

Terpene and Polyphenol Compounds in the Natural Environment and Human Organism.

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Organic compounds are biosynthesised in plant organisms. Their occurrence is essential for the physiological activity of plant growth, organ formation, fruit maturation or assimilation of atmospheric nitrogen. Among these compounds, polyphenols belong to the compounds most abundant in plant tissues. Also the presence of phenolic acids and terpenes is very important. These compounds, besides being involved in the above mentioned functions also participated in defense of organisms towards pathogens such as bacteria, fungi and viruses, prevent damage of tissues caused by physical factors such as excessive ultraviolet radiation and the effect of sulphur or nitrogen oxides. Biological (mainly antioxidant) activity of polyphenols and their derivatives results from their chemical structure and is strictly related to the presence of hydroxyl residues in the aromatic ring of the compounds. According to literature data, polyphenols and phenolic acids prevent tissues and organs against oxidative damage, decrease the concentration of lipoprotein fraction – LDL, are antimutagenic and inhibit growth of neoplastic cells. The activities efficiently decrease the risk of coronary cardiovascular diseases and neoplastic change. Polyphenols exert also antihistamine, antibacterial and antiviral activity.