

Formulasi dan Uji Antibakteri Sediaan Losio Ekstrak Etanol Kulit Kentang (*Solanum tuberosum* L.) Terhadap Bakteri *Staphylococcus aureus*

Salma Muhlisotul Faidzah
NIM 362015711126

ABSTRAK

Kulit kentang (*Solanum tuberosum* L.) mengandung alkaloid, flavonoid dan polifenol yang mampu memberikan efek antibakteri. Kulit kentang kemungkinan dapat dibuat menjadi sediaan losio agar memudahkan dalam penggunaan oleh manusia yang memiliki gangguan penyakit kulit disebabkan bakteri *Staphylococcus aureus*. Oleh karena itu, tujuan penelitian ini adalah untuk memformulasikan sediaan losio ekstrak etanol kulit kentang, menguji mutu sediaan losio ekstrak kulit kentang dan mengetahui aktivitas dari sediaan losio dalam menghambat bakteri *Staphylococcus aureus*.

Penelitian ini merupakan eksperimen dengan membuat 3 formulasi sediaan losio yaitu F1, F2 dan F3 dengan menggunakan konsentrasi ekstrak etanol kulit kentang 0,8%, 0,9% dan 1%. Kulit kentang dibuat ekstrak menggunakan metode ekstraksi secara maserasi dengan pelarut etanol 70%. Pembuatan losio dilakukan dengan mencampurkan fase minyak (asam stearate, setil alkohol, paraffin cair, parfum) kedalam fase air (gliserin, trietanolamin, metil paraben air), dan ditambahkan ekstrak etanol kulit kentang. Evaluasi sediaan meliputi uji pH dan uji viskositas sesuai Standar Nasional Indonesia (SNI), serta uji organoleptik, uji homogenitas dan uji daya sebar. Uji aktivitas antibakteri dilakukan menggunakan metode difusi sumuran dengan mengamati daerah zona hambat yang kemudian dianalisis secara statistik menggunakan *One Way Anova* dengan program statistik SPSS 16 dengan taraf kepercayaan 95%.

Hasil penelitian menunjukkan bahwa sediaan losio ekstrak etanol kulit kentang F1, F2 dan F3 memiliki karakteristik sediaan berwarna coklat muda, aroma rose dan homogen. Adapun tingkat kekentalannya sedikit berbeda, F1 agak kental, F2 kental sedangkan F3 sangat kental. Uji daya sebar sediaan losio F1, F2 dan F3 yang didapatkan berkisar antara 6-6,7 cm. Uji pH dan uji viskositas sediaan losio F1, F2 dan F3 telah sesuai SNI yaitu pH 7 dan viskositas antara 30000-34700 cp. Hasil uji aktivitas antibakteri berdasarkan *One Way Anova* diperoleh hasil yang signifikan yakni $P = 0,000$ ($P < 0,05$) dengan zona hambat yang diperoleh yaitu F0 (9,625 mm), F1 (12,5 mm), F2 (13,375 mm), F3 (13,5 mm) dan K+ (16,25 mm).

Berdasarkan hasil penelitian, dapat disimpulkan bahwa ekstrak etanol kulit kentang dapat diformulasikan sebagai sediaan losio antibakteri. Formulasi losio ekstrak etanol kulit kentang memenuhi persyaratan mutu pengujian fisik sediaan losio yang baik pada uji organoleptik, uji homogenitas dan uji daya sebar, serta memenuhi persyaratan berdasarkan SNI 16-4399-1996 pada uji pH dan uji viskositas. Sediaan losio ekstrak etanol kulit kentang formulasi F1, F2 dan F3 memiliki aktivitas antibakteri terhadap bakteri *Staphylococcus aureus*. Daya hambat paling besar terdapat pada formulasi F3 (konsentrasi kulit kentang 1%).

Kata kunci: antibakteri, ekstrak etanol, formulasi, kulit kentang, losio, *Staphylococcus aureus*

THE FORMULATION AND ANTIBACTERIAL TEST OF THE LOTION FROM ETHANOL EXTRACT OF POTATO (*Solanum tuberosum* L.) PEELS AGAINST *Staphylococcus aureus* BACTERIA

Salma Muhlisolul Faizah
NIM 362015711126

ABSTRACT

Potato (*Solanum tuberosum* L.) peels contains alkaloids, flavonoids, and polyphenols which are capable of providing antibacterial effects. Potato peels can possibly be made as the preparation of lotion making it easier to be applied use by humans who have skin allergy caused by *Staphylococcus aureus* bacteria. Therefore, the purpose of this study was to formulate lotion preparation from the ethanol extract of potato peels, test the quality of the lotion preparation from the ethanol extract of potato peels, and observe the activity of the lotion in inhibiting *Staphylococcus aureus* bacteria.

This research was an experiment by producing 3 formulations of lotion preparations which were F1, F2, and F3 using ethanol extract concentration ethanol extract of potato peels 0.8%, 0.9%, and 1%. Potato peels were extracted using maceration by 70% ethanol. The production of the lotion was done by mixing the oil phase (stearate acid, cetyl alcohol, liquid paraffin, perfume) into the water phase (glycerin, triethanolamine, methylparaben, aquadest), and finally became ethanol extract of potato peels. Evaluation of preparations was included pH test and viscosity test according to the Indonesian National Standard (SNI) as well as organoleptic tests, homogeneity tests, and dispersion tests. The antibacterial activity test was carried out using the well diffusion method by observing the inhibitory zone area which was then statistically analyzed using One Way ANOVA with the SPSS 16 statistical program by 95% confidence level.

The results showed that the preparations of ethanol extract of potato peels F1, F2 and F3 had the characteristics of light brown, rose and homogeneous. The level of thickness was slightly different, F1 was rather thick, F2 was thick while F3 is very thick. The dispersion test of the F1, F2, and F3 lotions obtained ranged from 6-6.7 cm. The pH test and the viscosity test of lotion F1, F2, and F3 preparations were in accordance with SNI that was pH 7 and viscosity between 30000-34700 cp. The results of the antibacterial activity test based on One Way ANOVA were obtained significant results that was $P = 0,000$ ($P < 0.05$) with the inhibition zones obtained were F0 (9,625 mm), F1 (12,5 mm), F2 (13,375 mm), F3 (13.5 mm) and K + (16.25 mm). Based on the results of the study, it can be concluded that the ethanol extract of potato peels could be formulated as a preparation for antibacterial lotion. Formulation of the lotion from the ethanol extract of potato peels met the quality requirements of physical testing of lotion which was good in relation to organoleptic test, homogeneity test, and dispersion test as well as SNI 16-4399-1996 on pH test and viscosity test. The preparation of the lotion from the ethanol extract of potato peels formulation F1, F2 and F3 had antibacterial activity against *Staphylococcus aureus* bacteria. The greatest inhibition is found in the F3 formulation (1% potato peels concentration).

Keywords: antibacterial, ethanol extract, formulation, lotion, potato peels, *Staphylococcus aureus*