

# الآية

بسم الله الرحمن الرحيم

قال تعالى: { اللَّهُ نُورُ السَّمَاوَاتِ وَالْأَرْضِ مِثْلُ نُورِهِ كَمِشْكَاةٍ  
فِيهَا مِصْبَاحٌ الْمِصْبَاحُ فِي زُجَاجَةٍ الزُّجَاجَةُ كَأَنَّهَا كَوْكَبٌ  
دُرِّيٌّ يُوقَدُ مِنْ شَجَرَةٍ مُبَارَكَةٍ زَيْتُونَةٍ لَشَرْقِيَّةٍ وَلَا غَرْبِيَّةٍ  
يَكَادُ زَيْتُهَا يُضِيءُ وَلَوْ لَمْ تَمْسَسْهُ نَارٌ نُورٌ عَلَى نُورٍ يَهْدِي  
اللَّهُ لِنُورِهِ مَنْ يَشَاءُ وَيَضْرِبُ اللَّهُ الْأَمْثَالَ لِلنَّاسِ وَاللَّهُ  
بِكُلِّ شَيْءٍ عَلِيمٌ }

صدق الله العظيم

سورة النور

# Dedication

To my parents

Who give me interest and encouragement

To my husband

Who stood beside me to follow the path of success

For my daughters

the hope of life.

# Acknowledgement

I would like to thank my supervisor Dr. Siddig T Kafi. for this encouragement and follow up during this work. I would also like to thank Dr. Abdeffattah M Mohammed and Dr. Dessugi Omar from Alneelain University for their useful discussions and technical support. Thanks also transfer to the staff members of the Institute of Laser at Sudan University of Science and Technology.

## **Abstract**

This research was proposed to study the effects of direct Sunlight exposure on selected artificial food dyes(Sunset yellowE110, TartrazineE102, Allura RedE129, Fast GreenE142). These dyes were desolved in distilled water and studied using Ultra-Violet Spectrometer (Uv-Vis)before and after sunlight exposure. The obtained spectra for these dyes showed increase in the absorbance and hence concentration which indicates increase of the side effects of the dyes on people.

Chemical structure of these dyes were figured out using Fourier transforms infrared spectroscopy (FTIR). This showed existence of Alcohols and Phenol(chemical benzene). It was concluded that exposure of food mixed with artificial dyes to sunlight may cause negative impact on human.

## المستخلص

في هذا البحث تمت دراسة تأثير التعرض المباشر لأشعة الشمس على بعض الصبغات الغذائية Sun set Yellow E110 , Tartrazine E102 , Allura Red E129 , Fast Green E142. هذه الصبغات تم حلها بماء مقطر ودرست إمتصاصيتها قبل وبعد التعرض للشمس بواسطة Uv\_VisSpectroscopy ، وجد أن الإمتصاصية تزيد بزيادة مدة تعرضها للشمس. الرسم البياني لهذه الصبغات يوضح الزيادة في الامتصاصيه وبالتالي الزيادة في التركيز مما يؤدي الي زياده الاثار الجانبيه على الانسان.

وأيضاً تمت دراسة التركيبية الكيميائية لهذه الأصباغ بواسطة جهاز Fourier Transformer Infrared Spectroscopy (FTIR) ووجد بكل هذه الصبغات التي تمت دراستها فينول (Chemical Benzene) ومركبات عطرية وكحول.

خلاصه الامر أن تعرض الغذاء الذي يحتوي على الصبغات الصناعيه للشمس يؤدي الى اثار سالبه تؤثر على البشريه.

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