

Syahrul Ardiansyah, 2012. **Effect of Cadmium and Zinc in Different Salinities on Toxicity and osmoregulation of Vanamei Shrimp (*Litopenaeus vannamei*)**. Thesis was under guidance by Prof. Dr. Ir. Agoes Soegianto, DEA. and Dr. Bambang Irawan, M. Sc. Departement of Biology, Faculty of Science and Technology, Airlangga University, Surabaya.

ABSTRACT

Development of industry in Indonesia resulted in the increasing levels of pollution that occurred in the waters. One example is the heavy metal pollutants cadmium and zinc. The aim of this research was to analyze the toxicity of cadmium and zinc lethal concentration in different salinities and the effect of cadmium and zinc in different concentration and salinity on osmotic pressure of vanamei shrimp (*Litopenaeus vannamei*). The animal used in this research was the vanamei shrimp with length 8-10 cm and had been acclimated for three days. Vanamei shrimp exposed to different concentrations cadmium and zinc in different salinities for 96 hour. Osmoregulation test has done by taking the haemolymph of metal exposed and control shrimp. The result of the research show that LC₅₀ value of cadmium in salinity 5 ‰, 15 ‰, 30 ‰ are 0,45 ppm, 0,69 ppm, 1,62 ppm respectively. LC₅₀ value of zinc in salinity 5 ‰, 15 ‰, 30 ‰ are 4,10 ppm, 5,69 ppm, 10,75 ppm respectively. T test show that the significance different between osmotic pressure of the shrimp for cadmium treatment and control. According to the result, it can be concluded that cadmium affects the mortality of shrimp and shrimp hemolimfa osmotic pressure. While zinc affect shrimp mortality, but for the osmotic pressure of zinc metal treatment only affects in salinity 5 ‰, 15 ‰.

Keywords: cadmium, zinc, LC₅₀, osmoregulation, vanamei shrimp

