Wacharaphan Siriphan 2007: Investigation into the Improvement of Natural Dye Treatment of Silk Fabric and Removal of Color from Waste Water by Chemical Coagulation. Master of Science (Environmental Science), Major Field: Environmental Science, College of Environment. Thesis Advisor: Assistant Professor Amornrat Promboon, Ph.D. 78 pages.

Investigation into the Improvement of Natural Dye Treatment of Silk Fabric. The silk fabric sample was oxidative bleached and then it was dyed with natural dyes and citric acid as a crosslinking agent. The result illustrated that the bleaching at 60 °C for 1 hour improved the silk fabric whiteness, but decreased the fabric abrasion resistance and tear strength. The dyed silk fabric with citric acid at pH 5.5, temperature 80 °C for 1 hour increased abrasion resistance, the color fastness, the crease recovery and the tear strength as the concentration of citric acid was increased.

The optimum conditions for the removal of natural dye from the wastewater by chemical coagulation using potassium aluminum sulfate and ferrous sulfate ware 20 and 15 min of contacting time, pH 6 and7, respectively. Potassium aluminum sulfate removed dyed from the wastewater better than ferrous sulfate and the optimum ratio of the coagulant to wastewater was 15-20 g to 100 ml. with initial COD of 4,750 mg/l.

WACHARAPHAN SIRIPHAN — Student's signature

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