

Journal of Toxicology and Environmental Health, Part A: Current Issues

[Volume 76](#), [Issue 4-5](#), 2013

Special Issue: Current Research Issues in Occupational and Environmental Exposure in Portugal and Europe, Part 2



Cyanobacteria toxicity: potential public health impact in South Portugal populations

DOI: 10.1080/15287394.2013.757204

[Fernando Bellém](#)^{a*}, [Susana Nunes](#)^b & [Manuela Morais](#)^b

pages 263-271

[Publishing models and article dates explained](#)

Version of record first published: 20 Mar 2013

Article Views: 29

Abstract

Cyanobacteria are prokaryotic, plantlike organisms present in lakes, recreational waters, and reservoirs, and often dominate phytoplankton communities in warm, nutrient-enriched hard waters. A stable water column rich in certain nutrients, especially nitrogen and phosphorus, is associated with favorable environmental conditions that support development of cyanobacterial population maxima or “blooms.” Under specific conditions, cyanobacteria produce toxins that are responsible for acute poisoning and death of animals and humans. The main aim of this study was to correlate the presence of cyanobacteria blooms with potential toxicity to humans as a public health issue. In Portugal, seven reservoirs located in the southern region were selected and studied between 2000 and 2008. Reservoirs were characterized by physical and chemical aspects, and identification of phytoplankton communities. In the

case of cyanobacterial blooms, toxins that affected the liver, nervous system, and skin were detected, namely, *Microcystis aeruginosa*, *Aphanizomenon* spp., and *Oscillatoria*. These findings suggest the presence of a potential risk for public health, and indicate the need to implement mitigation measures in all studied reservoirs. These measures may involve (1) water eutrophication control to avoid blooms, (2) appropriate treatment of water for human consumption, and (3) public warnings or information to those individuals that use these reservoirs for several recreational activities.

Details

- **Citation information:** [PubMed](#)
- **Version of record first published:** 20 Mar 2013



Author affiliations

- ^a Escola Superior de Tecnologia da Saúde de Lisboa, Lisbon, Portugal
- ^b Laboratório da Água da Universidade de Évora, Évora, Portugal