Cilantro Leaf, Lead Relief: An Investigation into Which Form of Cilantro (Fresh Leaves, Fresh Stems or Dried Leaves) Is Most Effective in Removing Lead from Lead Contaminated Water

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Lead in drinking water is a worldwide health issue and can cause permanent damage to vital organs, and in children developmental delays and behavioural disorders. This project investigates which form of cilantro (fresh leaves, dried leaves or fresh stems) is most effective in removing lead from drinking water. Two experiments were conducted. Experiment 1 involved filtering a lead nitrate and deionized water solution through the three different forms of cilantro. 5 trials were conducted in which samples were taken pre and post filtration. Experiment 2 involved placing the three different forms of cilantro in a lead and deionized water solution for 10 minutes. 5 replicates of each solution were taken after 10 minutes. TXRF Spectrometer Analysis was used for data collection for both experiments. Experiment 1 showed that through the filtration system, the test using fresh leaves was able to reduce lead concentration on average by 37.47%, fresh stems by 38.08% and dried leaves by 33.11%. Experiment 2 resulted in fresh leaves reducing the average concentration of the solution by 74.01%, fresh stems by 65.43% and dried leaves by 48.48%. The ability of cilantro to remove lead from drinking water, most effectively through the use of cilantro leaves, could be implemented in developing countries as a cheap and simple method of lead removal from drinking water where more sophisticated technology is not viable.

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