Spatial and temporal of Chironomidae larvae fauna in Sardabroud estuary (south Caspian Sea)

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Abstract

The Chironomidae larvae species composition closely reflects the aquatic environment in which they live, they are good indicators of water pollution, climate change and water sources classification. In order to study of biodiversity and distribution of the chironomid larval and their relationship with environmental factors in Sardabroud estuary of Chalus (south Caspian Sea basin), bimonthly Samples were taken from November 2014 to September 2015, in three stations (S_1 in the river environment, S_2 in estuary environment and S_3 in the marine environment), using Van Veen grab (0.03 m^2) and Surber (0.1 m^2, 0.2 mm-mesh size) with three replicates. The present study, three subfamilies were identified, including Chironominae (5 genera), Orthocladinae (3 genera) and Tanypodinae (1 genera). 9 genera are reported from the river and estuary of Sardabroud for the first time. Among identified genera, the highest average density was related to *Polypedilum* (282±122 ind. m^{-2}) and the lowest for *Paratendipes* (72.2±30 ind. m^{-2}). Among sampling stations, river station (S1) showed higher density (200.4±84 ind. m^{-2}) than estuary station (S2) (96.2±35.6 ind. m^{-2}) and marine station (S3) (0±0 ind. m^{-2}) which were significantly different ($p<0.05$). According to the results, the highest and lowest density of chironomid larval were in January (378.5±166.5 ind. m^{-2}) and in July (37.6±15.3 ind. m^{-2}) respectively which were significantly different ($p<0.05$).

Keywords: identification, density, distribution, Chironomidae, Sardabroud estuary, Caspian Sea.