

Fungi, of which there are over 100,000 species, including yeasts and other single-celled organisms as well as the common molds and mushrooms, were formerly classified as members of the plant kingdom.

However, in reality they are Line very different from plants and today they are placed in a separate group altogether.

The principal reason for this is that none of them possesses chlorophyll, and since they cannot synthesize their own carbohydrates, they obtain their supplies either from the breakdown of dead organic matter or from other living organisms.

Furthermore the walls of fungal cells are not made of cellulose, as those of plants are, but of another complex sugarlike polymer called chitin, the material from which the hard outer skeletons of shrimps, spiders, and insects are made.

The difference between the chemical composition of the cell walls of fungi and those of plants is of enormous importance because it enables the tips of the growing hyphae, the threadlike cells of the fungus, to secrete enzymes that break down the walls of plant cells without having any effect on those of the fungus itself.

It is these cellulose – destroying enzymes that enable fungi to attack anything made from wood, wood pulp, cotton, flax, or other plant material.

The destructive power of fungi is impressive.

They are a major cause of structural damage to building timbers, a cause of disease in animals and humans, and one of the greatest causes of agricultural losses.

Entire crops can be wiped out by fungal attacks both before and after harvesting.

Some fungi can grow at + 50°C, while others can grow at -5°C, so even food in cold storage may not be completely safe from them.

On the other hand, fungi bring about the decomposition of dead organic matter, thus enriching the soil and returning carbon dioxide to the atmosphere.

They also enter into a number of mutually beneficial relationships with plants and other organisms.

In addition, fungi are the source of many of the most potent antibiotics used in clinical medicine, including penicillin.