

Possible Allelopathic Effects of Cyanotoxins, with Reference to Microcystin-LR, in Aquatic Ecosystems

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ABSTRACT: During recent years a shift from macrophyte-dominated to more phytoplankton-dominated lakes has been correlated to the process of eutrophication. The existence of numerous substances exhibiting allelopathic effects on the growth of algae has been shown in different aquatic macrophytes (e.g., *Myriophyllum spicatum*) and is thought to be an important mechanism in stabilizing the macrophyte-dominated clear-water state of a lake. A few recent studies have shown that algae themselves can produce special substances inhibiting growth or photosynthetic processes in other algae. A well-known cyanobacterial secondary metabolite, microcystin-LR, was tested for its allelopathic power on aquatic macrophytes such as *Ceratophyllum demersum* and *Myriophyllum spicatum*, resulting in growth inhibition, reduction in photosynthetic oxygen production, and changes in pigment pattern. This shows that microcystin-LR has a possible role as an allelopathic infochemical. © 2002 Wiley Periodicals, Inc. *Environ Toxicol* 17: 407–413, 2002; Published online in Wiley InterScience (www.interscience.wiley.com). DOI 10.1002/tox.10071

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