ABSTRAK

PROFIL IMUNITAS DAN HEPATOPANKREAS UDANG, SERTA KUALITAS AIR DI PERAIRAN TAMBAK UDANG VANAME *Litopenaeus vannamei* (BOONE, 1931) DI BAKAUHENI, LAMPUNG SELATAN PASCA EL NINO EKSTREM 2023

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Perubahan iklim diduga menjadi salah satu faktor utama yang dapat memengaruhi kondisi udang dan perairan tambak. Berdasarkan BMKG pada tahun 2023 Indonesia mengalami fenomena El Nino yang lebih ekstrem dari tahun 2020. Penelitian ini bertujuan untuk mengkaji profil imunitas, hepatopankreas udang, dan kualitas air di perairan tambak udang vaname (*Litopenaeus vannamei*) di Bakauheni, Lampung Selatan pasca El Nino ekstrem 2023. Penelitian ini dilakukan secara eksploratif dengan pengambilan sampel sebanyak 4 kali dalam sebulan di 3 tambak yang berlokasi di Bakauheni, Lampung Selatan. Hasil penelitian menunjukkan bahwa total hemosit udang vaname di bawah standar udang normal, aktivitas fagositosis dan indeks fagosit menunjukkan adanya aktivitas sel-sel fagosit yang memfagositosis lebih dari satu sel bakteri. Uji lipid *droplet* menunjukkan kandungan lipid udang di hepatopankreas berkisar 65-85% dan adanya kerusakan pada hepatopankreas pada uji histopatologi berupa vakuolasi dan nekrosis. Kelimpahan bakteri *Vibrio* sp. melebihi ambang batas maksimal serta plankton didominasi oleh fitoplankton spesies *Chlorella*. Kualitas air lainnya yaitu oksigen terlarut/*dissolved oxygen* (DO), salinitas, dan fosfat berada pada kondisi normal, sedangkan suhu, pH, alkalinitas, *total organic matter* (TOM) dan amonium tidak memenuhi standar mutu. Penelitian ini mengkonfirmasi bahwa perubahan iklim pasca terjadinya fenomena El Nino 2023 berpengaruh terhadap profil imunitas, hepatopankreas udang dan kualitas air di perairan tambak udang vaname di Bakauheni, Lampung Selatan.

Kata Kunci : El Nino, hepatopankreas, imunitas, kualitas air, udang vaname.

ABSTRACT

THE IMMUNITY AND HEPATOPANCREAS PROFILES OF PASIFIC WHITE SHRIMP *Litopenaeus vannamei* (BOONE, 1931) AND WATER QUALITY AROUND SHRIMP PONDS IN BAKAUHENI, SOUTH LAMPUNG AFTER EXTREME EL NINO 2023

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Climate change is thought to be one of the main factors that can influence the condition of shrimp and pond waters. Based on BMKG, in 2023 Indonesia experienced an El Nino phenomenon that is more extreme than in 2020. This research aimed to examine the immune profile, hepatopancreas histopathology of shrimp and water quality in the waters of vaname shrimp (*Litopenaeus vannamei*) ponds in Bakauheni, South Lampung after the extreme El Nino 2023 This research was conducted exploratively by taking samples 4 times a month in 3 ponds located in Bakauheni, South Lampung. The results of the study showed that the total haemocytes of vaname shrimp were below normal standards, the phagocytic activity and phagocytic index indicated the activity of phagocytic cells that phagocytized more than one bacterial cell. The lipid droplet test showed that the shrimp lipid content in the hepatopancreas was around 65-85% and there was damage to the hepatopancreas in the histopathological test in the form of vacuolation and necrosis. The abundance of *Vibrio* sp. exceeds the maximum threshold and the plankton is dominated by *Chlorella* species phytoplankton. Other water qualities, namely dissolved oxygen (DO), salinity and phosphate, are at normal conditions. Meanwhile, temperature, pH, alkalinity, total organic matter (TOM) and ammonium have values that do not meet quality standards. This research confirms that climate change after the El Nino phenomenon in 2023 has an effect on the immunity, hepatopancreas profile, and water quality in the waters of vaname shrimp ponds in Bakauheni, South Lampung.

Keywords : El Nino, hepatopancreas, immunity, water quality, vaname shrimp.