Dedication

I dedicate this work to

My mother, father, brothers, Sister, Friends and my lovely child (Mohammed)

Acknowledgements

Thank God for giving me the strength, patience and guidance to go through Reference articles to solve many problems regarding the completion of this research project.

First of all I would like to express my deepest gratitude to Dr. Elmugdad Ahmed Ali for Supporting and helping me by valuable and critical ideas. I can’tforget his fruitful comments by focusing on important points throughout my project.

My appreciationsgo further deep to all teaching and laboratory staff in chemistry department just for cooperation and good advices till completed my research.

Abstract (English)

The crude sodium chloride in Sudanese market's is highly contaminated with undesirable contaminants which make it un conformative with the international standards for table salt.

Random samples were collected from the market and wereanalysed . The result revealed high contamination with SO_4^{2-}, Ca^{2+}, Mg^{2+}, and the moisture content was also found to be high, in addition to insoluble matter.

To get rid of these contaminants the crude salt was washed by brine solution which dissolves the contaminants, but not the sodium chloride. As a result the percentages of impurities were lowered ie. $SO_4^{2-}$from 0.5 % to 0.3 % and Ca^{2+} from 0.28% to 0.12% and Mg^{2+} from 0.52% to 0.21%. Matter insoluble from 1. 30 %to 0.01% this resulted is increasing the percentage ofsodium chloride 96.5% to 99.1% this simple economical method produced table salt which satisfies the requirements of the standards.

ملخص البحث

ملح الطعام الخام المتواجد في الاسواق السودانية ملوث الى درجة كبيرة بملوثات غير مرغوب فيها مما يجعل خواصة لا تتطابق مع الموصفات العالمية لملح الطعام.

اختيرت عينات بطريقة عشوائية من السوق تم تحليلها . وكشف التحليل ان العينات فيها نسبة عالية من الملوثات مثل Ca^{2+}, Mg^{2+}, SO_4^{2-} وايضا نسبة الرطوبة كانت عالية بالاضافة لبعض العناصر غير الذائبة.

للتخلص من هذه الملوثات غسل الملح بمحلول من ملح الطعام النقى المشبع والذى يذيب الشوائب ولا يذيب ملح الطعام . نتيجة لذلك انخفض تركيز الملوثات مثلاً ايون الكبريتات انخفض من0.5 % الى 0.3 % وايون الكالسيوم من 0.28% الى 0.12 % وايون الماغنزيوم من 0.52 % الى 0.21 % وادى ذلك الى زيادة نسبة كلوريد الصوديوم من 96,1 % الى 99,1 % وبهذه الطريقةالاقتصادية البسيطة تم انتاج كلوريد الصوديوم تتطابق مواصفات مع متطلبات المواصفات القياسية .

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List of Abbreviation

Abbreviation	Word
B.C.	Before Christ
A.D.	Is short for anno domini which means the‘‘ year of our lord’’
ASTM international	American society for testing and materials
IMO	International maritime organization