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CONTROL MEASURES FOR *Cyanobacteria* AND *Cyanotoxins* IN DRINKING WATER

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Abstract

Algal bloom can represent a serious consequence of the eutrophication of surface water. Some of these algae, called cyanobacteria, are of particular interest for their effect on human health due to their capacity to produce cyanotoxins. In many countries, in fact, there are important problems of poisoning attributed to toxic cyanobacteria and contamination of water sources (specially lakes) resulting in increased cyanobacterial growth. *Cyanobacteria* can become particularly harmful for humans when water is used for drinking consumption; in fact, they can generate many problems in drinking water treatment plants (increase of solids load, bacterial growth in sand and GAC filters, low efficiency of disinfection) and in the distribution system (growth in reservoir tanks and pipes). Moreover, algal toxins produced by cyanobacteria can be released during water treatment and can persist in water until final consumption. For these reasons, appropriate technologies should be used for water treatment in order to efficiently remove cyanobacteria cells, to reduce the risk of cyanotoxins release and to efficiently remove dissolved toxins. In this work, an overview on the main conventional and advanced processes for *Cyanobacteria* and *Cyanotoxins* removal from drinking water will be presented. Moreover, the main results of an experimental research on the removal of *Cyanobacteria* cells (coagulation/flocculation, sand filtration, GAC filtration, chlorine oxidation) and of cyanotoxins (activated carbon) will be discussed.

Key words: *Cyanobacteria*, *Cyanotoxin*, drinking water, microcystin-LR

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