Uniwersytet Wrocławski

Repozytorium

Plik pochodzi z repozytorium Wydziału Chemii Uniwersytetu Wrocławskiego

Pro- and antioxidative effect of α-tocopherol on edible oils, triglycerides and fatty acids.

Autorzy

Maria Jerzykiewicz

Irmina Ćwieląg-Piasecka

Adam Jezierski

Rok wydania

2013

Czasopismo

Journal of the American Oil Chemists Society

Numer woluminu

90

Strony

803-811

DOI

10.1007/s11746-013-2227-y

Kolekcja

Naukowa

Język

Angielski

Typ publikacji

Artykuł

Streszczenie

Using advanced electron paramagnetic resonance techniques (EPR), oxidation of crude vegetable oils and their components (fatty acids and triglycerides) by radicals generated from hydrogen peroxide was investigated. The correlation rotational times were determined allowing us to characterize radicals formed during edible oils oxidation. Additionally 1 H- and 14N-hyperfine coupling constants differentiate the fatty acids dependently on their unsaturation. The acids with a higher number of unsaturated bonds exhibit higher AN values of PBN/lipid adduct. The waste oil with high free fatty acids content underwent the oxidation reaction more efficiently, however due to saturation and the high content of the fatty acids the carboncentered radicals formed (upon hydrogen peroxide radicals) and their PBN (N-tert-butyl-a-phenylnitrone) adducts were less stable. The antioxidant effect was dependent on the amount of a-tocopherol added. In small amounts of up to 0.35 mg/1 g of fatty acid or triglyceride, it inhibited the creation of PBN/lipid adducts while with higher amounts it intensified adduct formation. The a-tocopherol (AT) addition influence was also studied as spin scavenging dependence and indicated that any addition of the antioxidant in the investigated samples led to free radical scavenging and the effect increased with the increase in AT content.

Słowa kluczowe

Oils, Fatty acids, a-Tocopherol, EPR

Licencja otwartego dostępu

CC-BY

Licencja na prawach której można swobodnie kopiować, rozprowadzać, zmieniać i remiksować objęty prawem autorskim utwór (Utwór-przedmiot prawa autorskiego) pod warunkiem podania imienia i nazwiska autora utworu pierwotnego oraz źródła pochodzenia utworu.

Pełny tekst licencji:
https://creativecommons.org/licenses/by/3.0/pl/legalcode

Adres publiczny

http://dx.doi.org/10.1007/s11746-013-2227-y

Strona internetowa wydawcy

http://link.springer.com

Plik został wygenerowany dnia 2026-11-11 16:34:13
Adres w repozytorium https://old.chem.uni.wroc.pl/pl/repozytorium/HQn9311.