

Intisari

ISOLASI DAN IDENTIFIKASI BAKTERI PATOGEN PADA IKAN NILA MERAH (*Oreochromis sp.*) DI KALURAHAN MAGUWO HARJO KAPANEWON DEPOK KABUPATEN SLEMAN

Kasus penyakit bakterial seperti Streptococcosis dan MAS (*Motil Aeromonas Septicemia*) tantangan yang sering dihadapi oleh pembudidaya ikan nila air tawar di Indonesia. Penelitian ini bertujuan untuk mengisolasi dan mengidentifikasi bakteri patogen yang menyerang pada salah satu pembudidaya ikan nila di Kalurahan Maguwoharjo. Isolasi bakteri didapatkan dari ginjal, hati, limfa, rongga perut, dan mata ikan. Masing-masing organ dilakukan pengamatan histopatologi jaringan. Pemeriksaan sifat bakteri patogen dilakukan menggunakan uji *postulat Koch*. Karakterisasi bakteri dilakukan dengan uji biokimia serta identifikasi bakteri dilakukan secara molekuler berdasarkan target gen 16S rRNA. Bakteri patogen yang ditemukan berasal dari isolat N3VC1, N3MT2, N2MT1, N1HL1, dan N2VC1. Gejala berupa pemucatan organ hati, pembengkakan limfa, rongga perut berisi cairan bening, dan pembengkakan mata. Pengamatan histopatologi menunjukkan terjadinya lipidosis pada hati, penambahan *Melanomagrofag centers* pada limfa, serta pembengkakan pada iris. Isolat N3VC1 dan N3MT2 teridentifikasi sebagai bakteri patogen *Streptococcus agalactiae*. Isolat N2MT1, N1HL1, dan N2VC1 teridentifikasi sebagai bakteri patogen *Aeromonas hydrophila*, *A. jandaei*, dan *A. veronii*.

Kata kunci: Isolasi bakteri, *postulat Koch*, identifikasi molekuler, biokimia bakteri, 16S rRNA, Streptococcosis, MAS (*Motil Aeromonas Septicemia*).

Abstract

ISOLATION AND IDENTIFICATION OF PATHOGENIC BACTERIA IN RED TILAPIA (*Oreochromis sp.*) IN MAGUWOHARJO VILLAGE DEPOK SUB-DISTRICT SLEMAN REGENCY

Cases of bacterial diseases such as Streptococcosis and MAS (Motil *Aeromonas* Septicemia) are challenges often faced by freshwater tilapia farmers in Indonesia. This study aims to isolate and identify pathogenic bacteria affecting one of the tilapia farmers in Maguwoharjo Village. Bacterial isolation was obtained from the kidneys, liver, lymph nodes, abdominal cavity, and fish eyes. Each organ underwent histopathological observations of the tissues were conducted. The examination of the pathogenic bacterial properties was conducted using Koch's postulates. Bacterial characterization was performed with biochemical tests, and bacterial identification was carried out molecularly based on the 16S rRNA gene target. The pathogenic bacteria found originated from isolates N3VC1, N3MT2, N2MT1, N1HL1, and N2VC1. Symptoms include paleness of the liver organ, lymph swelling, abdominal cavity filled with clear fluid, and eye swelling. Histopathological observations show lipidosis in the liver, increased Melanomacrophage centers in the lymph, and swelling of the iris. Isolates from N3VC1 and N3MT2 were identified as the pathogenic bacteria *Streptococcus agalactiae*. Isolates from N2MT1, N1HL1, and N2VC1 were identified as the pathogenic bacteria *Aeromonas hydrophila*, *A. jandaei*, and *A. veronii*.

Keywords: Bacterial isolation, Koch's postulates, molecular identification, bacterial biochemistry, 16S rRNA, Streptococcosis, MAS (Motil *Aeromonas* Septicemia).