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Accelerated Chamois Leather Tanning Process Using Hydrogen Peroxide as an Oxidizing Agent

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Abstract. Leather tanning is a process of modifying the structure of collagen fibres, so animal skin or hide that decays easily is transformed into leather, which is durable and stable to the environmental influences as well as has variety of applications. One of the leather products is oil tanned leather, known as chamois leather. It has unique uses for cleaning, drying, filtration, and garment. A weakness of chamois leather production practiced nowadays is its oxidation process taking relatively long time, i.e. nine days to two weeks. The use of an oxidizing agent was reported to shorten the oxidation process of the tanning. It has been reported that chamois leather can be produced by using rubber seed oil and oxidizing agent of hydrogen peroxide. Appropriate condition for the tanning needs to be applied in order to improve the process efficiency and to obtain satisfactory quality leather. In this study, the best oxidation times inside and outside the rotary drum of the chamois tanning were investigated. The objectives of this study were to investigate the effect of oxidation times of the chamois tanning on the quality of chamois leather and to determine the best condition of oxidation time for the tanning accelerated by hydrogen peroxide. The experiment was conducted by tanning of pickled goatskin for 4, 6, and 8 hours oxidation times inside the rotary drum and 1, 2, and 3 days of oxidation times outside the drum. The physical and organoleptic properties of the leathers were tested. This study shows that the physical and organoleptic properties of the leathers met the quality requirements for the chamois leather. The best conditions for the tanning were oxidation times of 4 hours inside the rotary drum and 2 days outside the rotary drum. Therefore, the use of oxidizing agent could shorten the oxidation process in the chamois leather production.

Keywords: acceleration, chamois leather, hydrogen peroxide, oxidation time, rubber seed oil, tanning