

ABSTRACT

The Liquid Hand Soaps Inhibitory Test from Padang City Restaurants to *Escherichia coli* and *Staphylococcus aureus* Bacterial Growth by *In Vitro* Method

By

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Liquid hand soaps proved to inhibit *Escherichia coli* and *Staphylococcus aureus* growth. In Padang, most of Restaurants provide diluted liquid hand soaps. Research found dilution would changed its ability to inhibit bacterial growth. The purpose of this study was to examine the ability of Padang City Restaurants' liquid hand soaps to inhibit *E. coli* and *S. aureus* bacterial growth.

This research was an experimental research by using diffusion method with posttest only with control group design. The samples were taken from four restaurants.

The results showed all of them could inhibit *S. aureus* but only a half inhibited *Escherichia coli* bacterial growth. Median for *E. coli* and *S. aureus* bacterial inhibition growth for each period were 0, 7.4, 7.3 and 0, 26.1, 23.3. Maximum inhibition value for *E. coli* growth in the first, second, and third periods were 19.5, 35.4, 27.1 and 20.7, 40.2, and 36.6 for *S. aureus*. In addition, minimum inhibition in both bacteria were 0.00. It could be influenced by soap antiseptic and antibacterial composition and concentration, pH, dilution, and structure of bacterial cell wall. In conclusion, the liquid hand soaps had greater ability to inhibit *S. aureus* than *E. coli*.

Keywords : liquid hand soaps, restaurant, dilution, inhibitory test, bacterial growth

ABSTRAK

Uji Daya Hambat Sabun Cair Cuci Tangan pada Restoran Waralaba di Kota Padang terhadap Pertumbuhan Bakteri *Escherichia coli* dan *Staphylococcus aureus* secara *In Vitro*

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Sabun cair cuci tangan terbukti dapat menghambat pertumbuhan bakteri *Escherichia coli* dan *Staphylococcus aureus*. Sebagian besar restoran waralaba di Kota Padang menyediakan sabun cair cuci tangan yang telah diencerkan. Proses pengenceran mengubah kemampuan sabun dalam menghambat pertumbuhan bakteri. Penelitian bertujuan untuk menguji daya hambat sabun cair cuci tangan pada restoran waralaba di Kota Padang terhadap pertumbuhan *E. coli* dan *S. aureus*.

Penelitian ini berjenis eksperimental menggunakan metode difusi dengan rancangan *posttest only with control group*. Sampel penelitian diambil dari empat restoran. Hasil penelitian dicatat dalam tabel, disajikan dalam grafik, dan diolah lebih lanjut menggunakan SPSS.

Hasil penelitian menunjukkan bahwa keempat sabun dapat menghambat pertumbuhan *S. aureus* namun hanya sebagian yang memiliki daya hambat terhadap *E. coli*. Median daya hambat pertumbuhan *E. coli* dan *S. aureus* pada setiap periode yaitu 0, 7.4, 7.3 dan 0, 26.1, 23.3. Nilai maksimum daya hambat pertumbuhan *E. coli* dalam tiga periode yaitu 19.5, 35.4, 27.1 dan 20.7, 40.2, 36.6 untuk *S. aureus*. Daya hambat minimum terhadap kedua bakteri adalah 0.00.

Hal tersebut dapat dipengaruhi komposisi dan konsentrasi antiseptik, antibakteri, pH sabun, pengenceran, dan struktur dinding sel bakteri. Disimpulkan bahwa sabun cair cuci tangan yang diuji memiliki kemampuan lebih besar dalam menghambat pertumbuhan *S. aureus* daripada *E. coli*.

Kata kunci: sabun cair cuci tangan, restoran, pengenceran, uji daya hambat, pertumbuhan bakteri