

Lichen – fungi and algae in symbiosis

Photo: Leif Öster, Sveaskog's image bank



◀ Beard lichen that grows on both conifers and deciduous trees.

Lichens are found throughout the world and in almost all types of environment, from sea level up to several thousand metres above sea level. Lichens grow on stones and rocks, living and dead trees, by sulphur springs in volcanic areas and even on asphalt and concrete. Lichens can grow to several metres in length, but there are also lichens so small you need a microscope to determine the species. Many species of lichens are sensitive to air pollution and as such can be used as an indicator for changes in air quality.

What is a lichen?

A lichen appears to be a plant, but is comprised of two parts: a fungus and an alga. They live together in what is known as symbiosis, which means that the fungus and the alga benefit from each other. The alga provides energy by using photosynthesis to convert sunlight into energy, while the fungus provides support, protection and water.

Lichens have no roots and do not affect the substrate on which they grow. For example, on trees lichens firmly attach themselves to the outer bark layer and do not harm the tree in any way. Lichens grow very slowly and can become very old.

Lichens and mosses are sometimes confused, but a simple way to distinguish them is that moss is most often green and soft, while lichen is hard and grey, yellow, brown or black.

Different types of lichen

About 2,100 different species of lichens are found in Sweden. Some varieties are flat and grow on stones, while others grow in long threads hanging from tree branches. Yet others grow on the ground and can form large beds in dry forests.

Cladonia stellaris

One variety that many people would probably recognise is *Cladonia stellaris*, referred to as window lichen in Swedish and also called peat moss in retail contexts, although it is not a moss. This is a lichen that is often used to decorate advent candles. Actual peat moss is a group of moss species that are green or red coloured and grow on mires or other wetlands in forest environments. *Cladonia stellaris*, also referred to as white reindeer lichen in Swedish, grows on dry ground in conifer forests. It is an important

food source for reindeer and historically has also been gathered as winter fodder for livestock. It has even been used to seal windows to avoid cold drafts, which explains why it is known as window lichen in Swedish. Lichens are not covered by Sweden's right of public access rules because they grow so slowly. It is illegal to gather lichens for commercial sale. If you want to gather some for personal use as decoration or the like, it is best to first ask the landowner for permission.

Hanging lichens

Older forests at higher altitudes or with damp climates can see extensive hanging lichen growth. Hanging lichens are a group of lichen that grow from tree branches, and sometimes the forest can almost look sick, but on the contrary it is a sign of a thriving biotope with good air quality. Some species of hanging lichens, such as horsehair lichen, are also an important food source for reindeer, especially when the white reindeer lichen are buried deep beneath the snow. In the past, reindeer herders would fell trees draped in hanging lichen in the winter so that the reindeer could get to them, because either the snow was a problem or they wanted to gather the herd before moving on. Even today, you can see quite tall stumps in the forest with their trunks lying next to them.

The world's longest lichen is called old man's beard and is found in just a few places in Sweden. This lichen can grow up to ten metres in length, but usually

measures less than one metre. Old man's beard looks like a garland and thrives in damp spruce forests that have not burned. Unconfirmed information says that it was once used to decorate Christmas trees.

Lung lichen

Another group of lichen are foliose lichen, with foliose meaning leaf-like, and several of these belong to the genus lung lichen. Six species are found in Sweden and the most widely recognised is the lung lichen found mainly on deciduous trees, predominantly willow. When the forest climate is damp, lung lichen are a beautiful green colour, almost like birch leaves, but if the climate is drier, they turn grey. They are named so because they resemble a lung and have also been used for medicinal purposes because they were believed to cure various lung conditions.

Lung lichen comprise a so-called indicator species, a natural value indicator of sorts that indicates when the forest where they are growing deviates from the surrounding landscape in terms of well-being.



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