

ABSTRACT

THE RELIABILITY OF TEST STRIPS AS COMPARED TO ANALYTICAL LABORATORY TESTS FOR MEASURING NITRATE CONCENTRATIONS IN STATE SMALL PUBLIC WATER SYSTEMS IN TULARE COUNTY, CALIFORNIA

Tulare County is experiencing increasing concentrations of nitrate in its groundwater. Because state small public water systems are not routinely monitored for nitrate levels, the high concentrations pose health risks. If inexpensive monitoring such as use of commercially available test strips were reliable, dangerously high concentrations could be detected and measures taken to mitigate the health risks.

Thirty-nine state small public water system sources were sampled using Hach, LaMotte, and Waterworks brand nitrate test strips. Hach nitrate test strips produced reliable results 84.6% of the time as compared to analytical laboratory tests. Waterworks test strips were reliable 82.0% of the time. LaMotte test strips were considered unreliable, with an accuracy rate of 74.3%. This study shows the possibility of using nitrate test strips as a screening tool to monitor the level of nitrate in drinking water.

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