ABSTRACT

THE ABILITY OF *Campylobacter* sp. TI6, *Listeria* sp. TI1, AND *Nitrosococcus* sp. TII5 BACTERIA TO DEGRADE TAN (*Total Ammonia Nitrogen*) IN REARING VANNAMEI SHRIMP (*Litopenaeus vannamei*)

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Three indigenous bacterial isolates from shrimp ponds in South Lampung namely *Campylobacter* sp. TI6, *Listeria* sp. TI1, and *Nitrosococcus* sp. TII5 were proven to reduce the value of Total Ammonia Nitrogen (TAN) *in vitro*. This study was conducted to determine level of pathogenicity from *Campylobacter* sp. TI6, *Listeria* sp. TI1, and *Nitrosococcus* sp. TII5 toward the vannamei shrimp larvae and effectiveness of these bacteria to degrade TAN at the laboratory scale. Pathogenicity test was conducted using the LD_{50}, respectively provided in the density of bacteria 10^3, 10^4, 10^5, and 10^6 CFU/ ml. The results showed that those bacteria were not pathogenic because there was no concentration of bacteria that able killed the shrimp larvae more than 50%. Density of bacteria that was used in the test of degrading ability of TAN was 10^6 CFU/ ml. The ability test of bacteria to degrade TAN was performed *in vivo* with 2 treatments i.e. rearing of vannamei shrimp with using bacterial bioremediation and organic and the rearing of vannamei shrimp without bacterial bioremediation, but still considering the organic waste. The results showed that the bacteria *Campylobacter* sp. TI6 could reduce the TAN value of 0.08 mg/ L, *Listeria* sp. TI1 of 0.03 mg/ L and *Nitrosococcus* sp. TII5 of 0.04 mg/ L.

Keywords : *Campylobacter* sp. TI6, *Listeria* sp. TI1, *Nitrosococcus* sp. TII5, Total Ammonia Nitrogen (TAN), *Litopenaeus vannamei*