

**Abstract:**

Phenolic substances are considered to be a group of secondary metabolites, known primarily from land plants (Embryophyta). Their function is to absorb harmful ultraviolet radiation, to protect plants from grazing and to attract pollinators and seed spreaders. However, these compounds have also been reported in some phylogenetically unrelated algal groups, the most important of which are brown algae (Phaeophyceae), siphonous green algae from the Dasycladaceae family and conjugating algae (Zygnematophyceae). The aim of this work is to summarize the current knowledge about phenolic compounds of these groups with an emphasis on their significance for the biology of the species. The first part describes phenolic compounds in general and also outlines the way they are biosynthesized. The next chapters then deal with the three algae groups. The most explored ones in this area are brown algae, which contain a unique type of tannins called phlorotannins in their thallus. This is followed by green siphonous algae from the family Dasycladaceae, which synthesize sulphated coumarins and then conjugating algae in which gallic acid-based phenolic compounds have been found. The common feature of these substances is, as with land plants, the ability to absorb radiation from the ultraviolet part of the spectrum and to quench reactive oxygen species. However, phlorotannins and coumarins in brown and siphonous algae also have several functions associated with the development of the organism, which underlines the importance of these substances and far exceeds the definition of secondary metabolites. The last chapter deals with lignin and flavonoids, which, although they have long been associated only with land plants, have recently been described in algal organisms.

**Key words:** phenolic substances, UV protection, phlorotannins, coumarins, lignin, flavonoids