Removal of Some Metal Ions from Aqueous Solution and Water using Dry Palm Leaflets and It's Dehydrated Carbon

Alhashemi, Abdul Aziz

In this project, the ability of dried date palm leaflets and dehydrated carbon that prepared from it was proved to remove some light and heavy metal ions from aqueous solution and well water. Removal of metals ions was determined by means of two concepts that are being taught throughout science curriculum in Oman. The concentration of removal Cu2+ from 0.1M CuSO4 solution was indicated using standard solution (0.02-0.08M) prepared from 0.1M CuSO4 by dilution. In this experiment removal of Cu2+by dehydrated carbon was found to be 80% in (10 min.), while this percentage was reached in (20 min) using dry leaflet. On the other hand, the amount of removal Ca2+from CaCl2 solution was determined using method that detects this ion from its precipitate (CaSO4). The ability of dehydrated carbon to remove Ca2+ in three hours was found to be 60%, so it has high ability to remove Ca2+ from its aqueous. In addition , the atomic absorption spectrometry(AAS) from SQU was used for the analysis of Mg2+,Al3+, Zn2+, Cd2+, Ni2+ ions from sample of well water. The Mg2+ was the largest amount to be removed and the dehydrated carbon was found to remove the lowest concentration like Ni2+. In conclusion, both dry leaflets and dehydrated carbon have high ability to remove metal ion in simple way which is friendly to environment.

Awards Won: