

**FAKULTAS KEDOKTERAN DAN ILMU KESEHATAN
UNIVERSITAS MUHAMMADIYAH MAKASSAR
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**FORMULASI DAN UJI EFEKTIVITAS SEDIAAN ACNE PATCH EKSTRA
K ETANOL DAUN NANGKA (*Artocarpus Heterophyllus Lam*) TERHADAP
*Propionibacterium acnes***

ABSTRAK

Latar Belakang : *Acne vulgaris* merupakan peradangan kronik pada folikel *pilosebacea* yang sering terjadi pada masa remaja dan disebabkan oleh bakteri *Propionibacterium acnes*. Penggunaan antibiotik sintetis yang tidak tepat dapat menimbulkan resistensi, sehingga diperlukan alternatif alami yang efektif. Daun nangka (*Artocarpus heterophyllus Lam*) diketahui memiliki kandungan flavonoid, saponin, dan tanin yang bersifat antibakteri.

Tujuan Penelitian : Penelitian ini bertujuan untuk memformulasi sediaan *acne patch* dari ekstrak etanol daun nangka dan menguji efektivitas antibakterinya terhadap *Propionibacterium acnes* secara *in vitro*, serta menilai stabilitas fisik *patch* sebelum dan sesudah *cycling test*.

Metode Penelitian : Jenis penelitian adalah eksperimental laboratorium dengan metode difusi agar. Ekstraksi daun nangka dilakukan secara maserasi menggunakan etanol 96%. *Acne patch* diformulasikan dengan konsentrasi ekstrak 1%, 3%, dan 5% (F1, F2, F3) serta diuji karakteristik fisiknya (organoleptik, ketebalan, kelembapan, pH, dll.). Efektivitas diuji berdasarkan diameter zona hambat pertumbuhan *P. acnes*.

Hasil Penelitian : Hasil uji menunjukkan bahwa semua formula *patch* mengandung senyawa aktif antibakteri dan memiliki stabilitas fisik yang baik. Formula F3 (5%) menunjukkan daya hambat paling tinggi dengan diameter zona hambat >14 mm yang dikategorikan sebagai kuat. Terdapat perbedaan signifikan efektivitas antara formula ($p < 0,05$) berdasarkan hasil uji ANOVA.

Kesimpulan : *Acne patch* yang diformulasikan dengan ekstrak etanol daun nangka (*Artocarpus heterophyllus Lam*) menunjukkan stabilitas fisik yang baik sebelum dan sesudah uji *cycling*. Formula dengan konsentrasi 5% menunjukkan efektivitas tertinggi dalam menghambat pertumbuhan *Propionibacterium acnes*. Uji statistik ANOVA menunjukkan perbedaan yang signifikan antar formula ($p < 0,05$), dan hasil uji *Paired Sample t-Test* menunjukkan bahwa sifat antibakteri ekstrak bersifat bakteriostatik.

Kata Kunci : *Acne patch*, daun nangka, *Propionibacterium acnes*

**FORMULATION AND EFFECTIVENESS TEST OF ACNE PATCH
PREPARATIONS MADE FROM ETHANOL EXTRACT OF
JACKFRUIT LEAVES (*Artocarpus Heterophyllus* Lam) AGAINST
*Propionibacterium acnes***

ABSTRAK

Background: Acne vulgaris is a chronic inflammation of the pilosebaceous follicles, commonly occurring during adolescence, and is primarily caused by the bacterium *Propionibacterium acnes*. The improper and prolonged use of synthetic antibiotics can lead to resistance, prompting the need for effective natural alternatives. Jackfruit leaves (*Artocarpus heterophyllus* Lam) contain bioactive compounds such as flavonoids, saponins, and tannins with known antibacterial properties.

Research Objective: This study aimed to formulate an acne patch containing ethanol extract of jackfruit leaves and to evaluate its antibacterial effectiveness against *Propionibacterium acnes* in vitro, as well as to assess the physical stability of the patch before and after the cycling test.

Research Methods: This was a laboratory experimental study using the agar diffusion method. Jackfruit leaves were extracted by maceration with 96% ethanol. Acne patches were formulated at extract concentrations of 1%, 3%, and 5% (F1, F2, F3) and evaluated for their physical characteristics (organoleptic properties, thickness, moisture content, pH, etc.). Antibacterial effectiveness was assessed based on the diameter of the inhibition zones against *P. acnes*.

Research Results: All formulations contained active antibacterial compounds and exhibited good physical stability. The 5% extract formulation (F3) showed the highest inhibition zone diameter (>14 mm), categorized as strong antibacterial activity. ANOVA results revealed significant differences in antibacterial effectiveness among the formulations ($p < 0.05$).

Conclusion: The acne patch formulated with ethanol extract of jackfruit leaves (*Artocarpus heterophyllus* Lam) demonstrated good physical stability before and after the cycling test. The 5% concentration formula exhibited the highest effectiveness in inhibiting the growth of *Propionibacterium acnes*, the ANOVA statistical test showed a significant difference between the formulas ($p < 0.05$), and the results of the Paired Sample t-Test indicated that the antibacterial property of the extract was bacteriostatic

Keywords: Acne patch, jackfruit leaf, *Propionibacterium*