

BIOCHEMICAL PARAMETERS OF THE
ZOOPLANKTON FROM PAMPULHA
RESERVOIR: COMPARISON OF METHODS
FOR PROTEIN DETERMINATION.

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There is a lack of studies concerning the biochemical aspects of zooplankton in tropical regions. Carbohydrate, protein, lipid and chitin contents of zooplankton can help us to understand and even quantify important processes related to the dynamics of these organisms. Starving periods or diurnal variation of feeding, for example, can be assessed using this approach.

The objective of this investigation was to adapt and test current biochemical methodologies of protein determination, already used with relative success in temperate regions, to tropical zooplankton also considering limitations of our laboratories.

Zooplankton was collected in Pampulha Reservoir using vertical net hauls (90 μm mesh size). Organisms were gently transferred to a thermos flask and transported to the laboratory within no more than 30 minutes. Afterwards, the organisms larger than 160 μm were transferred to plastic Petri dishes, deep frozen (-20°C) and freeze dried. Aliquots (500-2000 μg of dry weight) were sorted under a dissecting microscope and their weight were determined gravimetrically using a Mettler balance (0.000001 g).

Three methods of protein determination were compared: a) the Bradford method (Bradford, 1976), b) the micro-biuret method (Itzhaki & Gill, 1964) and c) the total-nitrogen method (Koroleff, 1972). The mean values produced by each method were:

Method	Protein content (% of dry weight)
BRADFORD	18.5 \pm 3.7 (n=6)
BIURET	30.5 \pm 9.2 (n=6)
N-TOTAL	39.3 \pm 9.0 (n=7)

The comparison between these results and the literature show that the micro-biuret method is the one that best fits the criteria required for a good method of protein quantification for zooplankton: it is easy to perform, has a high detectability and is reliable enough.

REFERENCES

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