



## Editorial on Fungi and its Importance

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Fungi are a member of eukaryotic organisms that contain microorganisms such as yeasts and moulds, rusts, smuts, mildews, moulds, and mushrooms, among others. The primordial group of microscopic fungi known as the cryptomycota differs greatly from the typical body plan of other fungi in that their cell walls lack the hard polymer known as chitin. The presence of chitin in the cell walls of fungi distinguishes them from plants, bacteria, and some protists. Fungi are heterotrophs, meaning they get their nourishment by absorbing dissolved molecules, which they do by secreting digestive enzymes into their surroundings. Fungi are among the most extensively dispersed creatures on the planet, and they play an important role in both the environment and medicine. Many fungi live free in the soil or water, while others have parasitic or symbiotic interactions with plants or animals. Fungi are abundant in the soil and air, as well as in lakes, rivers, and seas, on and within plants and animals, in food and clothing, and in the human body. Fungi play an important part in the breakdown of organic materials and in the cycling and exchange of nutrients in the environment. Fungi, in collaboration with bacteria, break down organic matter and release carbon, oxygen, nitrogen, and phosphorus into the soil and atmosphere. Fungi have long been utilised as a direct source of human food, in the form of mushrooms and truffles, as a leavening agent for bread, and in the fermentation of a variety of foods, including wine, beer, and soy sauce. Because of their large size, mushrooms are easily observed in fields and forests, and so were the only fungi

known prior to the discovery of the microscope. The fruiting body, also known as the sporophore, is the most visible component of a fungus. Sporophores come in a variety of sizes, shapes, colours, and lifespans. Fungi may be found in all temperate and tropical parts of the planet, as long as there is enough moisture for them to grow. A few kinds of fungi thrive in the Arctic and Antarctic regions, although they are uncommon and are more commonly found in lichens, which are algae in symbiosis. Fungi are also employed to control weeds, plant diseases, and insect pests as biological pesticides. Mycotoxins, such as alkaloids and polyketides, are produced by many species and are poisonous to animals, including humans. Fungi have the ability to degrade man-made materials and structures, as well as become important diseases in humans and other animals. The spores are disseminated by a number of passive and active methods; once they find a suitable substrate, they germinate and generate hyphae that expand, branch frequently, and eventually become the mycelium of the new individual. Some fungi, such as yeasts, do not establish a mycelium and instead grow as single cells that proliferate through budding or, in some cases, fission. Food is secured by enzymes produced into the surface on which fungi grow; the enzymes breakdown the food, which is subsequently absorbed straight through the hyphal walls. Food must be dissolved in water to reach the hyphae, and a fungus' complete mycelial surface can absorb things dissolved in water. This phenomenon is demonstrated by the rotting of fruits in storage, such as peaches and citrus fruits, in which the diseased sections are softened by the action of fungal enzymes.

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