

Emily Sexson -Education Specialist – Zoo to You – 08/02/17

No matter if it's photographing the animals, leading camps, or giving tours, a real perk to my job is that I get to walk around the zoo almost every single day. I love spending time outdoors and getting to observe the animals, as well as visitors to the zoo, enjoying the park. Of course, I enjoy watching the animals from all over the world that live here, but seeing native animals and plants growing in the park is also a real joy of mine. Nature always seems to provide something new to see every time I walk through the zoo, and lately, I've been observing a great variety of mushrooms.

Just the word fungus makes most people wrinkle their nose and take a step back, but with an estimated 5.1 million species of fungus out there, we can't possibly judge them all the same. In fact, we need fungi! Fungi are eukaryotic organisms, meaning that they have cells that have a nucleus and other organelles within membranes. This separates fungus from bacteria, a prokaryotic cell that lacks a nucleus bound membrane. Is your nose still wrinkled? Hang in there!

Fungi play a very important role in our ecosystems. Fungi are not plants or animals; they belong to their own kingdom. One of the things that separate fungi from plants and bacteria is the presence of chitin in their cells. Chitin provides structure to cells and is similar to the protein keratin, which is what our hair and fingernails are made from. Fungi do not use photosynthesis; instead, they secrete digestive enzymes to break down food in their environment and absorb the dissolved molecules. This is why fungi are so important; they are decomposers!

The two most recognized forms of fungi are mold and mushrooms. When you see mold starting to form, it's usually a sign that whatever it is growing on is aging. Mold most commonly grows on organic items such as food and in our homes; this is where we typically see it the most. Mold needs nutrients and water to grow, so an overripe piece of fruit or vegetable is a great place for mold. Mold's purpose is to decompose this material and make nutrients available not only for the mold but for the surrounding environment.

Mushrooms are the part of fungi that I find most fascinating, and definitely what I see most commonly. Anywhere there is organic matter there is an opportunity for mushrooms to sprout. Mushrooms are the spore-bearing, fruiting body part of a fungus, or the part of the fungus that grows in order for the fungus to release spores and reproduce. Because fungi love warm moist places, a nice summer rain is a great opportunity for spores to land and grow. Mushrooms grow in a huge variety of shapes, colors, smells, and textures. Just like mold, this fungus plays the role of a decomposer. The most common mushroom humans consume is *Agaricus bisporus* more commonly known as Portobello. Portobello begin as small white, button shaped mushrooms. If you have eaten anything with mushrooms in it or on it, more than likely, it was this type. While this mushroom is native to the grasslands of North America, I do not recommend consuming any fungus you find on your own unless you know exactly what type it is.

Many fungi can be extremely poisonous. Mold is typically a sign that a food item is past its prime. However, it is the mold itself that will make you sick if you consume it. Mold spores are invisible to the eye; simply removing the piece that has the mold doesn't mean you're safe to consume the rest of the item. While many mushrooms growing in our yards may look similar to what we see in the grocery store, some can be so toxic they can be deadly. Just like with anything in nature, if you do not know exactly what you are dealing with, it is best to leave it alone. If you have toxic fungus growing in your yard or home, research the appropriate way to remove it.

While this information may not have won you over completely to the fungi side, imagine what our world would look like without fungi. Yeast is a fungus that we use to make bread as well as many other foods and certain molds create the unique flavor in some of the world's favorite cheeses. Imagine if every leaf that fell, every log or tree branch, every blade of mowed grass simply stayed around? Every piece of fruit that fell from a tree or half eaten dinner never went away? What about animals that have died? Decomposers take care of all these things. We can be thankful we have fungus among us!