

Development of Probiotics: Determination of LD₅₀ of
Previously Isolated Indigenous Vibriolytic Bacteria,
Pseudomonas aeruginosa JP4, to
Penaeus monodon Postlarvae

An Undergraduate Thesis
Presented to the Faculty of
Biological Sciences Division
University of the Philippines in the Visayas
Miag-ao, Iloilo

Billena, Ma. Thesa M.

In Partial Fulfillment
For the Requirements
In Biology 200

June 2000

Abstract

Previous studies showed that *Pseudomonas aeruginosa* JP4 is effective in eliminating pathogenic *Vibrio* spp. on shrimp. However, virulence studies on this strain are lacking. Hence, this study was conducted to test the pathogenicity of *P. aeruginosa* JP4, using different bacterial densities of 10^4 , 10^6 , 10^7 , 10^8 , 10^9 and 10^{10} CFU/ml. These were introduced to *Penaeus monodon* postlarvae 13 (PL₁₃) and early juvenile (PL₂₅) stages. After 3 days of monitoring, mortality rates and LD₅₀ values were determined using Reed-Muench method. Results showed that shrimps can not tolerate higher bacterial densities with LD₅₀ of 1.15×10^7 CFU/ml and 1.12×10^8 CFU/ml for PL₁₃ and PL₂₅, respectively. The relatively high LD₅₀ values on shrimp stages PL₁₃ and PL₂₅ indicate a low virulence of the bacterial strain. Hence, *P. aeruginosa* JP4 maybe used as potential vibriolytic bacteria.