

## Copper Sulphate Effect on Cyprinus Carpio Common Fish Parasites

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**Abstract :** Cyprinus Carpio adult specimens were captured from a single spot location from the Danube River and transported to the Laboratory of Faculty of Biology, University of Bucharest. The specimens were measured, weighed and randomly divided in five groups for later Copper Sulphate (CuSO<sub>4</sub>) exposure, as well as one control group. From the control group, 3 specimens were immediately sacrificed and microscopically inspected for parasite's presence in the gills. During the histological inspection of the control group specimens, Ichthyophthirius multifiliis, Gyrodactylu ssp., Myxobolus Oviformis, and Trichodinacottidarum were abundantly identified in the gills. The exposure to a single dose of CuSO<sub>4</sub> per group took place for 7 days under controlled conditions: water alkalinity ≈ 100 mg/L, temperature 23-24 °C, oxygenation 7.40-7.80 mg/L, and pH 6.10-6.40, the parameters were monitored on an hourly basis and adjusted when needed. After the exposure, all specimens were sacrificed, and the gill tissues were inspected. It was found that concentrations of 0.10, 0.25 and 0.30 ppm of CuSO<sub>4</sub> did not affect the presence of parasites, as for 0.40 ppm of CuSO<sub>4</sub> it significantly affected only Ichthyophthirius multifiliis and Myxobolus Oviformis, while concentration 0.50 ppm of CuSO<sub>4</sub> (≈0.20 ppm of Cu<sup>2+</sup>) eliminated all 4 parasites species previously present in the fish gills, also, there were some histopathological changes to the gills tissue. These findings suggest that low concentrations of CuSO<sub>4</sub> treatment for fish parasites are a safe and economical option if used correctly for a brief length of time.

**Keywords :** copper sulphate, cyprinus carpio, parasites, danube river

**Conference Title :** ICSBCB 2022 : International Conference on Systems Biology and Computational Biology

**Conference Location :** Berlin, Germany

**Conference Dates :** July 21-22, 2022