



water & sanitation

Department:
Water and Sanitation
REPUBLIC OF SOUTH AFRICA

INTERNET ARTICLE

South African water-related doctoral student helps track toxic algae

10 November 2014

Toxic algae in water are now a thing of the past as a result of the efforts of a compatriot.

A South African water-related doctoral candidate who is a researcher on the project, Lesedi Lebogang and a team from Lund University, have come up with a super algae detector, tracking water toxins.

In layman's terms, the detector works by picking up tiny biochemical indicators which are amplified and converted into electric impulses which can be measured.

By adding antibody chemicals that track toxins in cyanobacteria, Lebogang was able to further develop the sensor that detects algae when the bacteria burst. When the bacteria burst, reactive antibodies respond and as they are released they cause the sensor to react.

Lebogang explains, "The most challenging part of the research was adapting the analytical system to a real life situation."

Lund University in Sweden has developed a "super detector" that can track traces from a teaspoon of sugar in the Baltic Sea. The technology has also been adapted for use as a potentially life-saving technique that can detect toxic algae blooms in drinking water.

The Lund University professors have developed a biosensor that can find elements at extremely low concentrations – 10 000 times lower than what was previously possible. Lebogang has found that the method could be especially useful in hot countries such as those in Africa, Australia and the southern United States.

As a result of agricultural runoff and global warming rates of toxic algal blooms or cyanobacteria are on the rise. Detection at an early stage may be able to prevent loss of life and make drinking water improvement plans and river clean-ups more efficient. A portable, cost effective and easy to use device is all that is needed for the technique.

Developed by biotechnology researchers Bo Mattiasson and Martin Hedström at Lund University, the detector device is being investigated for another purpose: the early detection of HIV infection.

Ike Motsapi

Issued by the Department of Water and Sanitation (DWS)

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