

ABSTRAK

Latar Belakang : Diare merupakan penyakit utama di dunia yang menyebabkan kematian pada anak. Diare dapat disebabkan oleh infeksi bakteri, virus dan parasit. *E. coli* merupakan salah satu bakteri yang dapat menyebabkan diare pada anak. Tumbuhan yang dapat digunakan sebagai obat adalah kenikir (*Cosmos caudatus* Kunth.) dan kemangi (*Ocimum basilicum*). Kedua tanaman tersebut memiliki senyawa aktif yang bersifat antibakteri salah satunya minyak atsiri. **Tujuan Penelitian** : untuk mengetahui perbedaan daya hambat minyak atsiri daun kenikir (*Cosmos caudatus* Kunth.) dan minyak atsiri daun kemangi (*Ocimum basilicum*) dalam berbagai konsentrasi terhadap pertumbuhan *E. coli*.

Metode Penelitian : Jenis penelitian ini adalah eksperimen murni (*True Experimental Research*) dengan desain penelitian *Post Test Only Control Group Design*. Subjek yang digunakan adalah biakan bakteri *E. coli* ATCC 25922 yang telah diremajakan 1x24 jam. Objek penelitian ini adalah minyak atsiri daun kenikir (*Cosmos caudatus* Kunth.) dengan variasi konsentrasi 20%, 40%, 60%, 80%, 100% dan minyak atsiri daun kemangi (*Ocimum basilicum*) dengan variasi konsentrasi 20%, 40%, 60%, 80%, 100%. Uji daya hambat yang dilakukan menggunakan metode difusi sumuran. Data hasil pengukuran zona hambat dari minyak atsiri daun kenikir dan minyak atsiri daun kemangi dalam berbagai variasi konsentrasi dilakukan uji *One-way ANOVA* dan *Pos Hoc LSD* untuk mengetahui konsentrasi optimum pada masing-masing minyak atsiri. Data hasil pengukuran zona hambat pada konsentrasi optimum diperoleh 30 data, kemudian data dianalisis dengan uji *Mann-Whitney U*.

Hasil Penelitian : Hasil penelitian ini menunjukkan ($p < 0,05$) yang artinya adanya perbedaan daya hambat minyak atsiri daun kenikir (*Cosmos caudatus* Kunth.) dan minyak atsiri daun kemangi (*Ocimum basilicum*) dalam berbagai konsentrasi terhadap pertumbuhan *E. coli*.

Kesimpulan : Ada perbedaan daya hambat minyak atsiri daun kenikir (*Cosmos caudatus* Kunth.) dan minyak atsiri daun kemangi (*Ocimum basilicum*) dalam berbagai konsentrasi terhadap pertumbuhan *E. coli*.

Kata Kunci : *E. coli*, minyak atsiri daun kenikir, minyak atsiri daun kemangi, diameter zona hambat.

ABSTRACT

Background: Diarrhea is a major disease in the world that causes death in children. Diarrhea can be caused by bacterial, virus, and parasite infection. *E. coli* is a bacteria that can cause diarrhea in children. Plants that can be used as medicine are kenikir (*Cosmos caudatus* Kunth.) and basil (*Ocimum basilicum*). Both of these plants have active compounds that are antibacterial, one of which is essential oils.

Research Objective: to determine the differences inhibition of essential oil of kenikir leaves (*Cosmos caudatus* Kunth.) and essential oil of basil leaves (*Ocimum basilicum*) in various concentrations on the growth of *E. coli*.

Research Method: This type of research is a True Experimental research design with Post Test Only Control Group Design. The subject used was the culture of *E. coli* ATCC 25922 which has been rejuvenated for 24 hours. The object of this research was essential oil of kenikir leaves (*Cosmos caudatus* Kunth.) with various concentrations of 20%, 40%, 60%, 80%, 100% and essential oil of basil leaves (*Ocimum basilicum*) with various concentrations of 20%, 40%, 60%, 80%, 100%. The inhibition test used the well diffusion method. Inhibition zone measurement data from essential oil of kenikir leaves and essential oil of basil leaves in various concentrations were analyzed by the One-way ANOVA and Pos Hoc LSD tests to determine the optimum concentration of each essential oil. The data from the measurement of the inhibition zone at the optimum concentration obtained were 30 data, then the data were analyzed using the Mann-Whitney U test.

Results: The results of this study showed ($p < 0.05$), which means that there were differences in the inhibition essential oil of kenikir leaves (*Cosmos caudatus* Kunth.) and essential oil of basil leaves (*Ocimum basilicum*) in various concentrations on the growth of *E. coli*.

Conclusion: There are differences in the inhibition of essential oil of kenikir leaves (*Cosmos caudatus* Kunth.) and essential oil of basil leaves (*Ocimum basilicum*) in various concentrations on the growth of *E. coli*.

Keywords: *E. coli*, essential oil of kenikir leaves, essential oil of basil leaves, inhibition zone diameter.