

THESIS

**ACTIVITY OF INHIBITION OF BACTERIA (*Staphylacoccus aureus*) IN
WHEY YOGURT SOAP PAPER WITH NATURAL COLOURING RED
DRAGON SKIN (*Hylocereus polyrhizus*)**



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PONOROGO**

2024

VALIDITY SHEET

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It is hereby stated that the thesis with the title:

**"ACTIVITY OF INHIBITION OF BACTERIA (*Staphylococcus aureus*) IN WHEY
YOGURT SOAP PAPER WITH NATURAL DYEING RED DRAGON SKIN
(*Hylocereus polyrhizus*)"**

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PERNYATAAN KEASLIAN PENELITIAN

Dengan ini saya,

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Pada Paper Soap Yogurt Whey Dengan Pewarna Alami Kulit Buah Naga Merah (*Hylocereus polyrhizus*)

Saya dengan tulus menyatakan bahwa penelitian yang tersusun dalam skripsi ini aslinya adalah karya saya sendiri dan bukan peneliti lain untuk derajat yang berbeda. Lebih lanjut, skripsi ini tidak pernah diterbitkan sebelumnya, kecuali beberapa bagian referensi aslinya.

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ABSTRACT**ACTIVITY OF INHIBITION OF BACTERIA (*Staphylacoccus aureus*) IN
WHEY YOGURT SOAP PAPER WITH NATURAL COLOURING RED
DRAGON SKIN (*Hylocereus polyrhizus*)****Alfia Manda Putri Kautsar****422021718008**

Cheese is a very popular food for many people around the world. In Indonesia, whey produced from cheese has not been optimally utilized, as the food industry in this country has not focused on its utilization. Whey contains about 50% of the nutrients found in milk. Injured skin can be an entry point for pathogenic microorganisms into the body. One of the main pathogenic bacteria that can infect humans is *Staphylacoccus aureus*, which can spread through the air. One way to keep the skin clean is using antibacterial soap, which can utilize cheese whey as an antibacterial ingredient. This study aims to explore the potential of cheese whey in yogurt as an ingredient for liquid soap, as well as to test the effectiveness of cheese whey yogurt-based paper soap in inhibiting the growth of *Staphylacoccus aureus* bacteria. This study was conducted using the disc diffusion method, using four variations in the concentration of cheese whey and milk in yogurt, namely F1 25%:75%, F2 50%:50%, F3 75%:25%, F4 100%:0. Commercial patented paper soap was used as positive control, while the negative control used paper soap soap base. Data obtained from the inhibition zone measurement were analyzed using One Way Anova with a significance value of >0.05 and analyzed using statistical program 24.0. The results showed that cheese whey yoghurt has the potential to be used in the manufacture of paper soap, with a combination of the following.

Kata Kunci : *Cheese whey, Staphylacoccus aureus, Paper soap, Yogurt*

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ABSTRAK

AKTIVITAS DAYA HAMBAT BAKTERI (*Staphylacoccus aureus*) PADA PAPER SOAP YOGURT WHEY DENGAN PEWARNA ALAMI KULIT BUAH NAGA MERAH (*Hylocereus polyrhizus*)

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Yogurt whey merupakan produk dari fermentasi limbah cair keju yang diketahui memiliki kandungan laktoferin yang berfungsi sebagai antimikroba. *Yogurt* berbahan dasar *whey* sangat jarang dimanfaatkan sebagai bahan pembuatan *paper soap*. Penelitian ini fokus pada pembuatan *paper soap* alami berbahan dasar *yogurt whey*. Penambahan pewarna alami kulit buah naga merah (*Hylocereus polyrhizus*), evaluasi mutu *paper soap*, dan analisis aktivitas antibakteri *paper soap* terhadap *Staphylacoccus aureus*. Tahap pertama penelitian ini adalah pembuatan formula *yogurt* dengan bahan utama konsentrasi yang bervariasi (25, 50, 75, dan *whey* 100%) ditambah pewarna alami kulit buah naga merah (*Hylocereus polyrhizus*), *paper soap* tersebut diproses melalui reaksi saponifikasi dengan *Virgin Coconut Oil* (VCO) dengan Kalium Hidroksida dan variasi *yogurt whey*. Pengujian dilakukan dengan menentukan pH, kadar air, kadar busa, kadar alkali bebas dan antibakteri. Penelitian ini bertujuan untuk mengeksplorasi potensi *whey* keju dalam *yogurt* sebagai bahan untuk *paper soap*, serta untuk menguji efektivitas *paper soap* berbahan *yogurt whey* keju dalam menghambat pertumbuhan bakteri *Staphylacoccus aureus*. Metode difusi cakram, menggunakan empat variasi konsentrasi *whey* keju dan susu dalam *yogurt*, yaitu F1 25%:75%, F2 50%:50%, F3 75%:25%, F4 100%:0. *Paper soap* komersial dipatenkan sebagai kontrol positif, sedangkan kontrol negatif menggunakan basis sabun *paper soap*. Hasil penelitian menunjukkan bahwa *yogurt whey* keju dapat dijadikan bahan untuk *paper soap*, serta *yogurt whey* keju memiliki potensi antibakteri ditunjukkan pada formulasi F3 dengan kombinasi *yogurt whey* keju 75% dan susu 25% menghasilkan zona hambat paling besar yaitu 29,6 mm dan hampir setara dengan kontrol positif. Penelitian terhadap adanya kandungan antibakteri pada *yogurt whey* dapat dimanfaatkan secara baik dan tepat pengolahan pewarna alami untuk memenuhi kebutuhan sehari-hari.

Kata Kunci : Antibakteri, *Paper soap*, Pewarna alami, *Staphylacoccus aureus*, *Whey Yogurt*.

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FOREWORD

Alhamdulillah rabbil'alami, all praise and gratitude is due to Allah SWT, the Lord of the universe who has given the gift, guidance and blessing of knowledge so that I can complete the thesis as expected. Shalawat and greetings are endlessly sent to the prophet Muhammad SAW, his family and friends. The thesis entitled “ACTIVITY OF BACTERI (Staphylacoccus aureus) ON PAPER SOAP YOGURT WHEY WITH NATURAL PEWARNA RED DRAGON CULVER (Hylocereus polyrhizus)” is prepared as a requirement to become a bachelor's degree in the pharmacy study program, Faculty of health sciences, Unida Gontor. The author realizes that completing of this proposal is inseparable from the help, guidance, and direction of various parties. Therefore, the author would like to thank:

1. Prof. Dr. Hamid Fahmi Zarkasyi, M.A., M.Phil. as Rector of Darussalam Gontor University, Dr. Abdul Hafidz Zaid, M.A as Vice Rector 1 of Darussalam Gontor University. Dr. Setiawan Bin Lahuri, M.A as Vice Rector II of Darussalam Gontor University. And Dr. Khoirul Umam, M.Ec as Vice Rector III of Darussalam Gontor University. Al- Ustad apt. Amal Fadholah, S.Si., M.Si. selaku Dekan Fakultas Ilmu Kesehatan Universitas Darussalam Gontor.
2. apt. Nadia Iha Fatiha M.Clin Pharm as the head of the Pharmacy Study Program, Faculty of Health Sciences, Darussalam Gontor University.
3. Solikah Ana Estikomah M.Si as the first supervisor and Al-Ustadzah Indriyanti Widyaratna M.Farm as the second supervisor, who has give knowledge, guidance, assistance and can take the time to provide advice and direction during the preparation of the thesis to be completed.
4. All lecturers, laboratorians, educational staff and administrative staff of the Pharmacy Study Program have been willing to their knowledge, provide guidance and direction during the lecture process.
5. Both parents, Mr. Rustadi Setiya Budi and Mrs. Boyati. The author's younger sister Salwa Faizati. I am incomparable grateful for the abundance of love, affection and sincere love, never-ending prayers, material,

motivation, advice, attention, sacrifice, and enthusiasm given always to the author and guiding the author all this time, so that the author can continue to strive in achieving dreams and ideals. I will get success and all the good things that god willing in the future because and for my beloved family.

6. Friends in the Bachelor of Pharmacy class of 2021 Pharmacy Study Program, Darussalam Gontor University. Who provided a lot of help, support, and prayers, support, motivation, kinship, and togetherness for 4 years together until the completion of this thesis. With all humility, the author sincerely accepts criticism and suggestions in his writing because he realizes that perfection is still very far away in preparing this thesis. Hopefully this final project will be helpful for writers and readers. Aamiin Allahumma Aamiin.

Wassalamualaikum Warahmatullahi Wabarakatuh.

