

Exposure of rural households to toxic cyanobacteria in container-stored water

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Abstract

Cyanobacteria are potent producers of cyanotoxins that may present a health risk to people. This is especially important in rural areas where people use untreated surface water, containing cyanobacteria, for household purposes including cooking and drinking. Water is collected from these sources mainly in plastic containers, transported home and stored during use. This study investigated the occurrence of cyanobacteria and their associated toxins in these containers as well as in the associated surface water sources. The results suggest that cyanobacteria are transferred from the water sources to the containers and then survive and possibly grow in biofilm forming inside the vessels. Their associated cyanotoxins were not found in any health-significant quantities in containers. However, the occurrence of cyanobacteria in the water used by the households collected in containers clearly indicates that it can be an important route of exposure especially if toxic cyanobacteria are present in the source water. In several cases a risk of cyano-intoxication might exist unless the households undertake preventative measures.

Keywords: cyanobacteria, cyanotoxin, microcystin, surface water sources, drinking water containers, biofilm