The Effect of Chlorine (ppm) on the Lead Phytoremediation Rate in Lemna minor

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The experiment conducted serves as a novel procedure in which lead extraction is possible in drinking water through the usage of bioremediation, which is cheap and affordable to socioeconomically disadvantaged households globally. The experiment highlights an initial water content of 250 mL in 6 beakers with a prescribed amount of 15 ppm $Pb(NO3)2$ or lead nitrate. An initial 0 ppm up to 5 ppm of chlorine is added as well as Lemna Minor of area 15,393.8 millimeters squared in each beaker. All conductivity measurements will have been recorded for initial values and the corresponding final conductivity measures and precipitate measures are taken by weighing in filter paper. This precipitate is formed through the double replacement reaction of sodium phosphate or $Na3PO4$. A microscope then observes the translucency of Lemna Minor after phytoremediation. This produced the following remaining lead measures in water through the formula developed from 0 to 5 ppm chlorine respectively in grams: 5.33, 3.53, 3.72, 2.17, 1.95, and 0.17. The precipitate measures in 3 milliliters from 0 to 5 ppm chlorine in grams respectively were: 0.00876, 0.00866, 0.00751, 0.00746, 0.00740, and 0.00723. The data concluded from the formula developed, a decrease of translucency across Lemna Minor samples after phytoremediation, regression trend analysis, as well as the precipitate measures all point to a strong correlation to higher chlorine concentrations facilitating greater lead removals through phytoremediation in Lemna Minor.

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