

Intisari

ISOLASI DAN IDENTIFIKASI BAKTERI PATOGEN PADA KERAPU CANTANG (*Epinephelus fuscoguttatus* x *Epinephelus lanceolatus*) DENGAN GEJALA MENGHITAM DI TAMBAK DESA LABUHAN, KECAMATAN BRONDONG, KABUPATEN LAMONGAN

Ikan kerapu banyak dibudidaya di perairan laut lepas dengan sistem karamba jaring apung (KJA), tetapi kerapu dibudidayakan oleh Kampung Kerapu, Desa Labuhan, Kecamatan Brondong, Kabupaten Lamongan di perairan darat pada kolam tambak. Serangan penyakit oleh bakteri merupakan salah satu tantangan dalam kegiatan budidaya ikan di tambak. Penelitian ini ditujukan untuk mengidentifikasi spesies bakteri *Vibrio* yang menyebabkan badan menghitam pada ikan kerapu cantang (*Epinephelus fuscoguttatus* x *Epinephelus lanceolatus*) di Tambak Kampung Kerapu. Gejala abnormal ikan berupa badan menghitam, operkulum geripis, warna hati tidak seragam dan pucat, serta limpa membesar. Isolasi bakteri berasal dari organ dalam dan sampel jaringan dari limpa, hati, dan insang. Ditemukan enam koloni tunggal lalu digolongkan menjadi empat isolat. Pembuktian isolat bakteri penyebab penyakit pada ikan melalui postulat Koch. Identifikasi bakteri secara molekuler menggunakan primer pyrH80F/pyrH530R dan uji biokimia. Dua isolat memiliki gejala sama dengan ikan kerapu sakit di Tambak Kampung Kerapu, yaitu KL5TS1.1 bergejala badan menghitam dan KL5TS3.2 bergejala hati pucat. Hasil sekuensing mengarah pada spesies *Vibrio alginolyticus* dengan persentase kesamaan 100% pada isolat KL5TS3.2 dan 99,79% pada isolat KL5TS1.1 serta kedua isolat positif pada katalase, oksidase, sitrat, *methyl red* (MR), *voges proskauer* (VP), motilitas, indol, glukosa, dan manitol. Histopatologi yang ditemukan *melanomacrophage centers* (MMC) dan degenerasi hidrofik di organ limpa serta hemoragik, degenerasi hidrofik, dan kongesti di hati. Kesimpulan penelitian yaitu bakteri *Vibrio alginolyticus* merupakan bakteri patogen penyebab penyakit dengan gejala menghitam di ikan kerapu cantang.

Kata kunci: tambak, kerapu, *Vibrio alginolyticus*, postulat Koch, pyrH

Abstract

ISOLATION AND IDENTIFICATION OF PATHOGEN BACTERIA IN CANTANG GROUPER (*Epinephelus fuscoguttatus* x *Epinephelus lanceolatus*) WITH BLACKENED SYMPTOMS IN LABUHAN VILLAGE POND, BRONDONG DISTRICT, LAMONGAN REGENCY

Grouper culture is often found in the open sea using the floating net cage system, but Kampung Kerapu, Labuhan Village, Brondong District, Lamongan Regency practice grouper cultivation in land waters in ponds. Bacterial diseases pose a significant and formidable challenge to fish farming activities in ponds. The focus of this research is to identify the species of *Vibrio* bacteria that cause blackened bodies in cantang grouper (*Epinephelus fuscoguttatus* x *Epinephelus lanceolatus*) in the Kampung Kerapu Pond. Abnormal symptoms of fish include a blackened body, thin operculum, uneven and pale liver color, and an enlarged spleen. Bacterial isolation came from internal organs and tissue samples from the spleen, liver, and gills. Six single colonies were found and then classified into four isolates. Proving bacterial isolates that cause disease in fish using Koch's postulates. Molecular identification of bacteria using primers pyrH80F/pyrH530R and biochemical tests. Two isolates had the same symptoms as sick grouper in the Pond, isolate KL5TS1.1 had symptoms a blackened body and KL5TS3.2 had symptoms of a pale liver. The sequencing results confirmed that those isolates are species *Vibrio alginolyticus* with a similarity of 100% for isolate KL5TS3.2 and 99,79% for isolate KL5TS1.1 and both isolates were positive for catalase, oxidase, citrate, methyl red (MR), voges proskauer (VP), motility, indole, glucose, fructose, lactose, and mannitol. Histopathology found melanomacrophage centers (MMC) and necrosis in the spleen as well as hemorrhage, granulomas, and congestion in the liver. The findings of this research conclude that *Vibrio alginolyticus* is the pathogenic bacterium responsible for causing the disease characterized by blackened symptoms in cantang grouper fish.

Keywords: pond, grouper, *Vibrio alginolyticus*, Koch's postulates, pyrH