Removal of Hexavalent Chromium With Pectin Extracted From Lignocellulosic Residues of Citrus sinensis 'Valencia'

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Pectin is a polysaccharide that can be used as a bioadsorbent for different water samples that are contaminated with hexavalent chromium (Cr+6). Therefore, it has been considered as a general objective, to evaluate the Bioadsorption of Hexavalent Chromium (Cr+6) with pectin extracted from lignocellulosic residues of Citrus sinensis 'Valencia' for the conservation of the aquatic environment of the Coata River and the Titicaca Lake. And as specific objectives; to determine the pH and the appropriate temperature for the extraction and yield of Citrus sinensispectin, t, to determine the removal percentage of Hexavalent Chromium (Cr+6) and to determine the bioadsorption pH of hexavalent Chromium (Cr+6) for the conservation of the aquatic environment of the Coata River and the Titicaca Lake. The results determine that the temperature and pH affect the adequate extraction of Citrus sinensis pectin, where at a temperature of 80°C, pH equal to 1.5 for a time of 60 minutes allows obtaining a higher average of 10.14 g of dry pectin, the performance of Citrus sinensis pectin extraction is influenced by the pH and temperature, where at a temperature of 80°C, pH equal to 1.5 for a time of 60 minutes allows obtaining a 20. 29% yield. The pH influences the percentages of removal of hexavalent chromium (Cr+6) obtaining a percentage of 99.65, 99.95, 99.6, 99.55 and 99.5% of removal of hexavalent chromium. In addition, at a pH of 3, with a concentration of 0.5 g of cross-linked pectin, the aquatic medium of the Coata River and the Titicaca Lake can be preserved. Finally, it can be indicated that the use of pectin extracted from orange peels are good biosorbents to remove Chromium IV and should be an option in the application of the treatment plants that will be built in the Puno region

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