

Sudan University of Science and Technology
College of Graduate Studies

**Improving the Optical Properties of Olive Oil by
Adding black Cumin seed Oil Made with Cold
Pressing Technology**

**تحسين الخصائص البصرية لزيت الزيتون بإضافة زيت الحبه
السوداء المصنع بتقنية الضغط على البارد**

**Thesis Submitted In Partial Fulfillment Of The Requirement
Of M. SC. Degree in General Physics**

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November 2020

الآية

بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ

قال تعالى

إقراء باسم ربك الذي خلق (1) خلق الانسان من علق (2) إقراء
وربك الاكرم (3) الذي علم بالقلم (4) علم الانسان ما لم يعلم (5)

سورة العلق

Dedication

To

my

beloved mother

dear father

brothers

sisters

and all family

I dedicate this work

Acknowledgment

First of all thanks and praises to Allah for giving me strength and patience to complete this work.

I would like to express my gratitude to my supervisor and instructor **Dr. Nafisa Badr Eldeen** for her unlimited support and assistance guidance during this work, my sincere appreciation to **Dr. Abd El-lateef** for helping me to complete the experimental part ,and **MUSAB HASAN** for standing by my side all the time and help me with important tools.

I also thank all those who taught me during stages of my studies, dear professors in Sudan University of Science and Technology.

Abstract

In this study, examined the possibility of improving the optical properties of olive oil by denaturing it with black seed oil at different concentrations. At the beginning, prepared black seed oil by using the cold pressing technique and then added it to olive oil in different concentrations: 0.5 ml, 1 ml, 1.5 ml, and 2 ml per 4 ml of olive oil respectively to form four samples and a fifth pure olive oil. The five samples were used by an ultraviolet spectrophotometer, where the absorbance values were taken in relation to the wavelength of each sample. And it was found that there was a direct correlation between the increase in the distortion and the absorbance for each sample, where the absorbance of the pure sample was 3.67, while the absorbance increased with the increase of the distortion to reach in the sample with a concentration of 2 ml to 3.85.

المستخلص

في هذه الدراسة تم دراسة امكانية تحسين الخصائص البصريه لزيت الزيتون عن طريق تشويبه بزيت الحبه السوداء بتركيز مختلفه . في البدايه حضر زيت الحبه السوداء عن طريق تقنية العصر على البارد ومن ثم اضافته الى زيت الزيتون بتركيز مختلفه . 0.5مل و 1 مل و 1.5مل و 2مل لكل 4 مل من زيت الزيتون على التوالي لتكوين اربعة عينات وعينه خامسه نقيه من زيت الزيتون , تم فحص العينات الخمسه بواسطة جهاز طيف الاشعه فوق البنفسجيه حيث اخذت قيم الامتصاصيه بالنسبه للطول الموجي لكل عينه . ووجد ان هنالك تناسب طردي بين زيادة التشويب و الامتصاصيه لكل عينه حيث كانت الامتصاصيه للعينه النقيه 3.67 بينما زادت الامتصاصيه مع زيادة التشويب لتصل في العينه ذات التركيز 2مل الى 3.85 .

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