Purification of Polluted Water Systems--A Continuation Study: The Effectiveness of Herbs in Removal of Heavy Metals from Drinking Water Supplies

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Polluted water is found all over the world. The developed world has found ways to filter our water for personal use. However, in less developed third world countries, the problem of heavily polluted water is still very present. Water filters that are commonly used consist of activated charcoal and other filters that are just too expensive for third world country citizens to afford. This experiment was designed to improve upon the basis that celery and other herbs could be used as a bioabsorbant to filter water of heavy metal contaminants such as copper, lead, zinc, and nickel. Celery, the most effective herb to filter iron, was used to filter out copper, lead, zinc, and nickel respectively. After, the filtered solutions were tested using a heavy metal test kit to find the concentrations of heavy metal ion left in the solution. The copper solution post-filtration was reduced by 68.8% of the pre-filtration concentration of copper ions. A lead contaminated solution was decreased by 60.8% from filtration, nickel and zinc were decreased by 69.5% and 51.5% respectively. All metals tested were reduced by at least 50% in concentration after filtration, proving that celery could be used as a suitable bioabsorbant filter to improve water quality and overall health. Health issues caused by a build-up of these metals in the body include kidney and liver failure, cancer, and possible death in extreme concentrations.

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