

ABSTRACT

THE EFFECTIVITY OF GIVING *Bacillus polymyxa* BACTERIA THROUGH FEED ON NON-SPECIFIC IMUNITY OF VANNAMEI SHRIMP (*Litopenaeus vannamei*)

By

Muhammad Haris Kurniawan

The addition of *Bacillus polymyxa* bacteria in the feed as immunostimulant is one of the efforts of disease prevention on vannamei shrimp (*Litopenaeus vannamei*). The aimed of this research was to know the effectivity of the use of *Bacillus polymyxa* bacteria in feed towards the non-specific immunity of vannamei shrimp. This research consisted of 4 treatments namely feed with the density of *Bacillus polymyxa* bacteria 0 cell/ml as control (A), 10^4 cell/ml (B), 10^6 cell/ml (C) and 10^8 cell/ml (D) and each treatment is repeated 3 times. This research has been done in 15 days. Parameters that observed this research were total haemocyte count (THC), phagocytosis activity, differential haemocyte count (DHC) and water quality. The results showed that the addition *Bacillus polymyxa* bacteria of 10^6 cell/ml was able to improve THC value $6,6 \times 10^7$ cell/ml on the day 10. The DHC value was in the normal range which is hyalin cell was 52-89% and granular cell was 11-48%. The quality of water maintenance media during this research was in the normal range there were temperature 27,2-28,1°C, DO 3,70-3,91ppm, pH 3,70-3,91, and salinity 30-35 ppt.

Keywords : *Litopenaeus vannamei*, immunostimulant, *Bacillus polymyxa*, non spesific immunity

ABSTRAK

EFEKTIVITAS PEMBERIAN BAKTERI *Bacillus polymyxa* MELALUI PAKAN TERHADAP IMUNITAS NON SPESIFIK UDANG VANNAMEI (*Litopenaeus vannamei*)

Oleh

Muhammad Haris Kurniawan

Penambahan bakteri *Bacillus polymyxa* dalam pakan sebagai imunostimulan merupakan salah satu upaya pencegahan penyakit pada udang vannamei (*Litopenaeus vannamei*). Tujuan penelitian ini adalah untuk mengetahui efektivitas pemberian bakteri *Bacillus polymyxa* melalui pakan terhadap imunitas non spesifik udang vannamei. Penelitian ini terdiri dari 4 perlakuan yaitu pemberian pakan yang ditambah bakteri *Bacillus polymyxa* dengan kepadatan 0 sel/ml sebagai control (A), 10^4 sel/ml (B), 10^6 sel/ml (C) dan 10^8 sel/ml (D) dan setiap perlakuan diulang 3 kali. Penelitian dilakukan selama 15 hari. Parameter uji yang diamati adalah *total haemocyte count* (THC), aktivitas fagositosis, *differential haemocyte count* (DHC) dan kualitas air. Hasil penelitian menunjukkan bahwa penambahan bakteri *Bacillus polymyxa* sebanyak 10^6 sel/ml dapat meningkatkan THC sebesar $6,6 \times 10^7$ sel/ml pada hari ke-10. Nilai DHC berada dalam kisaran normal yaitu sel hyalin sebesar 52-89% dan pada sel granular sebesar 11-48%. Kualitas air media pemeliharaan selama penelitian berada pada kisaran normal yaitu suhu 27,2-28,1°C, DO 3,70-3,91ppm, pH 3,70-3,91, dan salinitas 30-35 ppt.

Kata kunci : *Litopenaeus vannamei*, imunostimulan, *Bacillus polymyxa*, imunitas non spesifik