Novel testing device for detecting toxic blue-green algae

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VTT Technical Research Centre of Finland has developed a fast and affordable testing device for detecting the presence of toxic blue-green algae in water. There is currently no fast, affordable and user-friendly way for consumers to check water quality themselves.

The blue-green algae testing kit developed by VTT and the University of Helsinki is like a miniature laboratory. The device is the size of a thermometer, and it contains antibodies that react to any toxic bacteria found in a water sample. The test reveals in minutes whether the water sample contains toxic blue-green algae.

Thanks to the new testing device, consumers will soon be able to check themselves whether water is safe for swimming. At the moment, information on blue-green algal blooms in water is mostly based on visual inspections. However, visual inspections alone are not capable of determining whether an algal bloom is toxic. Until now, the toxicity of algae has generally had to be tested in a laboratory. For example, only approximately half of blue-green algal blooms in lakes are toxic and harmful to humans and animals. The new testing kit provides a fast and reliable means of determining whether a blue-green algal bloom is toxic.

Blue-green algae, also known as cyanobacteria, favour eutrophic and warm water. Cyanobacteria can be found in almost every terrestrial and aquatic habitat - oceans, fresh water, damp soil, temporarily moistened rocks in deserts, and even Antarctic rocks. Every year, they form extensive blooms e.g. in the Baltic Sea and other waters. The prevalence

of algae each summer depends on factors such as weather and water nutrient levels. The first blue-green algal blooms begin to form when the surface of sea water reaches 15 degrees.

The testing kit for detecting toxic blue-green algae is in the process of being commercialised. The kits could be on sale within 2–3 years.

Provided by VTT Technical Research Centre of Finland