

## ABSTRAK

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

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Keadaan cuaca pasca El Nino ekstrem diduga menyebabkan permasalahan pada perairan tambak. Tujuan dari penelitian ini adalah untuk mengkaji profil imunitas dan hepatopankreas udang vaname serta kualitas air di Kecamatan Kalianda, Kabupaten Lampung Selatan selama periode Februari-Maret 2024. Penelitian ini merupakan penelitian eksploratif dengan mengkaji pengaruh El Nino terhadap profil imunitas udang dan kualitas air di sekitar tambak. Pengambilan sampel udang dilakukan di 3 stasiun dengan 4 kali pengambilan, untuk pengukuran *total haemocyte count* (THC), aktivitas fagositosis (AF), indeks fagositosis (IF), *lipid droplet*, hepatopankreas, kelimpahan plankton, kualitas air (*dissolved oxygen*, alkalinitas, *total organic matter*, fosfat, dan ammonium) serta perhitungan koloni bakteri *Vibrio* sp. Pengukuran kualitas air (suhu, pH, salinitas) dilakukan 30 hari. Hasil penelitian menunjukkan pada parameter THC, AF dan IF, serta *lipid droplet* didapatkan hasil yang belum optimal. Pada parameter hepatopankreas didapatkan hasil pengamatan yang cukup baik dan pada parameter total *Vibrio* sp. dan kelimpahan plankton sudah dalam nilai yang optimal, sedangkan pada parameter harian dan mingguan terdapat beberapa parameter yang masih melebihi nilai yang sesuai dengan baku mutu. Oleh karena itu, pengelolaan kualitas air pada kegiatan budi daya di tambak udang perlu dikontrol dan ditingkatkan lebih baik lagi agar mendapatkan hasil yang baik terhadap imunitas, hepatopankreas, dan kualitas air.

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 AT SHRIMP PONDS IN KALIANDA, SOUTH LAMPUNG AFTER EXTREME EL NINO 2023

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Weather conditions after the extreme El Nino are expected to cause problems in pond waters. The purposes of this study were to observe the immunity and hepatopancreas profile of white shrimp (*Litopenaeus vannamei*) and water quality in Kalianda subdistrict, South Lampung Regency during February-March 2024. This research was an observatory study by examining the influence of El Nino on shrimp immunity profiles and pond's water quality. Shrimp sampling was conducted at 3 stations with 4 sampling times, for measurement of total haemocyte count, phagocytic activity, phagocytic index, lipid droplets, histopathology of hepatopancreas, plankton abundance, water quality (dissolved oxygen, alkali, total organic matter, phosphate, and ammonium) and calculation of *Vibrio* bacterial colonies. Water quality measurements (temperature, pH, salinity) were conducted for 30 days. The results showed that in the parameters of THC, PA and PI, as well as lipid droplet were not optimal. Histopathology of hepatopancreas obtained quite good observations. The parameters of total *Vibrio* sp. and plankton abundance were still in optimal values. The daily and weekly water quality were exceed the value in accordance with quality standards. Therefore, water quality management in shrimp pond culture activities need to be better controlled and improved in order to get good results on immunity, histopathology, and water quality parameters.

*Keywords:* El Nino, hepatopancreas, immunity, vaname, water quality