

ABSTRAK

Kematian massal pada udang vannamei merupakan permasalahan serius dalam budidaya intensif, salah satunya disebabkan oleh infeksi bakteri patogen yang menyerang organ vital seperti hepatopankreas. Penelitian ini bertujuan untuk mengetahui kelimpahan dan karakteristik bakteri yang diisolasi dari hepatopankreas udang vannamei yang mengalami kematian di tambak intensif di Nusawungu, Kabupaten Cilacap. Metode penelitian dilakukan melalui observasi langsung, isolasi bakteri dengan media TSA, penghitungan kelimpahan menggunakan metode Total Plate Count (TPC), serta uji biokimia untuk karakterisasi. Hasil penelitian menunjukkan bahwa kelimpahan bakteri berkisar antara $16,56 \times 10^6$ hingga $45,30 \times 10^6$ CFU/g. Karakteristik koloni bakteri yang ditemukan bervariasi, dengan dominasi bentuk *circular*, elevasi *flat* dan *convex*, serta warna koloni kuning dan putih. Hasil uji biokimia menunjukkan lima isolat bersifat gram positif dan lima lainnya gram negatif, dengan variasi kemampuan dalam fermentasi karbohidrat, aktivitas enzim katalase, oksidase, serta produksi enzim protease. Penelitian ini menunjukkan potensi adanya infeksi bakteri yang dapat memicu kerusakan organ dan kematian udang, sehingga diperlukan tindakan preventif dan diagnostik yang lebih lanjut untuk mendukung keberhasilan budidaya intensif.

Kata kunci: udang vannamei, hepatopankreas, kelimpahan bakteri, karakteristik bakteri, uji biokimia.

ABSTRACT

Mass mortality in vannamei shrimp is a serious problem in intensive aquaculture, one of which is caused by pathogenic bacterial infections that attack vital organs such as the hepatopancreas. This study aims to determine the abundance and characteristics of bacteria isolated from the hepatopancreas of vannamei shrimp that died in intensive ponds in Nusawungu, Cilacap Regency. The research methods included direct observation, bacterial isolation using TSA medium, abundance counting using the Total Plate Count (TPC) method, and biochemical tests for characterization. The results showed that bacterial abundance ranged from 16.56×10^6 to 45.30×10^6 CFU/g. The characteristics of the bacterial colonies varied, with a dominance of circular shapes, flat and convex elevations, and yellow and white colony colors. Biochemical test results indicated that five isolates were Gram-positive and five were Gram-negative, with variations in carbohydrate fermentation ability, catalase and oxidase enzyme activity, and protease enzyme production. This study highlights the potential for bacterial infections that could cause organ damage and shrimp mortality, necessitating further preventive and diagnostic measures to support the success of intensive aquaculture.

Keywords: *vannamei shrimp, hepatopancreas, bacterial abundance, bacterial characteristics, biochemical tests.*