

ABSTRAK

PREVALENSI *Escherichia coli* DAN PROFIL RESISTANSI TERHADAP TETRASIKLIN DAN STREPTOMISIN PADA IKAN NILA (*Oreochromis* sp.) DAN IKAN LELE (*Clarias* sp.) SERTA LINGKUNGAN KOLAM BUDIDAYA SEBAGAI INDIKATOR KESEHATAN MASYARAKAT VETERINER DI KECAMATAN MINGGIR

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Escherichia coli merupakan bakteri indikator pencemaran fekal yang keberadaannya dapat digunakan untuk mengevaluasi kualitas lingkungan budidaya dan keamanan pangan asal ikan. Penelitian ini bertujuan untuk mengetahui prevalensi *Escherichia coli* serta profil resistansinya terhadap tetrasiklin dan streptomisin pada ikan nila (*Oreochromis* sp.), ikan lele (*Clarias* sp.), serta lingkungan kolam budidaya di Kecamatan Minggir, Kabupaten Sleman. Sebanyak 91 sampel yang terdiri atas daging ikan, air sumber, air kolam, air buangan, dan tanah dikoleksi dari unit budidaya ikan nila dan ikan lele. Isolasi dan identifikasi bakteri dilakukan melalui tahap pengayaan menggunakan Buffered Peptone Water (BPW), penanaman pada Eosin Methylene Blue Agar (EMBA), pewarnaan Gram, serta uji biokimia meliputi TSIA, SIM, dan IMViC. Pengujian sensitivitas antibiotik dilakukan menggunakan metode difusi cakram (Kirby-Bauer) berdasarkan pedoman Clinical and Laboratory Standards Institute (CLSI). Hasil penelitian menunjukkan prevalensi *E. coli* sebesar 63,74% (58/91 sampel), dengan 49 isolat berasal dari ekosistem budidaya ikan nila dan 9 isolat berasal dari ekosistem budidaya ikan lele. Pengujian sensitivitas antibiotik menunjukkan bahwa 44,83% (26/58) isolat bersifat resistan terhadap tetrasiklin dan 56,90% (33/58) isolat bersifat resistan terhadap streptomisin, sedangkan 20,69% (12/58) isolat menunjukkan kategori intermediet terhadap streptomisin. Hasil penelitian menunjukkan bahwa *E. coli* ditemukan pada ikan air tawar dan lingkungan budidaya di Kecamatan Minggir serta sebagian isolat memiliki resistansi terhadap tetrasiklin dan streptomisin. Temuan ini dapat digunakan sebagai data dasar dalam pemantauan bakteri indikator dan resistansi antimikroba pada sistem budidaya perikanan.

Kata kunci: *Escherichia coli*, *Clarias* sp., Minggir, *Oreochromis* sp., Resistansi Antibiotik.

ABSTRACT

PREVALENCE OF *Escherichia coli* AND RESISTANCE PROFILES TO TETRACYCLINE AND STREPTOMYCIN IN NILE TILAPIA (*Oreochromis* sp.), CATFISH (*Clarias* sp.), AND AQUACULTURE POND ENVIRONMENTS AS INDICATORS OF VETERINARY PUBLIC HEALTH IN MINGGIR DISTRICT

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Escherichia coli is a fecal contamination indicator bacterium whose presence can be used to evaluate environmental quality in aquaculture systems and the safety of fish-derived food products. This study aimed to determine the prevalence of *Escherichia coli* and its resistance profiles to tetracycline and streptomycin in Nile tilapia (*Oreochromis* sp.), catfish (*Clarias* sp.), and aquaculture pond environments in Minggir District, Sleman Regency. A total of 91 samples consisting of fish tissue, source water, pond water, wastewater, and pond soil were collected from tilapia and catfish farming systems. Isolation and identification of the bacteria were performed through enrichment in *Buffered Peptone Water* (BPW), cultivation on *Eosin Methylene Blue Agar* (EMBA), Gram staining, and biochemical testing including TSIA, SIM, and IMViC. Antimicrobial susceptibility testing was conducted using the Kirby–Bauer disk diffusion method according to Clinical and Laboratory Standards Institute (CLSI) guidelines. The results showed an overall *E. coli* prevalence of 63.74% (58/91 samples), with 49 isolates originating from tilapia farming systems and 9 isolates from catfish farming systems. Antimicrobial susceptibility testing showed that 44.83% (26/58) of isolates were resistant to tetracycline and 56.90% (33/58) were resistant to streptomycin, while 20.69% (12/58) were categorized as intermediate to streptomycin. The study identified the presence of *E. coli* in freshwater fish and aquaculture pond environments in Minggir District, with a proportion of isolates showing resistance to tetracycline and streptomycin. These results provide baseline data information for monitoring indicator bacteria and antimicrobial resistance in aquaculture production systems.

Keywords: Antibiotic Resistance, *Clarias* sp., *Escherichia coli*, Minggir, *Oreochromis*