

# Efektivitas Air Perasan Jeruk Nipis (*Citrus aurantifolia*) terhadap Pertumbuh Bakteri *Staphylococcus aureus*

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## ABSTRAK

**Latar Belakang :** *Staphylococcus aureus* flora normal manusia, namun dalam keadaan tertentu bakteri *Staphylococcus aureus* dapat menjadi patogen. Jeruk nipis (*Citrus aurantifolia*) dapat berpotensi untuk menghambat dan membunuh bakteri tersebut karena kandungan fitokimianya seperti *hesperidin*, *limonen* dan asam sitrat. Penelitian ini berguna untuk menguji efektivitas air perasan jeruk nipis.

**Metode :** Penelitian ini merupakan **eksperimental murni** rancangan *post test only control group design*. Jeruk nipis diencerkan dengan aquadest hingga mendapatkan konsentrasi 50%, 25%, 12,5%, 6,25%, 3,12%, dan 1,56%. Konsentrasi air perasan jeruk nipis kemudian diujikan pada bakteri *Staphylococcus aureus*. Ujikadarhambat minimum (KHM) denganmetodedilusicaair dan absorbansi.Ujikadarbunuh minimum (KBM) denganmetodedilusipadat.

**Hasil :** Pada uji regresi KHM didapatkan linearitas konsentrasi air perasan jeruk nipis (*Citrus aurantifolia*) dan daya hambat pertumbuhan bakteri *Staphylococcus aureus* regresi adalah  $y = 0,010$  dan  $x = -0,248$  dan  $R^2 = 0,82$  ( $p$  value 0,001). Jika menggunakan data log jumlah koloni bakteri terhadap konsentrasi air perasan jeruk nipis (*Citrus aurantifolia*) didapatkan nilai regresi adalah  $y = 7,771$  dan  $x = -0,308$  dan nilai  $R^2 = 0,80$  ( $p$  value 0,001).

**Kesimpulan :** air perasan jeruk nipis (*Citrus aurantifolia*) efektif menghambat pertumbuhan bakteri *Staphylococcus aureus* pada konsentrasi 25% dan mampu membunuh bakteri *Staphylococcus aureus* pada konsentrasi 50%.

**Kata Kunci :** Jeruk nipis, *Citrus aurantifolia*, *S. Aureus*, KHM, KBM

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## ***Effectiveness Lime Juice (Citrus aurantifolia) on Growth of Staphylococcus aereus***

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### **ABSTRACT**

**Background :** *Staphylococcus aureus* is a normal flora of the human body. In certain conditions, *Staphylococcus aureus* transforms into a pathogen. Lime (*Citrus aurantifolia*) can inhibit and kill because its ingredients contain hesperidin, limonene, and citric acid. This research aims to examine the effectiveness of lime juice.

**Method :** This research was a true experiment post test only control group design. The lime was extracted and diluted with aquadest until reaching concentrations of 50%, 25%, 12.5%, 6.25%, 3.12%, and 1.56%. Then, the concentration of lime is tested with *Staphylococcus aureus*. Minimum Inhibitory Concentration (MIC) with liquid dilution was measured and Absorbance. Minimum Bacterial Concentration (MBC) with solid dilution was measured to assess the effectiveness of lime juice (*Citrus aurantifolia*).

**Result :** MIC regression test, there is a linearity of lime juice concentration (*Citrus aurantifolia*) and the inhibition of *Staphylococcus aureus* regression is  $y = 0.001$  and  $x = -0.248$  and  $R^2 = 0.83$  ( $p$  value 0.000). On the condition that the data of bacteria colony log toward lime extract concentration (*Citrus aurantifolia*), so the regression value is  $y = 7.771$  and  $x = -0.308$  and  $R^2$  value = 0.80 ( $p$  value 0.001).

**Conclusion :** Lime juice (*Citrus aurantifolia*) effectively inhibits the growth of *Staphylococcus aureus* bacteria in the concentration of 25% and is able to kill *Staphylococcus aureus* bacteria in the concentration of 50%.

**Keywords :** Lime, *Citrus aurantifolia*, *S. Aureus*, MIC, MBC

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