

Wittaya Rattana 2006: Effect of Low Salinity and Ionic Composition of Water on Growth and Survival Rate of Pacific White Shrimp (*Litopenaeus vannamei* Boone). Master of Science (Aquaculture), Major Field: Aquaculture, Department of Aquaculture. Thesis Advisor: Associate Professor Yont Musik, Ph.D. 82 pages.
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Pacific white shrimp (*Litopenaeus vannamei* Boone) at the sizes of PL17, 0.60 g and 2.07 g can withstand low water salinity level of 0.2 ppt for 7 days with average survival rate of 93.3, 95.0 and 86.6 %, respectively. At water salinity level of 0.35 ppt high mortality rate of experimental shrimp were observed after molting. In 2 months experimental period, good growth of shrimp were observed at 0.5 and 1.0 ppt water salinity levels which were non significantly different from that of control shrimp raising in 15 ppt water, but survival rate of shrimp were significantly decreased to 61.7 and 66.7 % comparing to the survival rate of 93.3 % of control shrimp raising in 15 ppt water.

Low concentration of Ca^{+2} and SO_4^{-2} in water at the levels of 1.94 and 4.19 ppm did not have any effect on growth rate and survival rate of white shrimp, at 8 weeks experimental period, comparing to control shrimp raising in 3 ppt diluted seawater. The concentration of Ca^{+2} and SO_4^{-2} in 3 ppt diluted seawater were 33 and 209 ppm, respectively. Survival rate of shrimp raising in low Ca^{+2} water and low SO_4^{-2} water were 90.0 % which were non significant different from survival rate of control shrimp which was 98.3 %. Low concentration of Mg^{+2} in water at the level of 12.00 ppm result in the death of most of the experimental shrimp with average survival rate of 3.3-5.0 % in 2 months experimental period. Low concentration of K^{+} in water at the level of 7.94 ppm result in significant decrease of survival rate of experimental shrimp comparing with control shrimp raising in 3 ppt diluted seawater but did not have any significant effect on growth rate of shrimp in 2 months experimental period. Survival rate of shrimp raised in water with 7.94 ppm K^{+} was 53.3 % comparing to 98.3 % survival rate of control.

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Student's signature

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