Title: Leaf paste aided goat skin preservation: Significant chloride reduction in tannery

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Leaf paste aided goat skin preservation: Significant chloride reduction in tannery

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Highlight

- *Moringa oleifera* plant leaf used for preservation of goat skin
- Leaf paste with lower salt preserves goat skin without structural modification
- The method could reduce 46% chlorides in leather processing
- TDS, BOD, and COD were reduced 39%, 46% and 48%, respectively

Abstract

In this work, an alternative preservation method was developed to replace the most fraction of sodium chloride for the preservation of goat skin. The *Moringa oleifera* leaf paste in combination with lower salt was applied on the flesh side of the goat skin and observed for 28 days. The preservation method was evaluated monitoring different parameters: shrinkage temperature, hair slip, putrefaction, odour, moisture content, extractable nitrogen, and bacterial count in comparison to the conventional wet salting preservation method. The leaf paste in combination with lower salt preservation method was found effective. Also, a pilot scale experiment was conducted for the preservation of goat skin. The physical and organoleptic properties of the crust leathers were fulfilled the required values. This preservation method was reduced the pollution loads: chloride, total dissolved solids, biological oxygen demand, and chemical oxygen demand in soaking operation by 46%, 39%, 46%, and 48%, respectively. The method could be a sustainable option to preserve goat skin, which could reduce the pollution load during leather processing.

Keywords: Goat skin; Plant leaf paste; Preservation; Chloride; Total Dissolved Solids