Studying the causes of high chromium concentration in the leather production process at Tehran Charmshahr industrial complex

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Abstract

Introduction: Harmful effects of environmental pollutants and their environmental impacts necessitate revention of the pollution emission from various industries. Leather industry is one of the most polluting industries, with chromium compounds as an important contamination, widely used in the tanning process. The present study aimed to determine the causes of high chromium concentration from leather production process in Charmshahr industrial complex in Varamin city.

Material and Method: Continuous sampling was done from the wastewater in each plant for six months and the contaminations resulted from different stages of leather products were investigated. In this regard, for determining the chemical quality and pollution load of wastewater from tannery process, following parameters were examined: PH, Chemical Oxygen Demand (COD), Biological Oxygen Demand (BOD), Total Dissolved Solids (TDS), Chromium (III), and Chromium (VI). Analysis of data was conducted by SPSS and Excel softwares. The t-test was used for comparison with standards at significance level of $P<0.05$.

Conclusion: The results indicated the existence of toxic pollutants such as Cr+3 and Cr+6 in leather wastewater, the relatively high level of organic loads with low biodegradability, high levels of COD, BOD, TDS and finally the complexity of the treatment of wastewater.

Key words: *Leather Industry, Wastewater, Tanning, Chromium*

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