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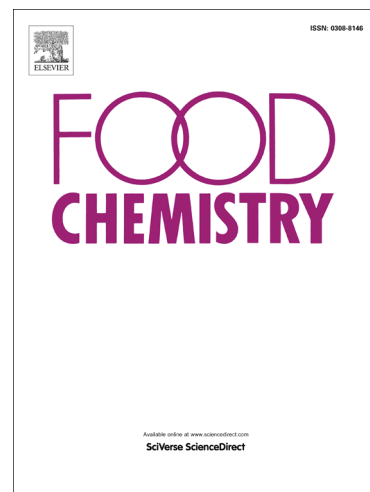
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## Inorganic and organic contaminants in drinking water stored in polyethylene cisterns

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### ABSTRACT

This work evaluated the presence of contaminants in stored rainwater in 36 polyethylene tanks installed in two rural communities of the Semiarid of Bahia, Brazil. Carbonyl compounds were analyzed by High Performance Liquid Chromatography (HPLC-UV), BTEX (Benzene, Toluene, Ethylbenzene and Xylenes) by gas chromatography (GC-FID), and trace elements by inductively coupled plasma optical emission spectrometry (ICP-OES). Seven carbonyl compounds were quantified including acrolein ( $< 3 - 115 \mu\text{g L}^{-1}$ ), which is considered a potent mutagenic agent, above the potability limit in 75% of the cases. Trace elements such as copper, zinc, barium, aluminum and lead, more frequently found, were also quantified, and lead ( $< 0,56 - 99 \mu\text{g L}^{-1}$ ) was above the tolerable limit for drinking water of  $10 \mu\text{g L}^{-1}$  in 73% of the cases. The results show that the stored water in polyethylene cisterns in the Brazilian semiarid region does not present satisfactory conditions for human consumption.

**Keywords:** Polyethylene cistern, Water storage, Chemical contamination, Human consumption, Semiarid region.

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