**Opuntia ficus indica** as a polyelectrolyte source for the treatment of tannery wastewater

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**ABSTRACT**

This work presents the utilization of a natural polyelectrolyte, extracted from the cactus *Opuntia ficus indica*, as an auxiliary coagulant. The polyelectrolyte was employed together with either aluminum sulfate or ferric chloride in the treatment of real tannery wastewater. The parameters analyzed were turbidity, chemical oxygen demand, and total chromium concentration. The removal efficiency of chemical oxygen demand increased from an average of 77% using only aluminum sulfate to 90% in the presence of the natural polyelectrolyte. For ferric chloride, the efficiency increased from 91 to 98% when the natural polyelectrolyte was also used. Under all conditions employed, the level of total Cr is reduced below that permitted by the Brazilian legislation.

**Keywords:** Tannery waste; Coagulation; Flocculation; Natural polyelectrolyte