



**International university of Africa**

**Dean ship of graduate studies**



**Physicochemical properties and GC/MS**

**Analysis of BT cotton seed oil**

**A Thesis submitted for the supplemental fulfillment of the requirements of the M.Sc degree in industrial chemistry**

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## **Dedication**

**To my family with love**

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## ABSTRACT

The objective of the study was to determine the physical and chemical properties of the oil extract from the genetically modified cotton. The study began taking the seed from marangan surgeon (Wdmdanistate)

The seed were cleaned from impurities and then dredged .The oil was extracted by saxolite device using . n-Hexane solvent.

The tests included ( ash content – moisture content – crude protein – crude fiber oil ratio – density – viscosity – refractive index – color - Iodin Value – peroxide value – acid value - saponification, un saponification ) .

The results of these tests were within the limits allowed by the specifications of the Sudanese standards, except for the proportion of oil was slightly lower the in the non – focused.

- The analysis of GC/MS was also performed on the oil sample and the result was that the fatty acids retained the some structural and there was no change.

## مستخلص البحث

كان الهدف من الدراسة هو معرفة الخواص الفيزيائية والكيميائية للزيت المستخلص من بذرة القطن المحورة وراثياً.

بدأت الدراسة بأخذ عينات من بذرة القطن المحورة من ملحج مارنجان في مدينة ود مدني ولاية الجزيرة.

تم تنظيف البذور جيداً من الشوائب ثم سحنها واستخلاص الزيت منها عن طريق جهاز السكسوليت (تم استخدام الهكسان كمذيب).

تم اجراء الاختبارات الفيزيوكيميائية للزيت المستخلص وبذرة القطن وشملت هذه الاختبارات ( نسبة البروتين - الرطوبة - الالياف - الرماد - نسبة الزيت -الكثافة - معامل الانكسار - اللزوجة - اللون - رقم الحموضة - رقم اليود- البروكسيد -التصبن )

وكانت نتائج هذه الاختبارات ضمن الحدود التي تسمح بها الهيئة السودانية للمواصفات والمقاييس.

أيضا تم اجراء تحليل GC/ MS على عينة الزيت دراسة اهم الاحماض الدهنية المعروفة وكانت النتيجة ان هذه الاحماض محتقظة بنفس التركيب البنائي لها ولم يحدث تغيير.



