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

Mohammadreza Zahedi[1]
Amir Houshang Bahri[2*]
Maziar Yahyavi[3]
Flora Mohammadizadeh[4]
Mehran Yasemi[5]

1. Persian Gulf And Oman Sea Ecological Research Institute, Iranian Fisheries Science Research Institute, Agricultural Research Education and Extension Organization (AREEO), Bandar Abbas, Iran
2,3. Department of Fisheries, Bandar Abbas Branch, Islamic Azad University, Bandar Abbas, Iran
4. Young Researchers and Elite Club, Bandar Abbas Branch, Islamic Azad University, Bandar Abbas, Iran
5. Associate of Applied Sciences Institute of Agricultural Jihad Organization of Research, Education and Extension (AREEO), Tehran, Iran

***Corresponding Author:**
amirbahri52@yahoo.com

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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 (non-enriched 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