

PP68. Antioxidant activity of lemongrass essential oil and its constituents

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Plants and their ingredients (essential oil, flavonoids, etc.) are considered to be functional food if specific health benefits are attained by their consumption. These benefits include mostly preventive and protective but sometimes curative properties against one or more diseases, usually the so-called civilization diseases (different types of cancer, cardiovascular and neurodegenerative diseases) [1]. The essential oil (EO) obtained from *Cymbopogon citratus* (DC.) Stapf. (Poaceae) is a perfect functional food ingredient. Its characteristic, pleasant and refreshing odor goes hand in hand with its antiinflammatory, diuretic and sedative activities, due to which the plant was used in folk medicine for the treatment of nervous and gastrointestinal illnesses [2].

The aim of this work was an assessment of the antioxidant activity of lemongrass essential oil and its constituents. EO was hydrodistilled from the leaves and also the stems of *C. citratus* grown in Poland, while its chemical composition was analyzed by GC-MS. Both essential oils had a very similar chemical composition, with the exception of the presence of a sesquiterpene alcohol, elemol, in the stems oil, as well as a different antioxidant activity, which was higher for the EO obtained from the stems. The next stage of our research work was the isolation of the major components by the use of high-performance counter-current chromatography (HPLCCC). The isolated compounds, neral, geranial, and elemol, as well as citronellol and citronellal, were subjected to antioxidant activity testing by TLC-bioautography using DPPH as the detection reagent, as well as by the CUPRAC method. However, the performed studies did not confirm the antioxidant activity of the major components alone present in the lemongrass essential oil. In total, neral, geranial, and elemol constituted 84.2% of all components present in the EO from *C. citratus* stems but they were not responsible for the observed antioxidant effect. It can be concluded that the antioxidant activity of lemongrass oil is the result of a synergistic effect of all ingredients present in this EO.

References:

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