How does surface temperature change the species richness of mushrooms?

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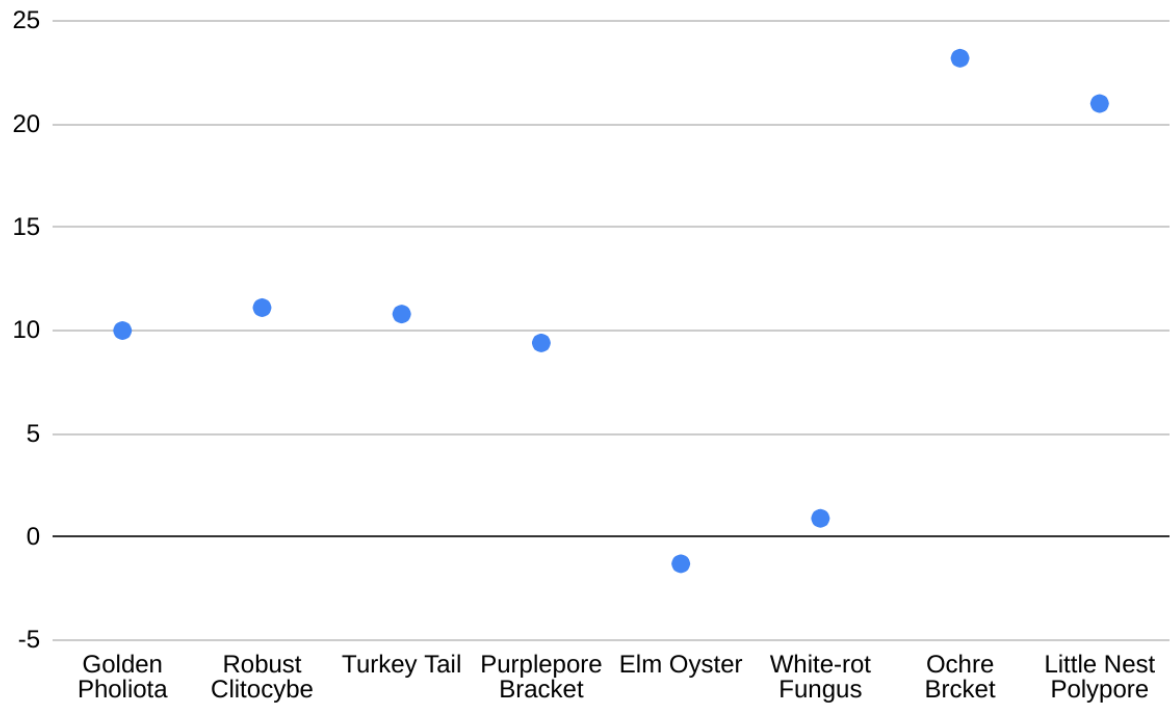
Main ways to identify mushrooms would be the size, color, and shape of the stem and the cap. Also knowing if the underside has pores, teeth, or gills. If it has a veil or not. Both the color of the mushroom and its flesh changes color after it's bruised can also be important. It is important to take note of the location. Some grow with specific trees, on decaying logs, and on living trees. Certain mushrooms have a specific odor. They can even change colors when certain chemicals come into contact with the mushroom surface, flesh, and/or spores (Brown, 2021). Mushrooms ideally need dark, wet, cool, and a substratum environment. The range of temperature that mushrooms can grow in is around 40-90 degrees fahrenheit, the ideal being around 50-70 degrees fahrenheit. A moist environment is crucial to mushroom growth. Since mushrooms can not photosynthesize, they often grow on other organisms, dead or alive, to obtain the nutrients they need to survive (Longo, 2020). Surface temperature is the temperature found at the earth's surface, i.e the temperature of a decaying log with mushrooms growing on it. Mushrooms prefer a surface temperature around 49-54 degrees fahrenheit.

The purpose of this project was to find a better environment for mushrooms to grow in and how too hot can stunt the spread of mushrooms, this also allows us to see the effects of climate change.

I used an infrared thermometer to obtain the surface temperature of the area around the mushrooms.

Based on the data I have collected, I can conclude that extreme hot and cold temperatures can stunt the spread of mushroom species while mediate temperatures do not.



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By testing the surface temperatures around different species of mushrooms, I found that mild temperatures produce the most mushrooms. Mushrooms do prefer around 49-54 degrees fahrenheit. And they prefer an air temperature of around 50-70 degrees. (Brown, 2020)

Golden Pholiota	10
Robust Clitocybe	11.11
Turkey Tail	10.8
Purplepore Bracket	9.4
Elm Oyster	-1.3
White-rot Fungus	0.9
Ochre Brcket	23.2
Little Nest Polypore	21

I found that in moderate temperatures, there were more species present rather than extreme temperatures. My hypothesis did not match these results. I found that in moderate temperatures, there were more species present rather than extreme temperatures. My hypothesis did not match these results.

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1.https://www.canr.msu.edu/news/identifying_mushrooms_there_is_more_to_it_than_you_might_realize
Diane Brown, Michigan State University Extension. (2021, March 9). Identifying mushrooms:
2.https://www.worldatlas.com/articles/where-do-mushrooms-grow.html Longo, S. (2020, June 11). Where Do Mushrooms Grow? WorldAtlas.