Heavy metals are among the most important pollutants in water. Water contaminated by these metal ions can cause a serious public health problem [1, 2]. Therefore, it is necessary to find new technologies for removing heavy metal ions from wastewater. Agricultural wastes or by-products are considered to be the most potential low cost adsorbents for wastewater treatment [3]. In this study orange peel was chosen as an adsorbent for the removal of copper and cadmium from aqueous solutions. The aim of this work was to study the adsorption capacity of orange peel that was chemically pretreated with dextrin and investigate the effects of pH, contact time, initial metal ion concentration on the adsorption of analytes. Metal ion concentrations were determined using flame atomic absorption spectrometry. The adsorption capacities of dextrin pretreated orange peel (DPOP) and non-pretreated orange peel were compared. DPOP was found to remove copper and cadmium from aqueous solutions efficiently. The heavy metal removal efficiencies were over 90% for copper and 70% for cadmium within 60 min. DPOP biosorbent may be successfully used as a low-cost and abundant source for removal of metal ions and it may be an alternative to many costly adsorbents.

KEYWORDS: heavy metals, adsorption, orange peel, removal

REFERENCES: