**Occurrence of heterotrophic bacteria causing lysis of *M. aeruginosa* in Beira Lake, Sri Lanka**

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**Abstract**

Field and the laboratory studies were carried out to ascertain the potential impact of algicidal bacteria on *Microcyctis aeruginosa* from June 2005 to March 2007 in Beira Lake, Sri Lanka. M. *aeruginosa,* and *M. wesenbergii* quantitatively dominated in most sampling dates and constituted>75% of the phytoplankton cell densities when the bloom reached to its peaks. Densities of algicidal bacteria were relatively high with large fluctuations between 2.3x102 PFU ml-1 to 0.3x102 PFU ml-1. Three algicidal bacteria species were isolated from the lake and identified as *Alcaligenes denitrificans, A. xyosoxydans*, and *Flavobacterium marinotypicum*. The algicidal effect of the bacterium was studied and the results suggest that the bacteria did not release extracellular products inhibitory to *M*. aeruginosa, and that the bacteria killed the algae by direct contact. In the field, rapid decline of *Microcystis* bloom was detected when algicidal bacteria were increased. In the laboratory, when the bacterium were inoculated at low densities (104 cells ml-1) together with *Microcystis,* the bacteriumproliferated to 107 cells ml-1 and caused Microcystis cell lysis. Thus, the result of the present study strongly suggests that algicidal bacteria degrade M. *aeruginosa* bloom in natural freshwater environments.

Key words: M. *aeruginosa,* algicidal effect, *Alcaligenes denitrificans, A. xyosoxydans*, and *Flavobacterium marinotypicum*