

THESIS

**PREPARATION OF ANTIBACTERIAL LIQUID SOAP WITH
EUGENOL VARIANT OF CLOVE LEAF OIL (*Eugenia
aromaticum*)**



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**APPROVAL SHEET
THESIS DEFENCE**

It is hereby stated that the thesis with the title:

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VARIANT OF CLOVE LEAF OIL (*Eugenia aromaticum*)**

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It has been reviewed and recommended to meet scientific standards, in terms of both scope and quality.

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ABSTRAK

PEMBUATAN SABUN CAIR ANTIBAKTERI DENGAN VARIAN EUGENOL MINYAK DAUN CENGKEH (*Eugenia aromaticum*)

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Kulit merupakan organ terbesar tubuh yang menampung berbagai jenis bakteri. Produksi sebum yang disertai infeksi bakteri dapat menyebabkan berbagai masalah kulit salah satunya adalah iritasi. Penggunaan sabun antiseptik dengan bahan kimia dapat menimbulkan berbagai dampak negatif bagi lingkungan dan kulit. Pemanfaatan bahan alam telah menjadi solusi yang semakin diminati oleh masyarakat. Salah satu tanaman yang dapat dimanfaatkan adalah cengkeh. Cengkeh (*Eugenia aromaticum*) memiliki kandungan senyawa eugenol yang berfungsi sebagai antiseptik, antiinflamasi dan antibakteri. Pemanfaatan minyak daun cengkeh salah satunya adalah sebagai sabun cair. Penelitian ini bertujuan untuk memformulasikan sabun cair minyak daun cengkeh dengan konsentrasi minyak daun cengkeh F1 (0%), F2 (4%), F3 (6%) dan F4 (8%) serta mengetahui mutu fisik dan aktivitas antibakteri terhadap pertumbuhan bakteri *Staphylococcus aureus*. Pengujian aktivitas antibakteri terhadap *Staphylococcus aureus* menggunakan metode difusi cakram. Hasil uji organoleptik sabun cair minyak daun cengkeh beraroma khas cengkeh, berwarna kuning, berbentuk cair hingga kental dan homogen. Hasil dari uji pH berkisar 8,97 – 9,14. Hasil uji tinggi dan stabilitas busa berkisar antara 84,37 - 88,18%. Hasil dari uji viskositas berkisar antara 2510,72 – 6190,57 cP. Hasil uji daya sebar 3,39 - 6,42 cm. Hasil uji antibakteri pada F1 memiliki daya hambat sebesar 2,87 mm, F2 memiliki daya hambat sebesar 7 mm, F3 memiliki daya hambat sebesar 10 mm, F4 memiliki daya hambat sebesar 15,25 mm terhadap bakteri *Staphylococcus aureus*. Formula terbaik pada F2 dengan nilai pH 8,97; stabilitas busa 88,18%; viskositas 3353,85 cp; dan daya hambat 7 mm yang termasuk dalam kategori sedang.

Kata Kunci : Antibakteri, Eugenol, Sabun Cair, *Staphylococcus aureus*

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ABSTRACT

PREPARATION OF ANTIBACTERIAL LIQUID SOAP WITH EUGENOL VARIANT OF CLOVE LEAF OIL (*Eugenia aromaticum*)

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The skin is the largest organ of the body which various types of bacteria. Sebum production accompanied by bacterial infection can cause various skin problems, including irritation. Antiseptic soap with chemicals can have various negative impacts on the environment and skin. The use of natural materials is a solution that is increasingly in demand by the public. One of the plants that can be use is cloves. Cloves (*Eugenia aromaticum*) contain eugenol compounds that function as antiseptics, anti-inflammatory and antibacterial. One of the utilization of clove leaf oil is as a liquid soap. This research aims to formulate clove leaf oil eugenol liquid soap with clove leaf oil concentrations F1 (0%), F2 (4%), F3 (6%), and F4 (8%) and determine the physical quality and antibacterial activity against the growth of *Staphylococcus aureus* bacteria. The antibacterial activity test against *Staphylococcus aureus* uses the disc diffusion method. The organoleptic test results of clove leaf oil liquid soap have a distinctive clove aroma, yellow in color, liquid to thick, and homogeneous. The results of the pH test ranged from 8.97 - 9.14. The results of the foam height and stability test ranged from 84.37 - 88.18%. The results of the viscosity test ranged from 2510.72 to 6190.57 cP. The results of the spreadability test were 3.39 - 6.42 cm. The results of the antibacterial test on F1 had an inhibition of 2.87 mm, F2 had an inhibition of 7 mm, F3 had an inhibition of 10 mm, and F4 had an inhibition of 15.25 mm against *Staphylococcus aureus* bacteria. The best formula in F2 with a pH value of 8.97; foam stability of 88.18%; viscosity of 3353.85 cp; and inhibition of 7 mm which is included in the medium category.

Keywords: Antibacterial, Eugenol, Liquid Soap, *Staphylococcus aureus*

PREFACE

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Ngawi, 22 January 2025

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