

A Comparative Study on the Effect of Different Salinities on the Survival, Growth, Life Span and Morphometric Characteristics Cyst of Two Parthenogenetic Species of *Artemia* (Gaav Khooni Wetlands of Isfahan, Ponds Around Lake Urmia) from Iran

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ABSTRACT

The identification of environmental conditions inducing different ecophysiological responses in the different strains and populations of the brine shrimp (*Artemia*) should improve the understanding of their biogeographic distribution. In the present study, Nauplii from two Iranian brine shrimp parthenogenetic population, *Artemia* Gaav Khooni from wetlands of Isfahan and *Artemia* from ponds around lake Urmia, were grown up at three salinities (80, 120 and 150 ppt). The initial stocking density was 200 nauplii/litre in all the salinities tested. Shrimps were feeding, according to standard feeding table. On days 8th, 11th, 14th, 17th, 20th and 23th, the number of remaining than the first day of culture, percentage survival was calculated at different salinities. The growth rate of shrimps also on days 8th, 11th, 14th, 17th, 20th and 23th of culture, by a microscope equipped with ocular micrometer and measured results were compared statistically. Salinity was proved to have significant impact on majority of the life span characters studied in this survey. The results shown, *Artemia* Gaav Khooni showed higher survival rates than brine shrimp of Urmia ponds (except in salinity 80 ppt). Also the best results shown for the life span factors in all three salinities was observed in brine shrimp of Gaav Khooni wetlands (especially in wetland natural salinity 120 ppt). But the best results for the growth factor in all three salinities was observed in brine shrimp of Urmia ponds. Too *Artemia* ponds around lake Urmia, from majority on the morphometric characteristics cyst larger size than *Artemia* Gaav Khooni. Therefore, from the present study it could be confirmed that *Artemia* Gaav Khooni unlike most species than the decrease in salinity (optimal level) is also vulnerable.

Key words: *Artemia*, Gaav Khooni, survival, growth, morphometric characteristics cyst

INTRODUCTION

Artemia is a unique cosmopolitan anostracan living in hypersaline and saline lake, ponds, lagoons and man-made salterns. It is characterized by communities with low species diversity and simple trophic structures compared to fresh and marine water environments (Persoone and Sorgeloos, 1980; Lenz, 1987). *Artemia* is very well adapted to the severe physiological demands imposed by these ecosystems. Covered by a nearly impenetrable exoskeleton and able to pump out