Mold is something that we often take for granted, as something that makes us have to throw away or the cheese smell bad. But what is mold? What makes it grow? Mold grows best. The faster the mold grows, the quicker they can sell their product and make money.

We are going to perform a mold bread experiment to grow our own mold and find out whether mold grows fastest at a certain temperature. We will be testing hot, cold and warm environments. You can then plot this information onto a graph and begin to explore your results. You can plot variables against temperature to see which affects the rate at which mold grows. Maybe you could keep the temperature the same for all of the samples but use different types of bread.

Could you replicate the graph below or is your graph different? We have done this, but will not share our results. You could try adding moisture to the slices or putting different amounts of sugar or lemon juice onto the slices. As long as you only vary one thing at a time, you can make some interesting scientific discoveries.

In the Mold Bread Experiment we are trying to prove that; mold does indeed grow faster at higher temperatures. For companies using mold to make food or medicine they need to know at which temperature moldy food must be thrown away and this costs restaurants and manufacturers a lot of money.

Temperature is not the only thing that affects the rate of mold growth so feel free to try and find out more about this interesting organism.

Performing the Mold Bread Experiment

1. Cut the bread into 10 x 10 squares using the chopping board and knife.
2. Average the results for sample types A, B and C.
3. Every 24 hours, preferably at exactly the same time every day, using the plastic grid, count the number of square centimeters of mold on each slice of bread. If the mold covers more than half a square, count it as 1 cm, if less than half a square, count as 0.
4. You should repeat these counting processes for 10 days or until there are no more moldy bread samples.

Hypothesis

Moldy food must be thrown away or the cheese smell bad.

What Makes Mold Grow?

Mold is not a plant but a fungus like mushrooms and toadstools. It grows on food and other organic matter, breaking it down into slime and extracting nutrients for growth. Mold is one of nature's cleaners. It breaks down dead organic material and recycles the nutrients back into the soil. It is essential in nearly every ecosystem in the world.

Alexander Fleming discovered that a common type of mold fungi kills germs. From this, he made a medicine called penicillin which has saved millions of lives over the last 80 years. Many other life-saving drugs are made from chemicals obtained from mold.

Mold is something that we often take for granted, as something that makes us have to throw away or the cheese smell bad. But what is mold? What makes it grow? Mold grows best. The faster the mold grows, the quicker they can sell their product and make money.

What You Need for the Mold Bread Experiment

- 1 piece of film or clear plastic with a 10x10 cm grid drawn onto it
- 15 sealable sandwich bags
- 15 slices of bread. Any sort will do but it is perfectly fine to use cheap white sliced bread
- Mold Spores - if you can't get these from your school don't worry. There are mold spores everywhere around us in the air which will eventually grow on the bread but your experiment will be more accurate if you can use them. You could get some from the science lab at your school.
- Sticky labels
- Marker Pen
- Q-Tip
- Gloves
- Mask
- Chopping board
- Microscope (optional)

Links

[1] https://explorable.com/research-hypothesis
[2] https://explorable.com/statistically-significant-results

Further Experiments

- Perform the Mold Bread Experiment can use the same type.
- Is the Graph Correct?
- What is Mold?
- Facts About Mold
- Results
- Why are the Results Important?
- Hypothesis
- Links