

البحث رقم (٦) : بحث فردي إعتباري – مقبول للنشر – غير مستخلص من رساله علمية

**Seed Oil from a New Non-toxic *Jatropha* Species (*Jatropha curcas*): Chemical Composition, Physicochemical Characteristics, and Oxidation Stability**

عنوان البحث

زيت من بذرة الجاتروفا كوركاس غير السامة : التركيب الكيميائي ، الخصائص الفيزيوكيميائية ، و الثبات الاوكسيدي

### Abstract

IN THIS study, non toxic (zero phorbol esters) *Jatropha curcas* seed from south region of Egypt was analyzed for its proximate composition. The seeds oil was extracted and analyzed for fatty acids composition, physical and chemical characteristics. The hexane-extracted oil content of jatropha seeds was found to be  $26.73 \pm 0.34\%$ . The values obtained for crude protein, ash, crude fiber, carbohydrate and moisture were  $20.33 \pm 0.08$ ,  $5.31 \pm 0.33$ ,  $9.47 \pm 0.22$ ,  $31.83$  and  $6.33 \pm 0.18$  % respectively. Results of physical and chemical parameters of the investigated oil were as follows: iodine value, 112 (g I<sub>2</sub>/100g oil); refractive index, (1.4682±0.18); saponification value, (194.32±0.4mg / g oil); unsaponifiable matter, (2.40±0.17%); acidity (as oleic acid) 2.33 %; and peroxide value, (3.20±0.18 meq O<sub>2</sub> / kg oil). The oil was found to contain high levels of oleic acid (44.8%) followed by linoleic, (33.55%) and palmitic acid (14.03 %), in addition to a little amount of stearic and myristic acids. This *Jatropha curcas* seed oil with the highest amount of polyunsaturated fatty acids (linoleic acid) and unsaponifiable matter may find an application in surface coating industries and bio-lubricant base oil and also can be used as an insecticidal agent.