



جامعة الفيوم  
كلية الزراعة  
قسم علوم وتكنولوجيا الأغذية



**Antioxidant potential of sesame (*Sesamum indicum*) cake extract in stabilization of sunflower and soybean oils (2011)**  
**Industrial Crops and Products 34, 952– 959.**

**Adel A.A. Mohdaly<sup>a, b</sup>, Iryna Smetanska<sup>a</sup>, Mohamed Fawzy Ramadan<sup>c, \*</sup>,  
Mohamed A. Sarhan<sup>b</sup>, Awad Mahmoud<sup>b</sup>**

a- Institute of Food Technology and Food Chemistry, Methods of Food Biotechnology, Technical University of Berlin, Germany.

b- Food Science and Technology Department, Faculty of Agriculture, Fayoum University, Egypt

c- Agricultural Biochemistry Department, Faculty of Agriculture, Zagazig University, Zagazig 44519, Egypt.

**Article No.: 2**

**منشور (مستخرج من رسالة)**

**Impact Factor: 3.208**

**Abstract**

Recently natural antioxidants have gained increased interest because natural food ingredients are safer than synthetic ones. Antioxidant activities and protective effects of sesame cake extract (SCE) in stabilizing sunflower oil (SFO) and soybean oil (SBO) were tested. Since different antioxidant compounds have different mechanisms of action, 2,2-azinobis (3-ethylbenzthiazoline sulfonate) (ABTS) radical scavenging activity, 1,1-diphenyl-2-picrylhydrazyl (DPPH) radical scavenging capacity, and  $\beta$ -carotene/linoleic acid test system were used to assess the antioxidant efficacy of SCE. Total phenolic, flavonoid and flavonol contents in SCE were 1.94 (mg gallic acid equivalent (GAE) g<sup>-1</sup> dry weight (DW)), 0.88 (mg quercetin equivalent (QE) g<sup>-1</sup> DW), and 0.40 (mg QE g<sup>-1</sup> DW), respectively.

Protective effects of SCE in stabilizing SFO and SBO were tested, compared to synthetic antioxidants, by measuring their peroxide values (PV), conjugated dienes (CD), conjugated trienes (CT) and *p*-anisidine value during accelerated storage.

Results indicated that SCE exhibited stronger antioxidant activity in SFO and SBO than butylated hydroxytoluene (BHT) and butylated hydroxyanisole (BHA), while its antioxidant activity was less than that of tert-butyl hydroquinone (TBHQ)