

## Abstract

In this research, adsorption of chromium onto the mixture of olive stone and date pit has been studied through using batch adsorption techniques. The main objectives of this study are to investigate the chromium adsorption from aqueous solution by mixture of olive stone and date pit and to study the influence of contact time, pH and initial chromium concentration on adsorption process performance and to determine appropriate adsorption isotherm and kinetics parameters of chromium adsorption. The results of this study showed that adsorption of chromium by mixture of olive stones and date pit reached to equilibrium after 120 min and after that a little change of chromium removal efficiency was observed. Medium chromium adsorption was observed at lower pH and maximum chromium removal 53.42 mg/g for (88% DP, 12% OS) obtained at pH of 5. The obtained results showed that the adsorption of chromium by mixture of olive stone and date pit follows Langmuir isotherm equation with a correlation coefficient equal to 0,9988 for (88% DP, 12% OS). In addition, the kinetics of the adsorption process follows the pseudo second-order kinetics model. The results indicate that the mixture of olive stone and date pit can be employed as a low cost alternative to commercial adsorbents in the removal of chromium from water and wastewater