

Simultaneous effect of salinity and temprature on morphometric characters of two populations of *Artemia urmiana* and *Artemia parthenogenetica* from Urmia Lake

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Abstract

The diversity among *Artemia* species proves the importance of morphologic and morphometric investigations. Morphologic studies not only help in identification of close species, but also help to study the effects of environmental factors on the species and to identify the most influencing parameters on the morphologic changes. In this research investigated we investigated the simultaneous effect of salinity and temperature on morphologic changes in two populations of *Artemia urmiana* and *Artemia parthenogenetica*. The hatching of the cysts, feeding of nauplii and their culture were performed according to standard conditions. The *Artemia* from both populations were cultured under sailities 60, 120 and 180 g/L at 15, 24 and 30°C for a period of 30 days. Later the morpholpgic characteristics of adult *Artemia* were measured using a steriomicroscope equipped with drwing tube and digitizer. During this research over all 15 morphologic indices were measured at nine combinations of salinity and temperature. The results of analysis of variance showed that the average of measured parameters in both populations were higher at 24-60 treatment. Dendrogram of the cluster analysis based on morphologic characteristics seprated the two populations. In general *Artemia urmiana* and *Artemia parthenogenetica* demonstrated more regular groupings based on temperature and salinity respectively. Based on the discriminant analysis the width of uterus, maximum distance between two compound eyes, length of telson, total body length, distance of 3rd segment to end of abdomen, width of head, length of left antenna, length of right antenna, width of 3rd abdominal segment, maximum diameter of left eye, number of setae on left furca, number of setae on right furca, maximum diameter of right eye, length of furca and length of abdomen respectively showed increasing effect on separating the two population.

Keywords: Salinity, Temperature, Morphology, *Artemia*.