

# Effects of Cu<sup>2+</sup> and pH on the fitness of *Ceriodaphnia dubia* (Richard 1894) (Crustacea, Cladocera) in microcosm experiments

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An important disturbance of anthropogenic origin frequently occurring in freshwater ecosystems is a rise in the concentration of heavy metals in solution, among which copper stands out due to its known toxicity. However, the study of the chemical behavior of copper in solution is highly dependent on pH. In this study, the effect of ionic copper on the fitness of *Ceriodaphnia dubia* was assessed in microcosm experiments under different conditions of Cu<sup>2+</sup> and pH. Two groups of experiments were conducted: effects on survival and fecundity, and effects on population dynamics. In the former, both pH and copper concentrations were manipulated. On the other hand, only the concentration of biologically available ionic copper was manipulated whereas pH was maintained constant in the population dynamics experiments. There was an agreement between both sets of experiments in terms of their results, showing important toxic effects of copper as evidenced through significant differences between contr