

## ABSTRAK

**FITRIANI PANGGALO. 105941100624.** Pengaruh Pemberian Probiotik *Bacillus* sp. Terhadap Kelimpahan *Vibrio* sp. dan Kelangsungan Hidup Udang Vaname (*Litopenaeus vannamei*) Pada Media Pemeliharaan Skala Kolam, dibimbing oleh Darmawati dan Abdul Malik.

Udang vaname (*Litopenaeus vannamei*) merupakan komoditas perikanan Indonesia yang memiliki nilai ekonomis tinggi. Namun, budidaya udang vaname menghadapi tantangan serius akibat serangan bakteri patogen *Vibrio* sp. yang menyebabkan penyakit vibriosis dan dapat mengakibatkan kematian massal. Parameter yang diamati meliputi kelimpahan bakteri *Vibrio* sp. menggunakan metode *Total Plate Count* (TPC) dengan media TCBS, kelangsungan hidup (SR), dan kualitas air (pH, suhu, salinitas, DO, dan amonium). Data dianalisis menggunakan ANOVA dan uji lanjut Duncan pada taraf kepercayaan 95%. Hasil penelitian menunjukkan bahwa pemberian probiotik *Bacillus* sp. berpengaruh nyata ( $p < 0,05$ ) terhadap kelimpahan bakteri *Vibrio* sp. dan kelangsungan hidup udang vaname. Perlakuan 15 ppm menghasilkan kelimpahan *Vibrio* sp. terendah dengan koloni kuning  $2,2 \times 10^3$  CFU/mL dan koloni hijau  $4 \times 10^2$  CFU/mL, serta tingkat kelangsungan hidup tertinggi sebesar 99,9%. Sebaliknya, perlakuan kontrol menunjukkan kelimpahan tertinggi (koloni kuning  $7,4 \times 10^4$  CFU/mL dan koloni hijau  $7,5 \times 10^4$  CFU/mL) dengan kelangsungan hidup terendah 99,23%. Parameter kualitas air pada semua perlakuan berada dalam kisaran optimal. Dapat disimpulkan bahwa pemberian probiotik *Bacillus* sp. dengan dosis 15 ppm merupakan perlakuan terbaik untuk menekan kelimpahan bakteri *Vibrio* sp. dan meningkatkan kelangsungan hidup udang vaname pada budidaya skala kolam.

**Kata kunci:** Udang vaname, *Bacillus* sp., *Vibrio* sp., probiotik, kelangsungan hidup, kelimpahan bakteri

## **ABSTRACT**

**FITRIANI PANGGALO 105941100624.** *The Effect of Bacillus sp. Probiotic on Vibrio sp. Abundance and Survival of Whiteleg Shrimp (Litopenaeus vannamei) in Pond-Scale Maintenance Media, supervised by Darmawati and Abdul Malik.*

*Whiteleg shrimp (Litopenaeus vannamei) is an Indonesian fishery commodity with high economic value. However, whiteleg shrimp cultivation faces serious challenges due to attacks by the pathogenic bacteria Vibrio sp., which causes vibriosis and can lead to mass mortality. Parameters observed included Vibrio sp. abundance using the Total Plate Count (TPC) method with TCBS media, survival rate (SR), and water quality (pH, temperature, salinity, DO, and ammonium). Data were analyzed using ANOVA and Duncan's advanced test at a 95% confidence level. The results showed that the administration of Bacillus sp. probiotics had a significant effect ( $p < 0.05$ ) on Vibrio sp. abundance and survival of whiteleg shrimp. The 15 ppm treatment resulted in the lowest abundance of Vibrio sp. with  $2.2 \times 10^3$  CFU/mL of yellow colonies and  $4 \times 10^2$  CFU/mL of green colonies, as well as the highest survival rate of 99.9%. In contrast, the control treatment showed the highest abundance ( $7.4 \times 10^4$  CFU/mL of yellow colonies and  $7.5 \times 10^4$  CFU/mL of green colonies) with the lowest survival rate of 99.23%. Water quality parameters in all treatments were within the optimal range. It can be concluded that the administration of the probiotic Bacillus sp. at a dose of 15 ppm is the best treatment for suppressing the abundance of Vibrio sp. bacteria and increasing the survival of whiteleg shrimp in pond-scale cultivation.*

**Keywords:** *Whiteleg shrimp, Bacillus sp., Vibrio sp., probiotics, survival, bacterial abundance*