

BACTERIA IN MAKEUP BRUSHES

part of **GreenGate Methodological Toolkit₂**

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Bacteria in makeup brushes

INTRO

Think your makeup brushes are clean? Think again! In this eye-opening experiment, we're diving into the hidden world of bacteria living on your everyday beauty tools. Using lab techniques, we'll test makeup brushes for germs and discover just how much bacteria builds up over time.

Aim: Observe (naked eye or with a microscope) the colonies of bacteria present in used face brushes and sponges.

Time: ▶ 45 minutes for the experiment
▶ + a few days for bacteria growth

Place: Indoors

Tools: ▶ Small plastic or glass petri dishes
▶ Nutrient agar - agar culture medium (self-made or ordered from an online shop)
▶ Used face brushes and sponges
▶ Latex gloves
▶ Alcohol (to sterilise the petri dishes)
▶ Microscope (not necessary if doing only naked eye observation)
▶ Phone or tablet for researching bacteria types (optional)

PREPARATION

Ask the participants to bring used makeup sponges or brushes for face and makeup. Divide them into pairs or small groups so that each group has at least 1-2 brushes/sponges.

Together prepare a nutrient agar jelly. If bought online, follow the instructions on the package of the ordered nutrient agar.

It is also possible to make a self-made nutrient agar (this is a homemade recipe rather than a professional setup):

For 1 litre of nutrient agar jelly, you will need:

- 1 litre of boiled or distilled water

- ca. 22 g or 2 stock cubes
- 10 g agar (agar powder is used as a natural thickener and gelling agent, it can be purchased from online stores or some shops).

Process:

1. Bring 1 liter of water / distilled water to a boil.
2. Add the stock cubes and continue boiling until they are fully dissolved.
3. Reduce the heat (do not boil) and add the agar. Stir continuously until the agar is fully dissolved, making sure no lumps remain.
4. Allow the solution to cool to about 50 °C, then pour into sterilized Petri dishes. Let it set until the jelly has completely solidified.

MOTIVTION

Ask participants how often they clean the tools they use on their face. Ask them to guess how many colonies of bacteria will show up in the experiment, write the guesses on the board.

CORE

Use sterile gloves throughout the procedure.

1. Press the sponge or brush into the prepared jelly several times.
2. Immediately seal and label (name, date) the petri dish.
3. Place the petri dishes in a warm (more than 20°C, ideally 30°C - but not directly in the sun), sterile environment.
4. Prepare one control sample: a Petri dish containing only nutrient agar jelly, without touching it with the brush. Label it and store it alongside the other samples.
5. Clean the sponge or brush thoroughly from agar solution residues after pressing it in.
6. Wait at least 48 hours, then observe (naked eye or/and with a microscope) and record the number of bacterial colonies.

V ideálnom prípade pozorovanie počas niekoľkých dní.

CONCLUSION

Compare the amount and type of bacteria in the petri dishes. What bacteria are likely to be present?

It is possible to research on the internet which type of bacteria is present, alternatively use GoogleLens for guess-identification.

After the experiment, make a joint summary of the results and discuss what options exist to minimize the amount of bacteria.



Visit this article to get more information: <https://green-gate.eu/blog/good-to-know/how-to-take-care-of-make-up-tools/>

IMPORTANT! SAFELY DISPOSE OF THE JELLY:

1. Sterilise the contents:
 - ▶ Put on latex gloves.
 - ▶ Cover the agar in the dish with 70% alcohol.
 - ▶ Close the dish with its lid and leave it for at least 30 minutes.
2. Dispose:
 - ▶ Option A - dispose of everything: Place the sealed dish into a plastic bag or sealable container. Dispose of it in mixed municipal waste.
 - ▶ Option B - keep the petri dishes: Carefully tip the agar jelly into a plastic bag or sealable container. Dispose of it in mixed municipal waste.
3. Clean the petri dishes (only if you chose option B in the previous step):
 - ▶ Wash with hot water and detergent.
 - ▶ Rinse with alcohol.
 - ▶ If it's a glass dish, ideally sterilise further by placing it in a hot oven or by boiling for 15–30 minutes.

And / or always follow your organisation's internal rules for handling biological material as well.

Appendix Process and results

