Hatchability dry cysts and morphological efects of newly hatching Nauplii of Artemia Salina (Linnaeus, 1758) after exposed to Tributyltin Chloride

ABSTRACT

In previous studies focused on a nauplii stage of Artemia sp as a model to acute toxicity tests to detection of antifouling as an active agent against fouling marine organisms as Tributyltin Chloride (TBTCl). This research aims to investigate the toxicities of (TBTCl) on hatching dry cysts and morphological changes on newly nauplii of Artemia salina. The range of TBTCl concentration was selected (5, 10, 15, 20, 25, 50, 75, 100, 150, 200 ngl-1). The results showes TBTCl significantly reduced hatching percentages of A. salina cysts from the (5 to 200 ngl-1). The 200 ngl-1 TBTCl concentration showed no indication of hatching percentages among A. salina cysts. comparing with percentages in the control were 97%. The median effective concentration EC50 of TBTCl was (46.48 ngl-1). The survivors nauplii were used to study the effect TBTCl on morphological malformation as total length and body width of newly nauplii. The higher rate of malformations of newly nauplii in 5 ngl-1 TBTCl concentration was 32.00 ± 4.62. Because in this concentration is a chance to newly nauplii survival to a longer period in toxic solution, which gives clearly deformities. While the lower deformities (%) were1.00 ± 0.00 at 75 ngl-1. Because the chance to survival newly nauplii is very weak and it was difficult to observed the deformities clearly. As for the other concentration of TBTCl the deformities (%) was between this means. Conclusion, finding indicated that when increasing TBTCl concentration affected the hatching rate and TBTCl can killa embryo of A. salina cysts in higher concentrations, while in low concentrations can effect on morphological changes (total length and body width) when exposure dry cysts to seawater contaminated with TBTCl.

Keyword: Artemia cyst; Acute-term mortality; Ecotoxicology; Hatching test; Tributyltin chloride