

ABSTRAK

EVALUASI PEMBERIAN PROBIOTIK BERBEDA TERHADAP TOTAL *Vibrio* sp. DAN PERFORMA PERTUMBUHAN *POST LARVA* UDANG VANAME (*Litopenaeus vannamei*)

Oleh

SUCI DUWI AFRILIA

Udang vaname (*Litopenaeus vannamei*) merupakan komoditas ekspor utama Indonesia, namun proses pembenihannya sering terkendala penyakit vibriosis akibat infeksi *Vibrio* sp. yang dapat menyebabkan kematian massal pada stadia larva. Penggunaan probiotik, baik *single spesies* maupun *multi spesies*, berpotensi menekan patogen, memperbaiki kualitas air, dan meningkatkan performa pertumbuhan. Penelitian ini bertujuan mengevaluasi pengaruh pemberian probiotik berbeda terhadap total *Vibrio* sp. dan performa pertumbuhan *post larva* udang vaname. Penelitian menggunakan Rancangan Acak Lengkap dengan tiga perlakuan dan empat ulangan, yaitu P1 (tanpa probiotik), P2 (probiotik *single spesies Bacillus* sp.), dan P3 (probiotik *multi spesies Bacillus* sp., *Lactobacillus* sp., *Enterococcus* sp., dan *Pediococcus* sp.). *Post larva* 1 (PL1) dipelihara selama 12 hari dengan kepadatan 50 ekor/L, dan probiotik diberikan setiap hari dengan dosis 3 ppm. Parameter yang diamati meliputi *Total Vibrio Count* (TVC) pada media dan tubuh udang, pertumbuhan panjang, *lipid droplet*, tingkat kelangsungan hidup, dan kualitas air. Hasil menunjukkan bahwa probiotik *multi spesies* secara signifikan ($P < 0,05$) paling efektif menekan pertumbuhan *Vibrio* sp. pada tubuh udang, serta menghasilkan pertumbuhan panjang mutlak dan akumulasi *lipid droplet* tertinggi. Meskipun TVC pada P2 dan P3 tidak berbeda nyata pada media pemeliharaan dan SR tidak berbeda nyata antar perlakuan. Selain itu, perlakuan P3 lebih efektif dalam menjaga stabilitas kualitas air. Kesimpulannya, penambahan probiotik, khususnya *multi spesies*, efektif dalam meningkatkan performa pertumbuhan dan menekan pertumbuhan *Vibrio* sp. pada *post larva* udang vaname.

Kata Kunci: *Multi Spesies*, Probiotik, *Single Spesies*, Udang Vaname, *Vibrio* sp.

ABSTRACT

EVALUATION OF DIFFERENT PROBIOTIC ADMINISTRATION ON TOTAL *Vibrio* sp. AND GROWTH PERFORMANCE OF WHITELEG SHRIMP POST LARVAE (*Litopenaeus vannamei*)

By

SUCI DUWI AFRILIA

Litopenaeus vannamei is one of Indonesia's primary export commodities; however, hatchery production is frequently constrained by vibriosis caused by *Vibrio* sp. infection, which can lead to mass mortality during the larval stages. The application of probiotics, either as single-species or multi-species formulations, has the potential to suppress pathogenic bacteria, improve water quality, and enhance growth performance. This study aimed to evaluate the effects of different probiotic treatments on total *Vibrio* sp. and the growth performance of post-larval whiteleg shrimp. The experiment employed a Completely Randomized Design with three treatments and four replicates: P1 (without probiotic), P2 (single-species probiotic *Bacillus* sp.), and P3 (multi-species probiotic consisting of *Bacillus* sp., *Lactobacillus* sp., *Enterococcus* sp., and *Pediococcus* sp.). Post-larvae stage 1 (PL1) were reared for 12 days at a density of 50 individuals L⁻¹, and probiotics were administered daily at a dose of 3 ppm. Observed parameters included Total *Vibrio* Count (TVC) in the rearing water and shrimp body, absolute length growth, lipid droplet accumulation, Survival Rate (SR), and water quality. The results indicated that the multi-species probiotic treatment significantly ($P < 0,05$) reduced *Vibrio* sp. levels in the shrimp body and produced the highest absolute length growth and lipid droplet accumulation. Although TVC in the rearing water between P2 and P3 was not significantly different, and SR did not differ significantly among treatments, the multi-species probiotic was more effective in maintaining water quality stability. In conclusion, probiotic supplementation, particularly multi-species formulations, effectively enhances growth performance and suppresses *Vibrio* proliferation in post-larval whiteleg shrimp.

Keywords: Multi-Species, Probiotic, Single-Species, *Vibrio* sp., Whiteleg Shrimp.