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Antioxidant potentials of polyphenolic extracts from leaves of trees and fruit bushes

Sylwia Cyboran, Dorota Bonarska-Kujawa, Ireneusz Kapusta, Jan Oszmiański, Halina Kleszczyńska

The aim of the work was to determine the antioxidant potential of extracts from leaves of strawberry, blackcurrant and apple in relation to lipids contained in the erythrocyte membrane. The studies performed have shown that the substances used protect membrane lipids against oxidation, clearly reducing the level of free radicals in erythrocyte ghosts suspension. The antioxidant activity of the substances studied follows the sequence: strawberry leaves > apple leaves > blackcurrant leaves. The results of the research on the antioxidant activity when confronted with the contents of polyphenols in the extracts indicates that the antioxidant potentials of the extracts depend both on the quantity and kind of individual polyphenols; in particular, on the kind and quantity of quercetin derivatives that constitute over 60 % of all the phenolic compounds. Moreover, the high antioxidant activity of the extracts may be also due to other, nonphenolic substances that occur in leaves. The extracts exhibit very good properties as free radical scavenges, and can thus be used as cheap, easily available, natural antioxidants in the industries where natural antioxidants in the form of fruit extracts have been used for long.