

Lichens are fungi that live as ecologically obligate biotrophs in symbiosis with algal and/or cyanobacterial photobionts. About 8% of terrestrial ecosystems are dominated by lichens in situations where vascular plants are at their physiological limits. There are three types of lichens, namely crustaceous, foliose and fruticose. Lichens are very slow growing and large plants are relatively old, suggesting a well balanced relationship between the algal and the fungal partners. Lichens produce a wide array of secondary metabolites. The main types are depsides, depsidones, dibenzofurans anthraquinones, xanthenes, chromones, pulvinic acid derivatives, terphenylquinones, terpenes and steroids. The majority of lichen substances, are deposited in the medulla. There are several ecological, medicinal and other economic roles of lichen substances such as light-screening, chemical withering, biological activity, anti-herbivore defense, and allergic activity. Furthermore they have found use as dyes, perfumes and food sources. The application of chemical discriminators to lichen taxonomy is widely accepted. The secondary metabolites in about 5000 species (33 % of all known species) have been studied and the data are used in the routine identification of lichens. Within a complex of morphologically similar species, three common patterns of chemical variation can be discerned: Replacement compounds, chemosyndromic variation and accessory type compounds. Colour spot tests done on thalli and microchemical methods such as TLC coupled with HPLC, GC and MS are also routinely used in obtaining taxonomical details.