

Diversity of Life 2

11.1 Fungi

11.2 [Animals Part 1](#)

11.3 [Animals Part 2](#)

11.4 [Animals Part 3](#)

11.5 [Viruses and Prions](#)

11.6 [Life is Interconnected](#)



11.1 Fungi

When you keep a loaf of bread too long, you often end up with some fuzzy stuff called mold. Mold is a fungus, a living organism that belongs to the group Fungi. And it is doing what you once meant to do—it is eating your food!

Fungi were once grouped with plants because of their stationary way of life, but they are actually more closely related to animals. Like animals, fungi are heterotrophs that obtain food from other organisms. Fungi release digestive enzymes over organic matter and then absorb the nutrients. This distinguishes them from animals, which digest food inside their bodies. Many fungi are decomposers that obtain the bulk of their nutrients from dead organic material, as the fungus in Figure 11.1 is doing. Fungi, along with bacteria, are the most important decomposers in terrestrial ecosystems.

Figure 11.1

Many fungi are decomposers and obtain their nutrients from dead organic material. This fungus to the left is growing in and on dead wood and obtaining nutrients from it. The colorful and nutritious mushrooms seen on the table are being prepared for sale. All mushrooms you can see above the surface are reproductive structures.



While animals digest their food within their bodies, fungi digest their food outside their bodies.



Photo Credit: Nicole Wolf



Some fungi, such as yeast, are single-celled organisms, but most fungi are multicellular. Multicellular fungi are composed of bunches of small threadlike filaments. Fungi may reproduce either sexually or asexually; most species actually use both strategies at some point in their life cycles.

Reproduction occurs through the formation of spores, tiny reproductive bodies that remain in a dormant state until conditions are favorable for growth. Fungal spores spread far and wide mostly by floating through air or water—this explains why mold finds your leftovers no matter where you hide them. Mushrooms are the spore-producing structures of certain fungi. Notice that what we think of as a “mushroom” is only a small part of the entire organism. Most of the fungus actually lives underground, as you can see from the illustration in Figure 11.2.

Fungi are essential to the survival and growth of many, probably most, plants. This is because in most plant species, the roots form close associations with fungi. These associations, called *mycorrhizae* (“my-kuh-RYE-zuh”), benefit both fungus and plant. The fungus receives nutrients from the plant while helping the roots absorb water and minerals from the soil. Mycorrhizae are shown in Figure 11.3.

Figure 11.3 Mycorrhizae are close associations between fungi and the roots of plants. This photo shows a fungus (white) encasing the roots (brown). This association is beneficial to both species.



Figure 11.2

Mushrooms are spore-producing structures in certain fungi. Most of the organism actually lives underground.



Fungi important to humans include yeast, which is used in baking and brewing, and edible mushrooms. Fungi are also used to make blue cheeses such as Roquefort and Gorgonzola (the blue stuff is actually zillions of tiny fungal spores—enjoy!). Penicillin, the first antibiotic, was originally found in a fungus. Finally, human fungal diseases include yeast infections, ringworm, and athlete’s foot.

Finally, did you know that the living organism with the largest overall size in the world is a fungus? The heaviest, most *massive* organism is the aspen described in the previous chapter, but in terms of overall size, a fungus wins!

It is an underground honey mushroom in Oregon that measures 5.6 kilometers (3.5 miles) across. The fungus covers more than 2200 acres! This honey mushroom was discovered when scientists were trying to figure out why large groves of trees were dying. The answer? The fungus was eating them.

READING CHECK

If fungi can’t move around the way an animal can, how do they find new sources of food?

CHECK YOUR ANSWER

Fungi release large numbers of spores, some of which may settle on a new food source and begin to grow there.



To learn more about fungi scan or click the QR code to visit

<https://www.livescience.com/53618-fungus.html>

