

Synthesis of New Biological Active Compounds from Linoleic Acid of Melon Seed and Production of a New Adsorbent From its Meal

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Abstract

Melon seed was dried, oil was extracted, its parameters had been determined. The produced oil was then hydrolyzed into glycerol and mixture of free fatty acids. Fatty acids mixture was separated. Then, by means of supercritical CO₂ extractor linoleic acid was extracted individually. linoleic acid was then confirmed according to its melting point, GC-MS after esterification, elemental analysis, H¹NMR and mass spectrometry (ms) of the corresponding methyl ester in order to detect the corresponding molecular ion peak. The pure individual linoleic acid went through several chemical reactions into derivatives of deferent heterocyclic compounds. The structure elucidation of all synthesized compounds was established according to elemental analysis and spectral data (IR, ¹H NMR, ¹³C NMR and MS). Then the prepared compounds were tasted for their antimicrobial activities. While, the leftover melon seed cake was used for ash production, thus, it was carbonized, and its elemental content was detected, then it was used as a natural adsorbent for improving the quality of used fried oil. Where a frying process was achieved for 24 h.. Some of the used oil was treated with ash of melon seed cake at 105 C for 15 min. and compared to other portion that was treated with Magnesol XL at the same conditions. All Physical and chemical parameters of fresh oil, used oil, used oil treated with ash of melon seed cake and used oil treated with Magnesol XL were determined individually.

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