

## INTISARI

Bakteri *Aggregatibacter actinomycetemcomitans* merupakan salah satu bakteri dalam rongga mulut yang dapat menyebabkan infeksi dan menghambat proses penyembuhan luka, terutama pada area periodontal. Daun pepaya California dan kencur merupakan bahan alami yang memiliki senyawa aktif antibakteri berupa saponin, alkaloid, enzim papain, serta minyak atsiri. Tujuan penelitian ini adalah untuk mengetahui pengaruh *nanospray* kombinasi ekstrak daun pepaya California, kencur, dan kitosan terhadap diameter zona hambat pertumbuhan bakteri *Aggregatibacter actinomycetemcomitans*.

Kelompok uji yang digunakan, yaitu *nanospray* kitosan (kelompok kontrol negatif), *nanospray* kombinasi ekstrak daun pepaya California, kencur, dan kitosan (kelompok perlakuan), serta Aloclair PLUS *spray* (kelompok kontrol positif). Jumlah replikasi pada penelitian ini yaitu tiga kali pengulangan. Metode yang digunakan untuk uji daya hambat pertumbuhan bakteri *Aggregatibacter actinomycetemcomitans*, yaitu metode difusi cakram. Analisis data menggunakan *One-way ANOVA* dilanjutkan uji *Post Hoc* dengan metode *LSD* pada Tingkat signifikansi 95%.

Hasil uji *One-way ANOVA* menunjukkan terdapat pengaruh signifikan jenis *spray* ( $p < 0,05$ ) terhadap daya hambat pertumbuhan pada bakteri *Aggregatibacter actinomycetemcomitans*. Hasil uji *Post Hoc* dengan metode *LSD* (*Least Significance Different*) antar kelompok bernilai ( $p < 0,05$ ) sehingga terdapat perbedaan signifikan antar satu kelompok terhadap kelompok lainnya. Kesimpulan dari penelitian ini adalah *nanospray* kombinasi ekstrak daun pepaya California, kencur, dan kitosan dapat meningkatkan zona hambat pertumbuhan bakteri *Aggregatibacter actinomycetemcomitans*.

**Kata kunci:** *Aggregatibacter actinomycetemcomitans*, daun pepaya California, kencur, kitosan, *nanospray*, antibakteri

## ABSTRACT

*Aggregatibacter actinomycetemcomitans* is one of the bacteria in the oral cavity that can cause infection and inhibit the wound healing process, especially in the periodontal area. California papaya leaves and kencur are natural ingredients that have active antibacterial compounds in the form of saponins, alkaloids, papain enzymes, and essential oils. The purpose of this study was to determine the effect of nanospray combination of California papaya leaf extract, kencur, and chitosan on the diameter of the growth inhibition zone of *Aggregatibacter actinomycetemcomitans* bacteria.

The test groups used were chitosan nanospray (negative control group), combined nanospray of California papaya leaf extract, galangal, and chitosan (treatment group), and Aloclair PLUS spray (positive control group). The number of replications in this study was three times. The method used to test the growth inhibition of *Aggregatibacter actinomycetemcomitans* bacteria was the disc diffusion method. Data analysis used One-way ANOVA followed by Post Hoc test with LSD method at 95% significance level.

The results of the One-way ANOVA test showed a significant effect of spray type ( $p < 0.05$ ) on the growth inhibition of *Aggregatibacter actinomycetemcomitans* bacteria. The results of the Post Hoc test with the LSD (Least Significance Different) method between groups are worth ( $p < 0.05$ ) so that there are significant differences between one group against another group. The conclusion of this study is that the nanospray combination of California papaya leaf extract, kencur, and chitosan can increase the growth inhibition zone of *Aggregatibacter actinomycetemcomitans* bacteria.

**Keywords:** *Aggregatibacter actinomycetemcomitans*, California papaya leaf, kencur, chitosan, nanospray, antibacterial