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Title: Polyphenols-Potential Food Improvement Factor

Author: Gramza-Michalowska and J. Korczak

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:: Table of Contents

:: Full Text

:: Citation

:: Quick Search in ASCI

Abstract: The aim of the research was to analyse the antioxidative properties of plant extracts; green tea (GTE) and rosemary (RE) ethanol extracts and comparison with other commonly used antioxidants. Lipid substrate consisted of three forms: bulk, on cellulose matrix and emulsified sunflower oil TAG. The level of lipid oxidation was investigated by different methods: bulk oil-peroxides, p-anisidine and Totox value, oil emulsion-peroxide value, malondialdehyde (TBARS) and Conjugated Linoleic Acid dienes (CLA) content. All forms of lipid were incubated at 40EC Schaal oven test in complete darkness. Addition of GTE and RE has efficiently increased bulk TAG stability. It was found that 1000 ppm of GTE inhibited lipid oxidation properly, lowering almost two times the peroxides content, RE almost three times. BHT was slightly weaker antioxidant. TAG on microcellulose matrix showed better stability with addition of GTE at concentration of 1000 than 200 ppm, lower however than BHT and RE. Analyses of emulsified TAG allowed to state that GTE did not protect lipid as well as in the other lipid forms. GTE (1000 ppm) showed significantly lower activity than BHT. Addition of 200 ppm GTE influenced prooxidatively lipid oxidation. Results showed that all antioxidants added stabilized sunflower oil triacyloglicerols, however they were not similarly active in all lipid forms.

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Antioxidants, tea extract, rosemary extract, lipids, TAG and lipid oxidation