

## **Effect of Simulated ocean acidification on chitin content in the shell of white shrimp, *Litopenaeus vannamei***

### **Abstract**

This study examined the effect of simulated ocean acidification on chitin content in the shell of marine white shrimp, *Litopenaeus vannamei*. The experiment was conducted in tanks where a change in carbonate chemistry characterizing the ocean acidification related to climate change was induced by supplying the exogenous carbon dioxide to the sea water. Even a short-term exposure to the treated water resulted in a significant loss ( $P < 0.05$ ) in the quantity of chitin in the shell. There are compelling reasons to believe that the acidosis caused in the acidification of the seawater causes acidosis inside the shrimp body and disturb the homeostasis. This could manifest in significant interference with the chitin synthetase and chitinolytic enzymes or hormones produced by the Y-organ. Further acidification of oceans could lead to seriously disturbed marine ecosystem, and decline in biodiversity and fisheries.