Nutrition Effects of the Adult *Artemia franciscana* Enriched with Cod Liver Oil and Vitamin C on growth, survival and resistance (Caused by Salinity and Temperature Fluctuation) in Cuttlefish (*Sepia pharaonis*) Larvae

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Abstract

This study was conducted to evaluate the effects of using Artemia fransiscana enriched with cod liver oil and vitamin C on growth, survival and stress resistance caused by salinity and temperature fluctuation of Sepia pharaonis larvae. 25 days after hatching the larvae of Sepia pharaonis were transferred into culture tanks with average length of 15.97±0.15 mm, 3.53±0.03 gr body weight in five treatments (each with 3 replicates). Experimental treatments including: Artemia fransiscana enriched with cod liver oil at different levels of C1= 5%, C2= 10% and C3=15% vitamin C, non-vitamin cod liver oil, and control (nonenriched artemia) group. In each replicate, the 20 larvae were introduced into tanks of 20 liters and 10 artemia /liter/ days to feed larvae were used. At the end of experiment, to investigate stress resistance, three groups of larvae were encountered at one hour stress with 5, 15, 25 ppt salinity, and 10, 25, 32 °C temperature levels. Results indicated that although the survival rate showed no significant difference between treatments (except control) but was higher in salinity 25 ppt and in 25 °C. Generally, results showed that feeding with vitamin C and unsaturated fatty acids elevated survival rate and growth factors in Sepia pharaonis larvae.

Keywords: Vitamin C, Unsaturated fatty acids, *Artemia fransiscana*, *Sepia pharaonis* larvae, enrichment