

Effectiveness of biobased cleaners

Standard Operating Procedure

Laboratory: Biotech/Bioresearch/Food Science
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Location: Food Science Lab
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General: Microbes play an integral role in lab safety and quality. The purpose of this protocol is to investigate the effectiveness of various types of hand cleaners that may have antimicrobial action.

Safety: Safety Glasses

Materials

<i>E. coli K12</i> starter plates (microbial culture)	filter paper
single hole punch	70% IPA
alcohol burner or Bunsen burner	inoculating loop
sterile petri dishes	sterile forceps
incubator	nutrient agar
sterile swabs	sharpie
bio-based cleaners	rulers

Procedure

1. Prepare nutrient agar plates per Nutrient Agar Preparation SOP
2. Sterilize single-hole punch by dipping in 70% alcohol, then running through the fame of alcohol burner or Bunsen burner.
3. Label petri dishes with names of cleaners to be tested.
4. With sterile hole-punch, punch out 4-5 discs from filter paper onto labeled sterile petri dishes.
5. Add 1 ml of bio-based cleaner over punched discs in appropriately labeled petri dishes and allow discs to soak 1 minute in cleaners.
6. Using sterilized forceps, remove discs from cleaners and place into newly labeled sterile petri dishes to dry. Make sure petri dishes containing the soaked discs are placed next to a lit alcohol or Bunsen burner when drying to create an updraft limiting aerial contamination.
7. While discs are drying, label the bottoms of 5 petri dishes with nutrient agar by dividing the base of the plate into 4 quadrants drawing a cross with a marker. Label quadrants 1-4 along the edge of the plate.
8. Next, label along the edge of the base of petri dishes with the type of cleaner, technicians' initials and date.
9. Flame an inoculating loop using an alcohol or Bunsen burner to sterilize. Select a colony from the *E. coli K12* starter plate to swab first test plate. Repeat this step until each test plate has been swabbed with *E. coli K12*.
10. Using sterile forceps, place the dry treated paper disc in the middle of each quadrant of the appropriately labeled plates. Flame forceps each time to prevent

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- cross-contamination.
11. Seal the edge of each petri dish with parafilm and place each petri dish upside down on shelf of incubator.
 12. Incubate plates for 24 hours at 37°C.
 13. After 24 hours of incubation, remove plates from incubator and measure the ring of inhibition of each trial.
 14. Record.