

Effect of Bactocellon White Leg Shrimp (*Litopenaeusvannamei*) Growth Performance and the Shrimp Survival to *Vibrio paraheamolyticus*

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Abstract : Effect of probiotic Bactocell (*Pediococcus acidilactici*) as a supplementary diet was studied on post-larvae 12-15 of white leg shrimp (*Litopenaeus vannamei*) (150000 PL/0.5 h pond, average body weight=0.02 g) growth performance under farm condition for 102 days at water quality parameters consisting of temperature at 30.5-36°C, dissolved oxygen 4.1-6.6 mg/l, salinity 40-54 g/l, turbidity 35-110 cm, ammonia 0.1-0.8 mg/l and nitrite 0.1-0.9 mg/l. Also, the resistance level of the treated shrimps was assessed against a virulent strain of *Vibrio paraheamolyticus* as intramuscular injection route at 1.4×10^6 cells/shrimp. Significantly higher growth rate (11.3 ± 1.54 g) and lower feed conversion ratio (1.1) were obtained in shrimps fed diets supplemented with Bactocell at 350 g/ tone feed compared to other treatments of 250 g Bactocell/ton feed (10.8 ± 2 g, 1.3), 500 g Bactocell/ton feed (10.3 ± 1.7 g, 1.3) and untreated control (10.1 ± 2 g, 1.4). Also, thermal growth coefficient (0.057%) and protein efficiency ratio (2.13) were significantly improved in shrimps fed diets supplemented with Bactocell at 350 g/ton feed compare to other groups. Shrimps fed diet supplemented with Bactocell at 350 g/tone feed showed significantly higher protein content (72.56%) in their carcass composition than treatments of 250 g/ton feed (65.9%), 500 g/ton feed (67.5%) and control group (65.9%), while the carcass contents of moisture, lipid and ash in all shrimp groups were not significantly affected by different concentrations of Bactocell. No mortality occurred in the experimentally infected shrimps fed with Bactocell at 500 g/tone feed after 7 hours post-challenge with *V. parahemolyticus*. The mortality levels of 100%, 40%, 50% and 70% were obtained in shrimps fed with 0.0, 500 g/tone feed, 350 g/ton feed and 250 g/ton feed, respectively 14 hours post-infection. Also, the cumulative mortalities were achieved in 100%, 92% and 81% in shrimps fed with Bactocell at 500 g/ton feed, 250 g/ton feed and 350 g/ton feed, respectively.

Keywords : *litopenaeus vannamei*, *vibrio paraheamolyticus*, *pediococcus acidilactici*, growth performance, bactocell

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