

# Dedication

To my family

and

my friends.

I dedicate this work

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## **Acknowledgement**

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# **Abstract**

This dissertation done by x-ray fluorescence to analysis three samples taken from various places in Khartoum and the duration of production was similar of Sudanese white cheese to know all the elements in the samples and their concentrations and determination the heavy elements in each sample and exactly lead (Pb) concentration. The heavy elements in sample one are [Pb, Ni, Zn, Co, As], the elements in sample two are [Pb, Ni, Zn, Ti], the heavy element in sample three are [Pb, Ni, Zn, Co, Ti]. We noticed lead element appeared in each sample, We did comparison between our elements concentration and the standard concentration from Sudanese Standards and metrology Organization (SSMO) calculated their error. We noticed the concentrations were different from sample to another sample. The difference may be happened for many reasons. One of them types of food for animals was differed from area to another area so that will effect on their milk quality. When human body expose to high dose of heavy elements in food exactly in white cheese will occur more diseases like a rise in blood pressure, anemia, diarrheas and poison.

## خلاصة البحث

تم في هذا البحث التعرف علي مكونات العناصر الأساسية للجبنه البيضاء وتراكيز العناصر المكونة لهذه الجبنه ومن هذه العناصر عنصر الرصاص (Pb). ووجد أن العناصر المكونة للجبنه البيضاء تحتوي علي بعض العناصر الثقيلة وذلك عن طريق جهاز XRF. تم التعرف علي هذه العناصر وتراكيزها في ثلاث عينات كل عينة علي حدة ومقارنة هذه التراكيز مع وصفه لهذه الجبنه من الهيئة السودانية للمواصفات والمقاييس وتم إيجاد الخطأ لكل عينة. وجد أن العينة الأولى تحتوي علي عناصر (Pb, Ni, Zn, Co, As) والعينة الثانية تحتوي علي عناصر (Pb, Ni, Zn, Ti) والعينة الثالثة تحتوي (Pb, Ni, Zn, Co, Ti). وقد لوحظ من هذه النتائج أن تراكيز العناصر تختلف من عينة الي أخرى إختلاف بسيط وينتج هذا الإختلاف لإختلاف المناطق التي أخذت منها هذه العينات في الخرطوم وبالتالي سوف تختلف جودة الألبان التي تصنع منها هذه الجبنه لإختلاف نوعية التربة والغذاء من منطقة الي أخرى .

يؤدي زيادة كمية العناصر الثقيلة في جسم الإنسان من تناول الأطعمة مثل الجبنه الي بعض الأمراض مثل إرتفاع ضغط الدم وفقر الدم والإسهالات والتسمم .

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