

**UJI AKTIVITAS ANTIBAKTERI EKSTRAK KAPANG LAUT
YANG BERASOSIASI DENGAN LAMUN (*Enhalus* sp.) TERHADAP
PERTUMBUHAN *Aeromonas hydrophila***

ABSTRAK

Infeksi *Aeromonas hydrophila* merupakan tantangan signifikan dalam budidaya perikanan air tawar, menyebabkan kerugian ekonomi akibat tingginya mortalitas ikan. Ketergantungan pada antibiotik sintetis memicu resistensi dan masalah residu pada budidaya perikanan air tawar. Penelitian ini bertujuan mengeksplorasi potensi antibakteri dari ekstrak kapang endofit yang bersimbion dengan lamun *Enhalus* sp. untuk mengendalikan perumbuhan *Aeromonas hydrophila* secara *in vitro*. Kapang endofit diisolasi dari 3 jaringan tanaman lamun (daun, rhizom, dan daun) dan diisolasi pada *Potato Dextrose Agar* selama 7 hari. Setelah masa inkubasi pada media padat, masing-masing isolat kapang endofit dikultur dalam media *Potato Dextrose Broth* 7 hari. Kemudian kultur kapang endofit disaring dan filtratnya diekstraksi dengan 3 pelarut berbeda (n-heksana, etil asetat, dan metanol), serta diuapkan untuk memperoleh ekstrak kental. Metode *Kirby Bauer* digunakan untuk mengevaluasi potensi antibiotik kapang endofit terhadap mikroba patogen *Aeromonas hydrophila*. Konsentrasi yang digunakan untuk tiap ekstrak adalah 0,5 ppm, 1 ppm, dan 2 ppm, disc tetracycline sebagai kontrol positif, akuades steril sebagai kontrol negatif. Skrining fitokimia dianalisis secara kualitatif, dan karakteristik morfologi isolat terpilih diidentifikasi makroskopis dan mikroskopis. Hasil penelitian menunjukkan bahwa ekstrak daun dengan pelarut metanol pada konsentrasi 2 ppm memberikan zona hambat tertinggi (8,58 mm), mengindikasikan aktivitas antibakteri yang signifikan dibandingkan dengan konsentrasi ekstrak kasar lainnya. Skrining fitokimia mengonfirmasi keberadaan saponin dan flavonoid pada ekstrak kapang endofit daun lamun. Analisis mikroskopis dan makroskopis menunjukkan isolat kapang terpilih adalah *Alternaria* sp. Temuan penelitian ini dapat mendukung potensi kapang endofit dalam upaya eksplorasi senyawa bioaktif baru yang berpotensi sebagai agen pengendalian infeksi *Aeromonas hydrophila*.

Kata Kunci: *Aeromonas hydrophila*, antibakteri, *Enhalus* sp., kapang endofit

**ANTIBACTERIAL ACTIVITY TEST OF EXTRACTS OF SEA FISH
ASSOCIATED WITH LAMUN (*Enhalus* sp.) ON GROWTH OF *Aeromonas
hydrophila***

ABSTRACT

Aeromonas hydrophila infection is a significant challenge in freshwater aquaculture, causing economic losses due to high fish mortality. Dependence on synthetic antibiotics triggers resistance and residue problems in freshwater aquaculture. This study aims to explore the antibacterial potential of endophytic mold extracts that are symbionted with seagrass *Enhalus* sp. to control the growth of *Aeromonas hydrophila* in vitro. Endophytic molds were isolated from 3 seagrass plant tissues (leaves, rhizomes, and leaves) and isolated on Potato Dextrose Agar for 7 days. After the incubation period on solid media, each endophytic mold isolate was cultured in potato dextrose broth media for 7 days. Then the endophytic mold culture was filtered, and the filtrate was extracted with 3 different solvents (n-hexane, ethyl acetate, and methanol) and evaporated to obtain a thick extract. The Kirby-Bauer method was used to evaluate the antibiotic potential of endophytic molds against the pathogenic microbe *Aeromonas hydrophila*. The concentrations used for each extract were 0.5 ppm, 1 ppm, and 2 ppm, with a tetracycline disc as a positive control and sterile distilled water as a negative control. Phytochemical screening was analyzed qualitatively, and morphological characteristics of selected isolates were identified macroscopically and microscopically. The results showed that leaf extract with methanol solvent at a concentration of 2 ppm gave the highest inhibition zone (8.58 mm), indicating significant antibacterial activity compared to other concentrations of crude extract. Phytochemical screening confirmed the presence of saponins and flavonoids in the seagrass leaf endophytic mold extract. Microscopic and macroscopic analysis showed the selected mold isolate to be *Alternaria* sp. The findings of this study may support the potential of endophytic molds in efforts to explore new bioactive compounds that have the potential as control agents for *Aeromonas hydrophila* infection.

Keywords: *Aeromonas hydrophila*, antibacterial, *Enhalus* sp., endophytic molds