Vitor Vasconcelos

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(**SHORT CV**)

Vitor Vasconcelos was born in Guimarães, Portugal and studied Biology at the University of Porto where he received his PhD in Biology in 1995 after international training at the University of Helsinki, Finland and at Wright State University in Dayton, USA. In 2005 he was appointed as full Professor at the University of Porto, Faculty of Sciences. In 2013, he was elected Director of the Interdisciplinary Centre of Marine and Environmental Research - CIIMAR in Matosinhos, Portugal and still holds this position. His research interests lie in the study of the diversity and bioactivity of natural compounds produced by cyanobacteria, in special toxins and other metabolites. He is a member of several Editorial Boards of international journals such as Marine Drugs, Cryptogamie-Algologie, Frontiers Microbiology and he is the Section Editor-in Chief of Toxins. He also serves on various Advisory and Scientific Boards including the Scientific Council of the Portuguese Science Foundation and the Scientific Council of the National Museum of Natural History of Paris, France.

He was the recipient of the Scientific Excellence Award of the University of Porto in 2021 and of the Biotech Medical Research Award of the Porto Polytechnic School in 2018.

Title of the Lecture:

Microcystins transfer to agricultural products and use of satellite imagery to monitor cyanobacteria blooms.

Abstract

Keywords: cyanobacteria blooms, microcystins, toxin transfer, satellite imagery, risk analysis

Cyanobacterial harmful blooms (CyanoHABs) threaten public health and aquatic ecosystems worldwide with severe impacts in the water quality and their uses. The most common and problematic cyanotoxins – microcystins- may not just affect aquatic organisms but also agricultural plants and livestock that become in contact with them. We used Landsat imagery to map cyanobacteria blooms in Lalla Takerskoust, en eutrophic reservoir near Marrakesh, Morocco, molecular analysis and HPLC to map cyanobacteria and microcystins, namely the variants MC-RR, MC-YR, and MC-LR. This study revealed patterns and trends in cyanobacterial proliferation in the reservoir over 30 years and we presented a historical map of the area of cyanobacterial infestation using the Normalized Difference Vegetation Index (NDVI) method. MC-LR accumulates near the

water surface due to the buoyancy of Microcystis and the MC distribution varied with depth, with MC-LR dominating at the water surface and MC-YR at the reservoir outlet at a water depth of 10 m. Our findings highlight the impact of nutrient concentrations, environmental factors, and transfer processes on bloom dynamics and MC distribution. We emphasize the need for effective management strategies to minimize toxin transfer and ensure public health and safety.