

Water Sci Technol. 2002;46(6-7):207-15.

**A novel strategy for cyanobacterial bloom control by ultrasonic irradiation.
Lee TJ, Nakano K, Matsumura M.**

Institute of Applied Biochemistry, University of Tsukuba, Ibaraki, Japan. The application of ultrasonic irradiation to control cyanobacterial blooms was evaluated in actual eutrophic lake water. Ten prototype units of the Ultrasonic Irradiation System (USIS) were installed in the 32 ha Lake Senba, and the water and sediment quality were monitored for 2 years.

By incorporating the ultrasonication process with the on-going strategy, particularly flushing with induction water, cyanobacterial blooms can be controlled effectively. In addition, a significant improvement in the conditions of the lake in terms of chlorophyll-a, COD and T-P was attained. Moreover, the feasibility of ultrasonic irradiation and bacterial assisted control of cyanobacterial blooms was also evaluated in laboratory conditions. The destruction of gas vacuoles brought about by ultrasonic irradiation promoted close contact between cyanobacteria and their lysing Myxobacter leading to immediate and accelerated destruction of the cells.