QUERCETIN, A FLAVONOID IMPORTANT IN PLANT LIFE

Summary

Quercetin (Q) belongs to flavonoids, and it has been classified as a flavonol. It is widely distributed in the plant kingdom. In plants, Q rarely occurs as an aglycone, in most cases it forms combinations with various compounds, including sugars. Flavonols are probably the most important and oldest group of flavonoids. Q is found in various tissues, cells and cellular compartments, what is associated with their functions, it also participates in the interactions between plants and environment. Hydrophilic derivatives of flavonols are accumulated predominantly in cellular structures (chloroplast, cytoplasm, vacuole, nucleus). Lipophilic derivatives occur mainly in trichomes located on the surface of leaves, flowers and fruits. They are accumulated in the areas where they can effectively eliminate oxidative damage caused by excessive light, thus they are located in the areas where ROS (reactive oxygen species) are formed. Q and its derivatives protect plants against oxidative stress but also, changing redox status, they can control cell growth and differentiation. These compounds have many physiological activities, i.a. by regulation of IAA concentration in various ways they influence pollen maturation. Thus, quercetin is important for the development of individual organs and the whole plant.