

## **ABSTRAK**

### **DAYA DUKUNG TAMBAK UDANG VANAME (*Litopenaeus vannamei*) SALINITAS TINGGI PADA ASPEK KUALITAS AIR DAN MINERAL DI DESA PURWOREJO, KECAMATAN PASIR SAKTI, KABUPATEN LAMPUNG TIMUR**

**Oleh**

**WUNI ALFIONITA**

Dalam budidaya udang vaname, daya dukung lingkungan tambak menjadi salah satu faktor pendukung produktivitas budidaya. Tujuan dari penelitian ini yaitu untuk mengevaluasi daya dukung lingkungan tambak udang vaname salinitas tinggi pada aspek kualitas air dan mineral serta untuk menentukan upaya pengembangan budidaya udang vaname berbasis daya dukung lingkungan. Penelitian ini merupakan penelitian eksploratif dengan mengamati produktivitas budidaya udang vaname di Desa Purworejo, Kecamatan Pasir Sakti, Kabupaten Lampung Timur selama November-Desember 2022. Parameter penelitian yang diamati meliputi parameter fisika, kimia, biologi, dan mineral air. Hasil yang didapatkan yaitu suhu 28-31°C, salinitas 18-22 ppt, pH pagi 7,5-8,4 dan pH sore 8,0-8,7, DO pagi 4,5-5,3 mg/l dan DO sore 6,2-8,8 mg/l, TAN 0,008-0,134 mg/l, nitrit 0,035-0,269 mg/l, TOM 48-81 mg/l, alkalinitas 115-260 mg/l, kesadahan 1300-2500 mg/l, kelimpahan plankton 17,8-89,6 cell/ml, TVC  $2,4 \times 10^3$ - $6,3 \times 10^3$ , kalsium (Ca) 186,7-266,7 mg/l, magnesium (Mg) 307,4-396,4 mg/l, kalium (K) 4,91-189,16 mg/l, dan natrium 401,34-11662,1 mg/l. Kesimpulan yang didapatkan yaitu terdapat parameter kualitas air dan mineral yang tidak optimal sehingga perlu dilakukan pemberian perlakuan agar kualitas air dan mineral menjadi optimal serta mendukung kegiatan budidaya udang vaname. Tingkat kesesuaian tambak berada pada kategori S2 (sesuai) dengan skor T1 sebesar 41, T2 sebesar 42, dan T3 sebesar 41.

**Kata Kunci:** *udang vaname, daya dukung lingkungan, tambak, kualitas air*

## **ABSTRACT**

### **THE CARRYING CAPACITY OF HIGH SALINITY PACIFIC WHITE SHRIMP (*Litopenaeus vannamei*) PONDS IN THE ASPECT OF WATER QUALITY AND MINERAL AT PURWOREJO, PASIR SAKTI SUBDISTRICT, EAST LAMPUNG DISTRICT**

**By**

**WUNI ALFIONITA**

Pacific white shrimp (*Litopenaeus vannamei*) is one of the cultivated commodities that is in great demand by the public because it has promising prospects and profits. In the cultivation of pacific white shrimp, the carrying capacity of the pond environment is one of the factors supporting the productivity of aquaculture. The purpose of this study was to evaluate the environmental carrying capacity of high-salinity pacific shrimp ponds in terms of water and mineral quality and to determine efforts to develop vannamei shrimp culture based on environmental carrying capacity. This research was an exploratory study by observing the productivity of pacific white shrimp culture in Purworejo during November-December 2022. The research parameters were observed included physical, chemical, biological, and mineral parameters of water. The results obtained were temperature 28-31°C, salinity 18-22 ppt, morning pH 7.5-8.4 and afternoon pH 8.0-8.7, DO morning 4.5-5.3 mg/l and afternoon DO 6.2-8.8 mg/l, TAN 0.008-0.134 mg/l, nitrite 0.035-0.269 mg/l, TOM 48-81 mg/l, alkalinity 115-260 mg/l, hardness 1300-2500 mg/l, abundance of plankton 17.8-89.6 cell/ml, TVC 2.4 x 10<sup>3</sup>-6.3 x 10<sup>3</sup>, Ca 186.7-266.7 mg/l, Mg 307.4-396.4 mg/l, K 4.91-189.16 mg/l, and Na 401.34 -11662.1 mg/l. The conclusion obtained is that there are water and mineral quality parameters that are not optimal so it is necessary to provide treatment so that the water and mineral quality becomes optimal and supports vaname shrimp cultivation activities. The level of suitability of the pond is in the S2 (appropriate) category with a T1 score of 41, T2 of 42, and T3 of 41. 1 mg/l.

**Keywords:** *pacific white shrimp, carrying capacity, ponds, water quality*