



Effect of pH upon Copepoda and Cladocera under Laboratory Conditions

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Abstract: The increased CO₂ diffused from the atmosphere into water body surface, result in increased partial pressure of CO₂ and reduced pH. Laboratory experiments revealed that water acidification has negative impacts on the fertilization, cleavage, larva settlement and reproductive stages to environmental change within zooplanktons. There appear to be significant ontogenetic impacts and species-species differences in tolerance to the low pH. The effect of high pH on the reproduction revealed that the mortality of Juveniles and adults did not increase with increasing pH in the range 9.0-10.5 and suggest that the threshold value for mortality is between pH 10.5 and 11.5. However, both mortality and the proportion of stillborn neonates increased at pH 10.0 and above and both Copepoda (*Daphnia carinata*) and Cladocera (*Mesocyclops hyalinus*) differed in their sensitivities to pH. Consequently, pH affects population growth rate markedly from pH 10.0 onward. Because pH value ≥ 10.0 are common during spring and summer in local water bodies due to intense photosynthesis activity, indicating that high pH has larger effect on population structure and the community composition of zooplankton in such water bodies.

Key Words: pH, Zooplankton, Nauplius, Stillborn, Buffer, *Daphnia carinata*, *Mesocyclops hyalinus*
