Nursing of Black Tiger Shrimp (*Penaeus monodon* Fabricius, 1798) Larvae by Using Microorganisms to Improve Water Quality and Inhibit *Vibrio* spp.

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Abstract

Investigations on the effects of 3 groups of microorganism on the survival rate, growth, water quality and inhibiting *Vibrio* spp. of *Penaeus monodon* larvae from nauplius to postlarva-15 were conducted in 500 liter plastic tanks. Nauplii of *P. monodon* were stocked at 50,000 larvae per tank. There were 4 treatments: no microorganism supplement (control), Effective Microorganisms (EM), *Bacillus* spp. and Land Development microorganism formula 2 (LD2). After 24 days of experiment, the survival rate of shrimp in 4 treatments were 24.04, 14.90, 31.35 and 42.41 %, respectively. The survival rate of shrimp larvae in 3 treatments using microorganisms were not significant different (P>0.05) from those in control, but the survival rate of shrimp larvae in LD2 treatment was significant different (P<0.05) as compared with those in EM treatment. The growth (in term of weight and length) of shrimp larvae had no significant differences (P>0.05) among 4 treatments. All parameters of water quality including pH, alkalinity, DO, temperature, ammonia, nitrite, phosphate, hydrogen sulfide, BOD5, total plate count and *Vibrio* count were not significant different (P>0.05) among the treatments. Only LD2 treatment shrimp larvae could inhibit pathogens (*Vibrio* spp.). Microorganisms should be used in order to inhibit pathogens (*Vibrio* spp.) more than in order to improve water quality.

**Key words:** Nursing, Black tiger shrimp (*Penaeus monodon*), Microorganisms, EM, *Bacillus* spp., LD2 microorganism

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