bilimbi extract (2.23%), followed by orange peel (1.42%) and banana stem (1.01%). The greatest inhibition occurred on day 7, decreased significantly by day 14, and stabilized by day 21. Statistical tests confirmed significant effects of extract type and storage duration on antibacterial activity.

Further research is suggested to examine different extract concentrations to determine effective doses for inhibiting *S. aureus*, and to analyze other antibacterial compounds such as alkaloids, saponins, and tannins for a deeper understanding of their mechanisms.

Keywords : storage duration, orange peel, banana pseudostem, starfruit, *Staphylococcus aureus*

References : 10 books (2008-2023), 54 journals (2015-2024)