



## **USDA-CSREES 2007 National Water Quality Conference**

### [Assessing well drinking water quality of underserved rural farms](#)

Water quality education among rural underserved communities is almost non-existent and is needed to identify and rectify potential health problems, as well as, educate individuals and communities on ways to identify, and avoid contaminated water supplies. Many small farms and rural communities obtain their drinking water from dug wells or springs without adequate protective measures. The potential for contamination of these water resources is high, since both are directly exposed to nutrient and pollutant runoff and leaching. For many persons living in these areas, literacy levels are low according to data collected in this study, and an understanding of chemical and fertilizer use and proper storage is inadequate as well. In some areas, outdoor toilets and septic tanks are located near drinking water sources. Our main objective for this project was to quantify the levels of selected anions, cations, and trace elements (e.g., nitrate, phosphorus, chlorine, fluoride, iron, lead, arsenic, sulfate, copper, zinc) in well drinking water in selected counties in Maryland. Other assessments to define the level of total dissolved solids, electrical conductivity, pH, total and fecal coliforms, and hardness index were also performed. The targeted group for this research was farms and families who rely on wells as their primary source of drinking water and lived in rural neighborhoods. Questionnaires were also developed and data ascertained on pertinent information associated with drinking water source, knowledge of well installation, and well placement among other parameters. Chemical biological and chemical analysis of water samples indicate that in some cases, nitrate levels exceeded the 10 ppm ceiling for drinking purposes set by EPA; E. coli was found in a few samples at levels which exceeded EPA recommended levels, iron contents was high in almost all samples and coliforms were also found in a small percentage of samples analyzed.

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