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Research on Water Quality Exposes Increased Levels of Trihalomethanes Due to Excessive Use of Triclosan in Response to COVID-19

Abstract

In 2021, the Ohio Environmental Protection Agency (EPA) found that 2.4% of homes in Ohio lacked access to hot and cold running water or a bath/shower, with Appalachian counties being the most affected. Southeast Ohio has struggled to meet federal water quality standards due to aging infrastructure and limited resources. Toledo, Ohio, faced harmful algal blooms in Lake Erie in 2021, leading to a temporary shutdown of the city's water supply. These blooms can produce toxins that contaminate drinking water and, when combined with triclosan (TCS), can create more potent trichloromethane. TCS, an antimicrobial agent, has been detected in human plasma, breast milk, and urine due to its widespread use. Overexposure to TCS and other organochlorine pollutants has been linked to chronic inflammation and various health issues, including cardiovascular disease and cancer. . To evaluate the impacts of the COVID-19 pandemic, we conducted a thorough systematic review of the literature to identify primary studies focused on water quality and the concentrations of organochlorine contaminants. We gathered all secondary data related to total trihalomethane (TTHM) concentrations from annual water safety reports, including the SDWIS/FED, MWR, and CCR, from major metropolitan water plants in Ohio. The quality and safety of drinking water is monitored by the Department of Environmental Management (DEM). They ensure compliance with the Safe Drinking Water Act through regular monitoring, reporting, and inspections of metro water systems in the state. The Ohio EPA monitors water quality and safety, ensuring compliance with the Safe Drinking Water Act through regular inspections. Elevated total trihalomethane (TTHM) levels, particularly chloroform, have been recorded in Ohio's water supply, correlating with the increased use of TCS.

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