PENGARUH PEMANFAATAN SAMPAH KULIT JERUK NIPIS (*Citrus aurantifolia*) DALAM SABUN PADAT TERHADAP DAYA HAMBAT BAKTERI *Staphylococcus aureus*

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ABSTRAK

Kulit jeruk nipis tidak banyak dimanfaatkan oleh masyarakat sehingga terbuang menjadi sampah. Padahal kulit jeruk nipis masih memiliki nilai guna yaitu diantaranya sebagai antibakteri. Tujuan dari penelitian ini adalah menganalisis pengaruh pemanfaatan sampah kulit jeruk nipis sebagai bahan tambahan sabun padat terhadap karakteristik fisik sabun, kadar air sabun dan daya hambat pertumbuhan bakteri *Staphylococcus aureus*.

Metode dalam penelitian ini yakni berjenis penelitian *true experiment* dengan menggunakan bentuk *Posttest Only Control Group Design*. Terdapat empat kelompok perlakuan sampel ialah konsentrasi ekstrak kulit jeruk nipis 0%, 25%, 50% dan 75% dengan enam replikasi pada tiap kelompok sampel. Hasil uji dianalisis dengan menggunakan uji *Kruskal Wallis* dan uji *Mann-Whitney*.

Hasil karakteristik fisik masing-masing perlakuan sabun memiliki warna putih, kuning muda, dan kuning tua. Pada semua perlakuan sabun berbentuk padat dan aroma khas jeruk nipis. Rata-rata kadar air pada masing-masing perlakuan sabun 9,13%, 11,19%, 11,95%, dan 14,87%. Terdapat pengaruh penambahan ekstrak kulit jeruk nipis terhadap kadar air sabun. Rata-rata zona hambat pertumbuhan bakteri *Staphylococcus aureus* dari masing-masing perlakuan sabun padat 1,9 mm, 2,7 mm, 3,0 mm, dan 4,6 mm. Terdapat pengaruh penambahan ekstrak kulit jeruk nipis terhadap daya hambat pertumbuhan bakteri *Staphylococcus aureus*.

Kesimpulan dari penelitian ini adalah terdapat pengaruh pemanfaatan sampah kulit jeruk nipis sebagai bahan tambahan sabun padat terhadap daya hambat pertumbuhan bakteri *Staphylococcus aureus*. Saran penelitian selanjutnya dilakukan uji mutu sabun padat sesuai SNI 3532:2016 Sabun Mandi Padat. Selain itu menggunakan metode lain seperti metode dilusi untuk pemeriksaan daya hambat pertumbuhan bakteri juga pemeriksaan terhadap jenis bakteri lain.

Kata kunci: Kulit jeruk nipis, Sabun padat, Daya hambat bakteri, *Staphylococcus aureus*

THE EFFECT OF LIME (*Citrus aurantifolia*) PEEL WASTE USE IN SOLID SOAP AGAINST THE INHIBITORY POWER OF *Staphylococcus aureus* BACTERIA

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ABSTRACT

Lime peel was not widely utilized by the society so then it got wasted. Actually lime peel has many values, one of which is its antimicrobial effect. The purpose of this study is to analyze the effect of using lime peel waste as an additive in solid soap against the physical characteristics of the soap, its water content and the inhibition of *Staphylococcus aureus* bacteria growth.

The method employed in this study is a true experiment type of research using the *Posttest Only Control Group Design* form. There were four treatment groups, each with different lime peel extract concentrations of 0%, 25%, 50% and 75% with six replications in each group sample. The test results were analyzed using the *Kruskal-Wallis* test and the *Mann-Whitney* test.

The results of the physical characteristics of the each soap shows white, light yellow and dark yellow colors. All soap were in solid form with a distinctive lime aroma. The average water content in the soap was 9.13%, 11.19%, 11.95% and 14.87%, respectively. There was an effect of adding lime peel extract to the water content of the soap. The average inhibition zone of *Staphylococcus aureus* growth from solid soap was 1.9 mm, 2.7 mm, 3.0 mm and 4.6 mm, respectively. There was an effect of adding lime peel extract against the inhibition of the growth of *Staphylococcus aureus* bacteria.

The conclusion of this study is that there was an effect of using lime peel waste as an additional ingredient in solid soap against the inhibition of *Staphylococcus aureus* bacteria growth. Suggestions for further research include testing the quality of solid soap according to SNI 3532: 2016 Solid Bath Soap. Additionally, other methods such as the dilution method can be used to examine the inhibition of bacterial growth, as well as the examination of other types of bacteria.

Keywords: Lime peel, Solid soap, Bacterial inhibition, *Staphylococcus aureus*