



Deutsche  Gesellschaft für Fettwissenschaft e.V.

9th European Symposium on Plant Lipids



Book of Abstracts

07 -10 July 2019, Marseille, France



Tocopherol Composition in Cold Pressed Oil of Serbian Confectionary Sunflower (*Helianthus Annuus L.*) Hybrids

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Sunflower (*Helianthus annuus L.*) is an important oilseeds crop among the four major oilseeds crop cultivated in the world viz., soybean, brassica, sunflower and groundnut. Two types of sunflower are grown viz., oil seed purpose and non- oil seed sunflower for commercial market. Non-oilseed sunflower is known as confectionery sunflower and their seed generally is larger than that of the oilseed types and has a lower oil percentage with high protein and sugar content. Vegetable oils are significant sources of antioxidants in human nutrition. Natural antioxidants present in oils have obtained substantial attention because of their health and nutritional effects. Plants produce of antioxidant compounds such as tocopherols and tocotrienols to prevent oxidation of the susceptible substrate. Antioxidant properties the tocopherols content of oils can give human health benefits like modulating cancer, cardiovascular diseases and a protective effect by lowering LDL cholesterol by inhibiting cholesterol biosynthesis. Over the last few years, increased interest for natural antioxidant in cold-pressed plant oils has been observed since they have better nutritive properties in comparison to refined ones. The aim of this study was to investigate tocopherols composition (α -, β -, γ - tocopherols) in selected 10 cold-pressed sunflower oils obtained from confectionary sunflower hybrids cultivated in Serbia (2017 harvest). Quantification of tocopherols was carried out using high performance liquid chromatography on a column Nucleosil 100-5 NH₂ with fluorescence detection (λ_{ex} =280 nm, λ_{em} =340 nm). The mobile phase was n-hexane/ethyl acetate (70/30, v/v) with a flow rate of 1 ml/min. Total tocopherols content in cold-pressed sunflower oils ranged from 413.13 mg/kg in NS-H-6791 hybrid to 720.99 mg/kg in NS-H-6488 hybrid. Major vitamers for those tested hybrids was α - tocopherol. The results have shown that there were significant differences in tocopherols composition and content among the hybrids, indicating the great genetic potential for improvement.

AKNOWLEDGMENT:

This work is the result of research under the projects TR 31025 and TR 31014, financed by the Ministry of Education, Science and Technological Development of the Republic of Serbia.