

Dedication

To my parents

My husband

And every body who helped
in this work

Acknowledgment

I wish to thank God for enabling me to finish my project.

Special thanks are due to my supervisor D. Hago Elfadil Haroun.

Thanks are also extended to my colleagues in the Center of leather and industrial research & consultant center for helping me to prepare my research.

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ABSTRACT

Pollution is one of the problems facing human being and if not controlled it will gradually lead to complicated environmental problems.

According to current legislation on the environment tanners are required to reduce all kinds of pollution (solid wastes, dissolved or suspended substances in effluents, etc)

The beamhouse operations cause the highest pollution during the leather manufacturing processes. Data provided by the leather department center indicated that sodium sulphide and lime are responsible for most pollution (55%) of the total pollution and 84% of the BOD, 75% of the COD, 92% suspended solids and 100% of toxicity.

The aim of this work is to reduce the pollution load by recycling of the liming solution and at the same time reduce the amount of chemicals used in other processes and reduce the cost.

Recycling process was carried out by adding a make up of sodium sulphide, lime and water to the used liquor to raise the concentration to its initial level. Chemical analysis and experimental work indicated that the save of sodium sulphide, lime and water was 60%, 40% and 90% respectively and the leather produced had the same properties compared with that produced by conventional method.

ملخص البحث

التلوث البيئي من اكبر المشاكل التي تواجه الانسان والتي يسعى لتفاديها . بشتي الطرق نسبه لاثارها الضاره علي البيئة . تراعي القوانين الحالية ضرورة تقليل المخلفات الصناعية بمختلف انواعها (واشكالها) صلبة، سائلة، مواد عالقة من المعروف ان مرحلة ازالة الشعر و التجير من اهم مراحل الدباغة واكثرها تاثيرا على البيئة اذ انها مسؤولة عن 55% من جملة التلوث الناتج عن عملية الدباغة بشكل عام .

الهدف من هذه الدراسة هو تقليل نسبة التلوث الناتجة عن عملية ازالة الشعر و التجير وذلك عن طريق اعادة استخدام محلول ازالة الشعر وبالتالي تقليل الاثار السالبة علي البيئة وتقليل التكلفة الاقتصادية للمواد الكيمائية المستخدمة (صوديوم سلفايد ، جير) وتوفير الماء .

تم عملية اعادة استخدام محلول بتحديد نسبة المواد الكيمائية (سلفايد ، جير) والماء المستهلكة ومن ثم اضافتها لمحلول ازالة الشعر و التجير لرفع تركيز محلول الى المستوى المطلوب .

بعد اجراء التجارب المعملية وجد ان نسبة التوفير في المواد الكيمائية 40% من الجير، 60% من السلفايد، 90% من الماء اعتمادا على وزن الجلد بعد البلى .

الاختبارات الفيزيائية والكيمائية للجلود المنتجة بطريقة اعادة الاستخدام لمحلول ازالة الشعر و التجير اثبتت انها مشابهة لنوعية الجلد المنتجة بالطريقة التقليدية .

