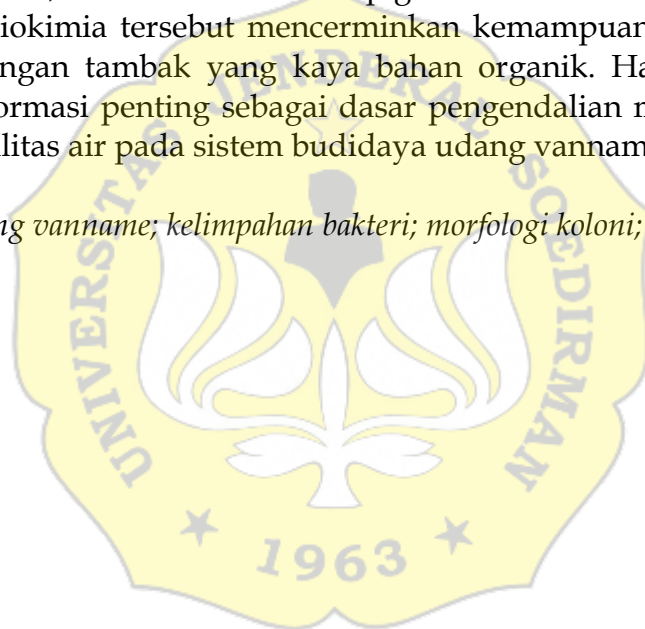


ABSTRAK

Kondisi mikrobiologi media budidaya berpengaruh langsung terhadap kualitas air dan kesehatan udang, terutama pada sistem tambak intensif. Penelitian ini bertujuan untuk mengidentifikasi kelimpahan dan karakteristik bakteri dalam air budidaya udang vanname (*Litopenaeus vannamei*) di tambak intensif pada fase DOC ke-51. Penelitian ini menggunakan pendekatan eksploratif observasional. Kelimpahan dihitung menggunakan metode *Total Plate Count* (TPC), sedangkan karakterisasi dilakukan melalui pengamatan morfologi koloni dan uji biokimia (Gram, KOH, katalase, oksidase, protease, serta fermentasi glukosa, laktosa, dan sukrosa). Hasil menunjukkan kelimpahan berkisar antara $6,10 \times 10^5$ hingga $9,00 \times 10^6$ CFU/mL, dengan tujuh dari delapan isolat melebihi ambang baku mutu ($\geq 1,1 \times 10^6$ CFU/mL). Sebanyak dua belas isolat diperoleh, mayoritas bersifat Gram negatif dan menunjukkan aktivitas enzimatis positif terhadap katalase, oksidase, dan protease. Beberapa isolat memiliki kemampuan fermentatif terhadap disakarida, namun tidak terhadap glukosa. Keanekaragaman karakter morfologi dan biokimia tersebut mencerminkan kemampuan adaptasi bakteri terhadap lingkungan tambak yang kaya bahan organik. Hasil penelitian ini memberikan informasi penting sebagai dasar pengendalian mikrobiologis dan pemantauan kualitas air pada sistem budidaya udang vanname secara intensif.

Kata kunci: Udang vanname; kelimpahan bakteri; morfologi koloni; uji biokimia.



ABSTRACT

The microbiological condition of the culture medium directly influences water quality and shrimp health, particularly in intensive pond systems. This study aimed to identify the abundance and characteristics of bacteria in the rearing water of Litopenaeus vannamei in intensive farming during the DOC 51 phase. The research employed an exploratory observational approach. Bacterial abundance was measured using the Total Plate Count (TPC) method, while bacterial characterization was conducted through colony morphology observation and biochemical tests (Gram staining, KOH, catalase, oxidase, protease, and fermentation of glucose, lactose, and sucrose). Results showed that bacterial abundance ranged from 6.10×10^5 to 9.00×10^6 CFU/mL, with seven out of eight isolates exceeding the quality standard threshold ($\geq 1.1 \times 10^6$ CFU/mL). A total of twelve isolates were obtained, the majority of which were Gram-negative and exhibited positive enzymatic activity for catalase, oxidase, and protease. Several isolates showed the ability to ferment disaccharides but not glucose. The diversity in morphological and biochemical characteristics reflects the adaptive capacity of bacteria to organic-rich aquaculture environments. These findings provide important baseline data for microbiological control and water quality monitoring in intensive L. vannamei farming systems.

Keywords: *Litopenaeus vannamei; bacterial abundance; colony morphology; biochemical tests.*

