

Environmentally friendly methods for controlling algae in lakes and reservoirs

May 28 2014



The growth of blue-green algae in our lakes, large ponds, water reservoirs and public waters constitutes a problem for our environment and for our health. These types of algae often result in a deterioration of the water quality and emit a distinctly unpleasant odour. The algae consume a lot of oxygen in the water, leaving little for other animals like fish. They also produce toxins which can cause skin irritations and are suspected to be involved in the occurrence of liver cancer.

Traditional [algae](#) controlling methods (e.g. aeration, chemical or biological additives, and others) are not sufficiently effective when it comes to larger waters. They may also be associated with high labour costs and potentially negative environmental impacts, especially when

chemicals are used. In order to address these problems, the EU-funded CLEARWATERMPC project has successfully developed and commercialised an environmentally-friendly technology. Known as the MPC-Buoy, the CLEARWATER solution uses ultrasound technology to prevent the growth of blue-[green algae](#).

The MPC-Buoy is equipped with three ultrasonic transmitters with a reach of at least a 500 metre diameter. Underneath the buoy, sensors also monitor the [water quality](#) in real-time. The sensors communicate the information to a web server.

As part of the project research, two MPC-Buoys were installed in the Skrzyneckie Male lake in Poznan, Poland. The buoys provided a complete overview of the water quality by collecting the following parameters every 10 minutes: Chlorophyll (green algae), Phycocyanin (blue-green algae), pH, TSS, dissolved Oxygen and the temperature.

The project showed that the ultrasound treatment needs to be adjusted according to the type of algae and other parameters in the water, to perform at its highest efficiency.

Monitoring also showed a difference in the algae levels between the lake with the installed MPC-Buoys and several similar other lakes in the surrounding area. For example, the level of cyanobacteria (blue-green algae) cells in the Kórnickie Lake, which is located in the same area as Skrzyneckie Male Lake, was nine times higher compared to the lake in which the MPC-Buoys were installed.

Local inhabitants also noticed visual improvement in water quality. The CLEARWATER project team reports that locals have said that the water in the lake has become cleaner and no algae scum occurred after the deployment of the two MPC-Buoys.

Although ultrasound was already a well-known and proven technology for the treatment of algae, the CLEARWATER buoy is said to be unique for several reasons. In contrast to the currently available ultrasound based systems, the MPC-Buoy is more cost-effective due to its low operation and installation costs. It also has an implemented online [lake](#) monitoring system and the possibility for remote control of specific control parameters. Additionally, the system is independent of power supply from the shore, since efficient solar panels are used to provide power all year round in any country.

More information: clearwater-pmpc.com/

Provided by CORDIS

Citation: Environmentally friendly methods for controlling algae in lakes and reservoirs (2014, May 28) retrieved 18 April 2024 from <https://phys.org/news/2014-05-environmentally-friendly-methods-algae-lakes.html>

This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.