

RINGKASAN

KEVIN ALFONSO. Potensi Ekstrak Daun Kemangi (*Ocimum sanctum* L.) sebagai Antibakteri Terhadap *Vibrio* sp. pada Ikan Kakap (*Lates calcarifer*). Dibimbing oleh Dr. MUZAHAR dan RIKA WULANDARI

Budidaya ikan kakap putih (*Lates calcarifer*) menghadapi ancaman infeksi *Vibrio* sp. yang dapat menyebabkan kematian tinggi. Penggunaan antibiotik sintesis sebagai pengendalian penyakit berpotensi menimbulkan resistensi bakteri dan residu, sehingga diperlukan alternatif berbahan alami. Penelitian ini bertujuan menganalisis aktivitas antibakteri ekstrak daun kemangi (*Ocimum sanctum* L.) terhadap *Vibrio* sp. secara *in vitro* serta menentukan konsentrasi yang paling efektif. Penelitian dilaksanakan pada Maret–Juli 2026 di Laboratorium Marine Biology, Fakultas Ilmu Kelautan dan Perikanan, Universitas Maritim Raja Ali Haji. Ekstrak daun kemangi diperoleh melalui metode maserasi menggunakan etanol 96% dan diuji dengan metode difusi cakram menggunakan Rancangan Acak Lengkap (RAL) yang terdiri atas lima perlakuan dan tiga ulangan, yaitu kontrol negatif, kontrol positif, serta konsentrasi ekstrak 1.000, 3.000, dan 5.000 ppm. Data dianalisis menggunakan ANOVA dan dilanjutkan uji Tukey HSD. Hasil penelitian menunjukkan bahwa seluruh perlakuan ekstrak menghasilkan zona hambat terhadap *Vibrio* sp., dengan rata-rata diameter berturut-turut $7,33 \pm 0,58$ mm, $9,83 \pm 1,04$ mm, dan $18,83 \pm 2,02$ mm, sedangkan kontrol positif sebesar $13,83 \pm 0,76$ mm. Analisis ANOVA menunjukkan perbedaan yang nyata antarperlakuan ($p < 0,05$). Disimpulkan bahwa ekstrak daun kemangi memiliki aktivitas antibakteri terhadap *Vibrio* sp., dengan konsentrasi 5.000 ppm sebagai perlakuan paling efektif dan berpotensi dikembangkan sebagai alternatif antibakteri alami untuk pengendalian vibriosis pada budidaya ikan kakap putih.

Kata kunci: Antibakteri, Daun Kemangi, Ikan Kakap Putih, *Vibrio* sp.

SUMMARY

KEVIN ALFONSO. Potential Of Basil Leaf Extract (*Ocimum sanctum* L.) As An Antibacterial Agent Against *Vibrio* sp. IN White Seabass (*Lates calcarifer*). Supervised by DR. MUZAHAR and RIKA WULANDARI

Barramundi (*Lates calcarifer*) aquaculture faces a serious threat from *Vibrio* sp. infection, which can cause high mortality rates. The use of synthetic antibiotics for disease control has the potential to induce bacterial resistance and leave residues, thus necessitating natural alternatives. This study aimed to analyze the antibacterial activity of basil leaf extract (*Ocimum sanctum* L.) against *Vibrio* sp. in vitro and to determine the most effective concentration. The research was conducted from March to July 2026 at the Marine Biology Laboratory, Faculty of Marine Science and Fisheries, Universitas Maritim Raja Ali Haji. Basil leaf extract was obtained through maceration using 96% ethanol and tested using the disc diffusion method with a Completely Randomized Design (CRD) consisting of five treatments and three replications, namely negative control, positive control, and extract concentrations of 1,000, 3,000, and 5,000 ppm. Data were analyzed using ANOVA followed by Tukey's HSD test. The results showed that all extract treatments produced inhibition zones against *Vibrio* sp., with mean diameters of 7.33 ± 0.58 mm, 9.83 ± 1.04 mm, and 18.83 ± 2.02 mm, respectively, while the positive control produced 13.83 ± 0.76 mm. ANOVA analysis showed a significant difference among treatments ($p < 0.05$). It was concluded that basil leaf extract exhibits antibacterial activity against *Vibrio* sp., with a concentration of 5,000 ppm being the most effective treatment, and has the potential to be developed as a natural antibacterial alternative for controlling vibriosis in barramundi aquaculture.

Keywords: Antibacterial, Basil Leaf, White Seabass, *Vibrio* sp.

