Bioactive Compounds of Bio-oils Unsaponificable Fraction

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There has been a continuous development of pharmaceutical and food supplements market in the world. It is caused by the increase of so called civilizational disease. Nowadays there is a demand for natural sources of bioactive food components which can influence positively man's condition. Bioactive components of plant oils can be a successful weapon of a contemporary man in the fight with the causes of most indispositions.

The aim of the research was to characterised bioactive components of unsaponifiable fraction of chosen biooil. Twelve oils were analyzed as far as the content of tocopherols, squalene, phenolic compounds and sterols were concerned.

The analysis of tocopherols, squalene contents were carried out by high liquid chromatography (HPLC-DAD-FLD). The content of sterols in oils was determined by gas chromatography coupled with mass spectrometry (GC-MS). The total amount of phenolic compounds in oils was determined by the colorimetric methods with applying Folina-Ciocalteau reagent.

The examined oils were characterized by differentiated amount of particular forms of tocopherols. α and γ- tocopherols dominated in all examined oils. The oil obtained from the seeds of Amaranthus was the richest source of squalene of all the examined oils. It contained over 52 mg/g oil.

The presence of 22 different compounds of sterols were identified, whereas β – sitosterol was found in the largest amount. Total amount of sterols in the oils ranged from 90 (walnut) to 850 mg / 100 g (evening primrose). Significant differentiation of total amount of phenolic compounds was observed in the examined oils. Sea buckthorn oil showed the highest amount of phenolic compounds (1885.39mg/kg). The presented results prove that plant oils obtained from non conventional sources are a potential source of bioactive compounds. These compounds are of significant importance both in forming durability of oils and estimation of usefulness of these oils as assisting agents in the prophylaxis of civilization diseases.