

Hilroy



72 Pages
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EXERCISE BOOK
CAHIER D'EXERCICES

NAME/NOM _____

SUBJECT/MATIÈRE _____

REPRODUCED IN SPAIN BY IMPRESA NACIONAL S
REPRODUCE AU CANADA PAR LES IMPRIMERIES

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Mm

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Ww

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Background
Research

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Proposal

- Experimental project

Topic: Biology

Research Question: Which soap fights bacteria the best?

Testing: Soaps ability of fighting bacteria

Purpose: To determine which mechanism is most effective

Hypothesis: The bread with No Soap will have the most mold and the bread with No Touch will have the least mold.

Background Research

Mold: Mold is a type of fungus and usually grows as tiny threads called hyphae. These threads form a fuzzy patch that you might see on old food or damp surfaces. Molds are also usually made out of cells.

Molds are a big group of fungi. When their hyphae grow, they can make things look discolored and fuzzy. This network of branching threads is called a mycelium. Each mycelium is like a single living thing.

Mold grows from tiny seeds called spores. They are so tiny that they float all around us. When spores land on a damp surface with food, then they can start to grow.

Soap: Soap is a special cleaning product that helps us wash away dirt, oil, and germs. It comes in many forms, like solid bars, liquids, or even foam. Soap is made by mixing fats or oils with a strong substance called lye. This process is called saponification, and it creates the soap we use today.

Bread is a common food which is usually baked. It is basically made out of flour and water. It also has salt and yeast. It is usually cooked in an oven.

There are many kinds of bread. You can toast bread or you can use it in a sandwich. You can also use it to make pizza. There are two main types of bread, leavened bread and unleavened bread.

Materials

For this experiment, you will need these following materials:

- 7 slices of whitebread
- a sink (to wash your hands)
- an antibacterial soap
- a regular soap
- a hand sanitizer
- a dish washing soap
- grass outside (to get bacteria)
- a tong
- 7 ziplocks
- a warm, dark, and moist place
- a marker (to label ziplock)

Welcome home
W2!

Eid

Hypothesis

Antibacteria means more mold
I expect the following results.

- 1. No Soap (dirty hands) → most mold
- 2. No Touch (control) → least mold
- 3. All other samples will fall in between these two
- 4. I expect the "Dirty hands (Control and no touch)" sample to have more mold than the other samples.

5. From the soap samples (antibacterial, dishwashing, and regular), I expect the antibacterial soap to have the least mold and the dishwashing soap to have the most mold.

Hypothesis

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Mold Tracker

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Conclusion

5. We expect for the hand sanitizer to have more mo than the antibacterial soap but less than the regular soap.

Procedure

Repeated steps are 1 and 3

1. Touch your hands on the grass outside for bacteria
2. Touch your hands on a bread
3. Put the bread in a ziplock, and seal it properly
4. Label ziplock "Dirty hands"
5. Do repeated steps and wash your hands with water only, and label ziplock "Water only"
6. Do repeated steps and wash your hands with an antibacterial soap, and label ziplock "Antibacterial soap"
7. Do repeated steps and wash your hands with a regular soap, and label ziplock "Regular soap"

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8. Do repeated steps and wash your hands with a dishwashing soap, and label ziplock "Dishwashing soap"
9. Do repeated steps and pat on hand sanitizer and label bread "Hand sanitizer"
10. Pick up a bread with a bag and put it in a ziplock, and label it "counter slice"
11. Put samples in a dark, warm, and moist area.

Observation

no bread got mold
we observed all samples for three weeks and still no mold

Reasons:

- We used the bread bought from the big chain store. This bread has preservatives which prevents mold growth.
- The outdoor bacteria doesn't survive well indoors and we need to find bacteria inside the house for our test.

To help mold growth we...

- added extra moisture by spraying water equally to all bread loafs
- put the samples in a warmer location with a humidifier to increase the amount of moisture and heat

There were no improvement after the steps above.

Experiment redo:

- We redid the experiment but just...
• Bought fresh bread without preservatives
- Used indoor places where there are already bacteria like...

- under the kitchen sink
- under kitchen cabinets
- door knobs, light switches etc.
- places which typically don't get a wipe/cleaning.

Observation:

We were in day 7 and we started to see mold on the "Dirty hands" sample and the "Water only" sample. There were no change on the other samples yet. The "dirty hands" sample had the most mold.

Variables

Control Variable: untouched bread

Dependent Variable: how much mold on each bread slice

Independent Variable: different hand cleaning products (antibacterial soap, regular soap, dishwashing soap, hand sanitizer, water, and none)

Mold Tracker

	Dirty hands	Water only
Day 1-5	no mold	no mold
Day 6	1 dot	no mold
Day 7	2 dots	small area
Day 8	5 dots	small area
Day 9	A lot of dots	big area
Day 10	A lot of dots	big area

The other samples had no mold/change.

Mold Tracker
Results
Conclusion

Results

• The experiment we first did didn't work, but the experiment we redid was successful

• All the soap remove germs and washing your hands with soap remove more germs compared to not washing your hands at all or washing your hands with water only

• We learnt the following through research and experiment

• store breads/food have preservatives to increase the

life of products and to reduce mold growth

• outdoor bacteria is different

Results

Conclusion

from indoor bacteria
mold doesn't grow easily
winter conditions

conclusion

The results prove the hypothesis
and if we wait longer, we would
see the mold on all of the
samples. The experiment is important
because it tells us how bacteria
can be removed by using a good
soap and it reminds us to wash our
hands properly.