Investigation and optimization of removal of reactive red and reactive blue dyes existing in Cane sugar wastewater, entrance to Shadegan wetland with chitosan absorbent

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Abstract

International Shadegan wetland is the one of large Iranian wetlands. This wetland is located in south west Iran in Khuzestan province. Dams construction and not observing of wetland water needs, breeding fish, Saccharum industry sewages, oil pipes crossing, activity of 30 petrochemical unit and urban wastes discharge, entered this unique wetland, from 1992 in red list of international wetlands (Montreo list). Water of this international wetland that to be in 5 degrees in terms of registered degrees in UNESCO, supply from Jarrahi and Karun and also Persian Gulf tide that in spite of seasonal of its fresh water section, wetland salt water because of connection to Persian Gulf is continual. Absorption and removal of reactive red and reactive blue dyes that enter to Shadegan wetland with chitosan, are investigated. This study carried out in the interval of February 2018 until June 2018. Anionic dyes like reactive red and reactive blue that used in this research, belong to the sulphunated food azo dyes and dissolved in water. This matter use for coloring of different products like sugar cane, Nutritional supplement, soft drinks, jelly, different fruit juices and etc. We can see from results that the maximum removal percentage of reactive red and reactive blue, with the chitosan in the pH =5 and in the upper and lower pH values, the yield is decreased. It can be seen from results that the maximum removal for reactive red in the 50 min and for reactive blue is in the 40 min for chitosan absorbent.

Keywords: Shadegan wetland, Dye pollution, Absorbent, Chitosan, Reactive red, Reactive blue.