

ABSTRAK

FEBRIANI, R, 2022, UJI AKTIVITAS ANTIBAKTERI SEDIAAN GEL EKSTRAK DAUN SIRIH (*Piper betle* L.) TERHADAP *Staphylococcus epidermidis* ATCC 12228, SKRIPSI, PROGRAM STUDI S1 FARMASI, FAKULTAS FARMASI, UNIVERSITAS SETIA BUDI, SURAKARTA. Dibimbing oleh Dr. apt. Opstaria Saptarini, M.Si dan apt. Muhammad Dzakwan, S.Si., M.Si

Daun sirih (*Piper betle* L.) adalah tumbuhan yang diduga mempunyai aktivitas menghambat pertumbuhan koloni bakteri, karena memiliki kandungan flavonoid, alkaloid, saponin, triterpenoid, tanin, dan fenol. Tujuan penelitian ini dengan membuat formula sediaan gel dari ekstrak daun sirih yang mampu menghambat pertumbuhan *Staphylococcus epidermidis* ATCC 12228 dan memiliki stabilitas serta mutu fisik yang baik.

Ekstrak daun sirih dibuat menggunakan metode maserasi dengan pelarut etanol 96%. Ekstrak daun sirih di formulasikan menjadi sediaan gel dengan 3 variasi konsentrasi ekstrak 4%, 5%, dan 6%. Kemudian sediaan gel perlu dilakukan uji karakteristik sediaan meliputi uji organoleptis, pH, viskositas, homogenitas, daya lekat, daya sebar, stabilitas dan pengujian aktivitas terhadap bakteri *Staphylococcus epidermidis* ATCC 12228. Data uji mutu fisik dan aktivitas antibakteri dianalisa secara statistik dengan uji *Shapiro-Wilk* dan dilanjutkan dengan uji *one way* ANOVA.

Hasil penelitian yang di dapat adalah sediaan gel ekstrak daun sirih memiliki mutu fisik dan stabilitas yang baik dan pada formula 1 dengan konsentrasi 4% memberikan aktivitas antibakteri yang efektif terhadap *Staphylococcus epidermidis* ATCC 12228 dengan daya hambat sebesar 21,67.

Kata Kunci : *Piper betle* L., antibakteri, gel, *Staphylococcus epidermidis*

ABSTRACT

FEBRIANI, R, 2022, TESTING OF ANTIBACTERIAL ACTIVITY OF BETLE (*Piper betle* L.) EXTRACT GEL AGAINST *Staphylococcus epidermidis* ATCC 12228, THESIS, STUDY PROGRAM OF PHARMACEUTICAL STUDY PROGRAM, FACULTY OF PHARMACEUTICAL, UNIVERSITY. Supervised by Dr. apt. Opstarina Saptarini, M.Si and apt. Muhammad Dzakwan, S.Si., M.Si

Betle leaf (*Piper betle* L.) is a plant that is thought to have activity to inhibit the growth of bacterial colonies, because it contains flavonoids, alkaloids, saponins, triterpenoids, tannins, and phenols. The purpose of this study was to make a gel formulation formula from betle leaf extract which was able to inhibit the growth of *Staphylococcus epidermidis* ATCC 12228 and had good stability and physical quality.

Betle leaf extract was made using maceration method with 96% ethanol as solvent. Betle leaf extract was formulated into a gel preparation with 3 variations of extract concentration 4%, 5%, and 6%. Then the gel preparation needs to be tested for the characteristics of the preparation including organoleptic tests, pH, viscosity, homogeneity, adhesion, dispersibility, stability and activity testing against *Staphylococcus epidermidis* ATCC 12228. The data on the physical quality test and antibacterial activity were analyzed statistically by the *Shapiro-Wilk* test. and continued with the *one way* ANOVA test.

The results of the study were that the betel leaf extract gel had good physical quality and stability and formula 1 with a concentration of 4% gave effective antibacterial activity against *Staphylococcus epidermidis* ATCC 12228 with an inhibitory power of 21,67 mm.

Keyword: *Piper betle* L., antibacterial, gel, *Staphylococcus epidermis*