

Is your drinking water safe?

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Lake Bloomington is a major source of drinking water for residents of Bloomington, IL, and has a history of nitrate concentrations that exceed safe levels. Because Lake Bloomington has a record of elevated nitrate levels, local residents are concerned over their drinking water quality.

Kenneth Smiciklas, Associate Professor of Agronomy, Illinois State University, along with a team of colleagues, present an article about the nitrate levels in Central Illinois in the 2008 *Journal of Natural Resources and Life Sciences Education*.

According to Smiciklas, "Drinking water contaminated with nitrate concentrations exceeding the maximum contaminant level established by the USEPA can cause health effects in humans and animals."

Nitrate-nitrogen is a form of nitrogen that is naturally occurring in most soils. Nitrogen fertilizers added to the soil for crop production can also add to the soil nitrate concentration. If these amounts become extreme, drinking water quality can be affected.

More than 90% of the area in the Lake Bloomington watershed is used for agriculture. The application of nitrate fertilizers (both synthetic and organic) in the growing food crops can result in relatively high levels of nitrate in the surrounding waters. Non-agricultural sources of nitrate can include natural mineralization occurring primarily in the spring due to organic matter breakdown and also from septic emissions.

The main objectives of this study were to measure the sources of nitrate

entering Lake Bloomington and to document the practices of producers within the lake area. "We hope the information from our study will help form recommendations on how to manage nitrogen fertilizers in sensitive watershed areas," concludes Smiciklas.

Source: American Society of Agronomy

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