



Removal of cyanobacteria by an *Aeromonas* sp.

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ABSTRACT

In the present study, the biocontrol of harmful algae by an algicidal bacterium *Aeromonas* sp. strain FM was examined. The threshold concentration of FM for its algicidal activity against the exponentially growing *Microcystis aeruginosa* was 2.1×10^8 cfu mL⁻¹. The influence of temperature on algae removal was tested, and the result indicated that the summer temperature 30°C favored the algicidal activity of the bacterium strain when compared to 20°C, the representative temperature of spring or autumn. A strong algicidal effect of strain FM was observed against *M. aeruginosa*, *M. flos-aquae*, *Anabaena cylindrica*, *A. flos-aquae*, and *Nodularia spumigena*. Based on these tests, the removal of *M. aeruginosa* treated by *Aeromonas* sp. strain FM harboring in Aquamats was carried out. After 7d treatment, *M. aeruginosa* at 7.5×10^5 cells mL⁻¹ with a total volume of 10 L decreased 85% of its biomass, following with a decay of the inoculated algicidal strain FM. The electron microscope images demonstrated that the strain severely damaged the cell wall of *M. aeruginosa*. The results of the present study indicated the application potential of the biocontrol of harmful algae by algicidal bacteria.

Keywords: Biocontrol; Harmful algae; Cyanobacteria; Algicidal bacteria; *Aeromonas*

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