

## INTISARI

### DETEKSI RESISTENSI ANTIBIOTIK PADA *Aeromonas* spp. DARI BUDIDAYA IKAN AIR TAWAR DI KABUPATEN SLEMAN

Studi ini meninjau resistensi antibiotik pada bakteri *Aeromonas* spp. yang diisolasi dari ikan budidaya air tawar di Kabupaten Sleman. Sebanyak 73 isolat bakteri diperoleh melalui isolasi dan karakterisasi biokimia dasar. Metode Kirby Bauer disk diffusion digunakan untuk menganalisis resistensi antibiotik pada setiap isolat. Indeks resistensi antibiotik multipel (MAR) dihitung untuk setiap isolat guna menilai resistensi antibiotik multipel. Isolat yang resisten terhadap multiple antibiotik kemudian dianalisis untuk nilai MIC menggunakan metode mikrodilusi. Gen resistensi pada setiap isolat resistensi multipel diuji menggunakan PCR konvensional. Analisis menunjukkan bahwa rentang rata-rata indeks MAR adalah 0,00–0,18. Antibiotik ciprofloksasin menunjukkan tingkat resistensi tertinggi (8,22%) di antara semua isolat bakteri. Hasil MIC isolat resistensi multipel berkisar antara 0,094 hingga 2.048 µg/ml. Gen resistensi yang terdeteksi adalah *tetA*, *tetE*, *qnrS*, dan *su1*. Hal ini menunjukkan adanya resistensi antibiotik pada *Aeromonas* spp. yang sedang berkembang dan berisiko terhadap keberlanjutan budidaya perairan dan kesehatan masyarakat. Studi ini memberikan wawasan baru tentang kondisi resistensi antibiotik di lingkungan budidaya perairan tawar, khususnya di Kabupaten Sleman, dan menjadi peringatan mengenai pentingnya pemantauan dan pengelolaan antibiotik dalam budidaya perairan.

Kata kunci: *Aeromonas* spp., difusi cakram, gen resisten, *minimum inhibitory concentration*

## ABSTRACT

### DETECTION OF ANTIBIOTIC RESISTANCE IN *Aeromonas* spp. FROM FRESHWATER AQUACULTURE IN SLEMAN REGENCY

This study reviewed antibiotic resistance in *Aeromonas* spp. bacteria isolated from freshwater aquaculture in Sleman Regency. A total of 73 bacterial isolates were obtained through isolation and basic biochemical characterization. Kirby Bauer disk diffusion was used to analyze the antibiotic resistance of each isolate. The multiple antibiotic resistance (MAR) index was calculated for each isolate to assess multiple antibiotic resistance. Multiple-resistant isolates were then analyzed for MIC values using the microdilution method. The resistance genes of each multiple-resistant isolate were tested using conventional PCR. The analysis showed that the average range of the MAR index was 0.00–0.18. ciprofloxacin antibiotics showed the highest resistance rate (8.22%) among all bacterial isolates. The MIC results of the multiple-resistant isolates ranged from 0.094 to 2,048 µg/ml. The detected resistance genes were *tetA*, *tetE*, *qnrS*, and *su1*. This indicates the presence of antibiotic resistance, particularly among *Aeromonas* spp., which is emerging and poses a risk to the sustainability of aquaculture and public health. This study provides new insights into the condition of antibiotic resistance in freshwater aquaculture environments, particularly in Sleman Regency, and serves as a warning regarding the importance of monitoring and managing antibiotics in aquaculture.

**Keyword:** *Aeromonas* spp., disc diffusion, resistance gene, minimum inhibitory concentration.