Surface Microbes

LaMotte

About BioPaddles®

BioPaddles® are flexible dual-agar paddles that contain microbe-specific media that is enclosed in a sterile vial.

BioPaddles replace Petri dishes – no need for inoculating loops or Bunsen burners – only a magnifier and a warm place are needed.

surface

noun \sər-fəs\: the upper or outer layer of an object

microbe

noun \mī krōb\: a microorganism

Microbes can grow on almost any surface

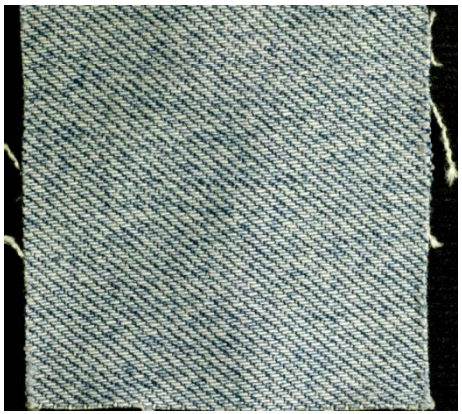
But they need moisture and a source of food.

Surface texture can be grouped into 4 categories:

POROUS	marked with pores, fissures, or cavities that allow liquids or solids to accumulate
TEXTURED	uneven and repetitive
ROUGH	marked with irregularities and projections
SMOOTH	free from irregularities, roughness, or projections

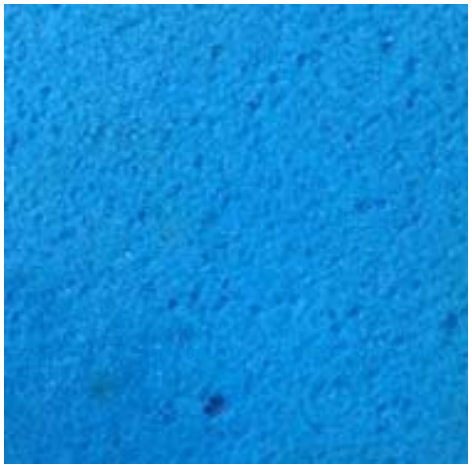
Surfaces … up close!

Smooth



Textured

Rough



Porous

Biofilms

Microbes stick to each other and the surface and form a biofilm.

Biofilms are difficult to remove.

Clean is IMPORTANT!

Cleanliness is an unnatural condition – because all surfaces are constantly being contaminated

Surface Activity Using BioPaddles

Student Groups Set Up Activity

- Review background materials
- Set up lab notebooks
- State hypothesis
- Define the experiment

The surface texture with the most surface area should be the best microbe trap.

Using TSA/RB BioPaddles®

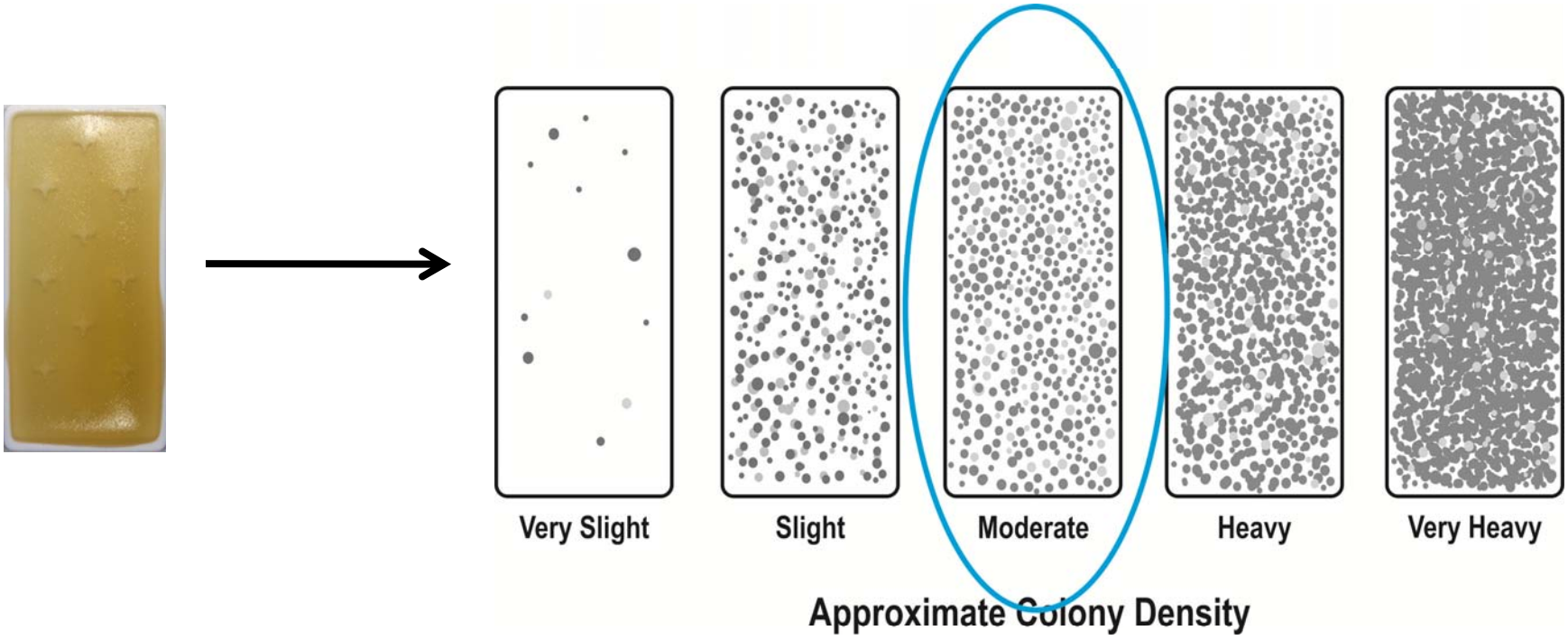
Using TSA/RB BioPaddles®

Taking a Contact Sample

1. Remove paddle from vial.
2. Gently make contact with surface for at least 15 seconds.
3. Replace paddle.
4. Incubate.

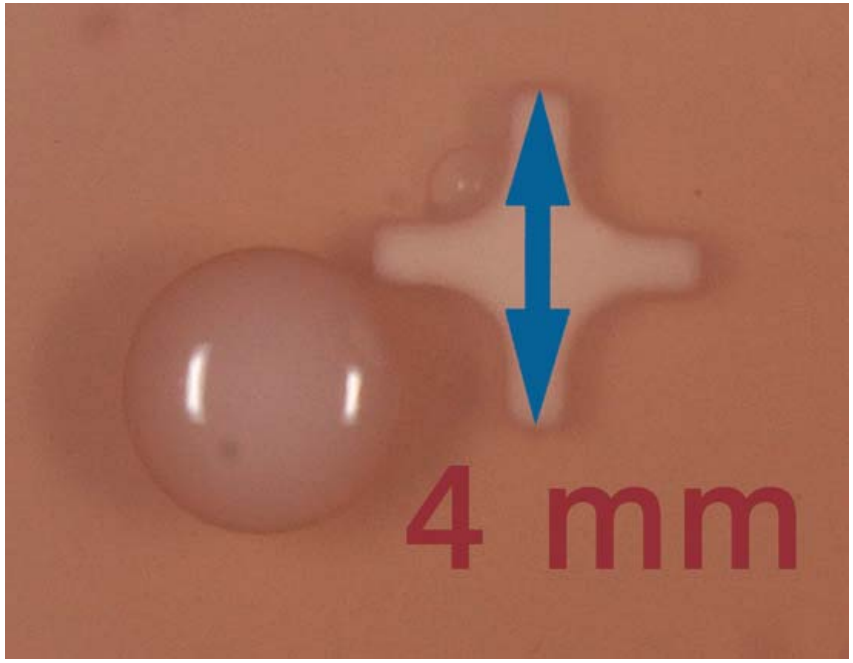
Counting Colonies

Using an Enumeration Panel



Estimating Colony Size

Each BioPaddle® has molded media attachment points that are 4mm in length (point-to-point). This feature provides a useful guide to estimating nearby colony size.



Cell Motility

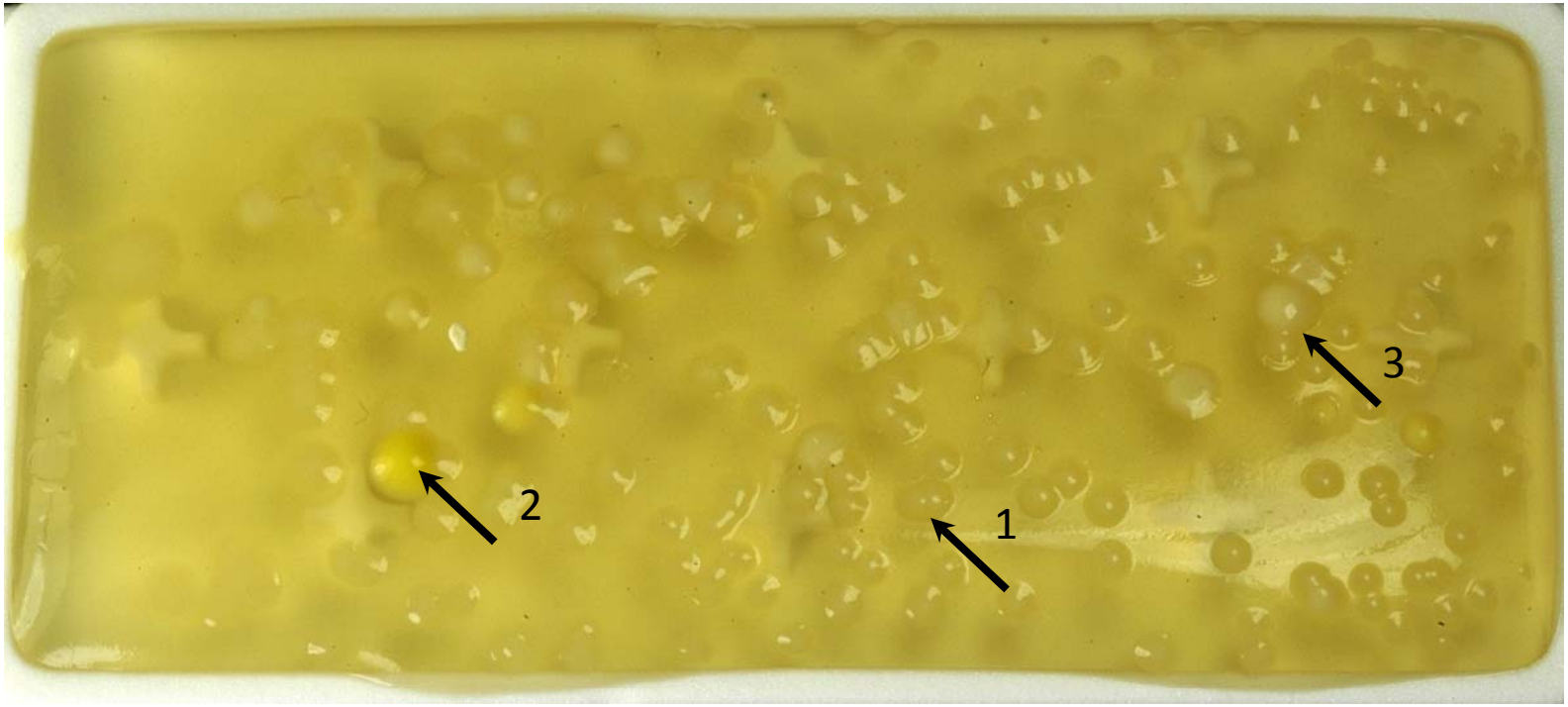
Motile Cells

Colony borders have rough edges

Non-Motile Cells

Colony borders have smooth edges

Surface Contact Example 1



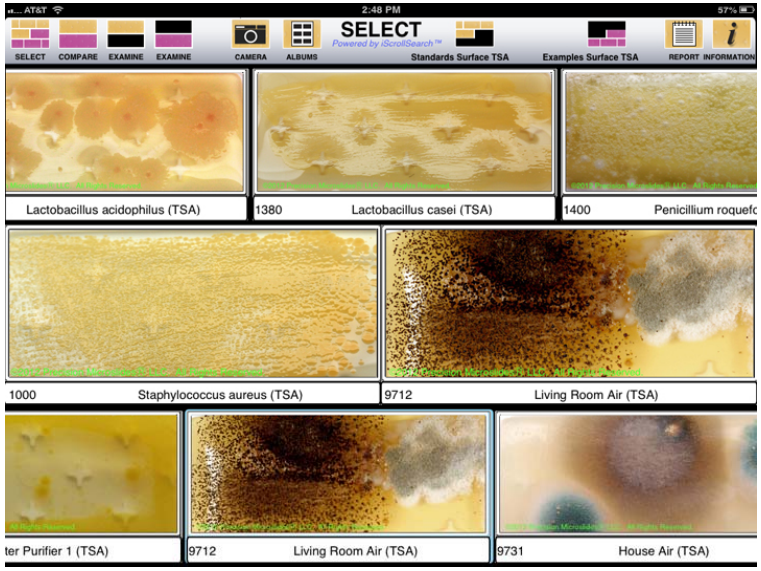
Damp Kitchen Sponge

1. *Pseudomonas* spp.
2. *Micrococcus* spp.
3. *Klebsiella* spp.

BioPaddles® Colony ID™ Lite App

- Presumptively identify microbe colonies
- Library of 80 standard images
- 5 microhabitats (AIR, WATER, SOIL, SURFACE, and FOOD)
- 9 paddle agar types
- Image series at colony and cell level.
- Resource materials

Available on the App Store



BioPaddles® Colony ID™ App

Includes all of the features of the Lite App PLUS…

Available on the App Store

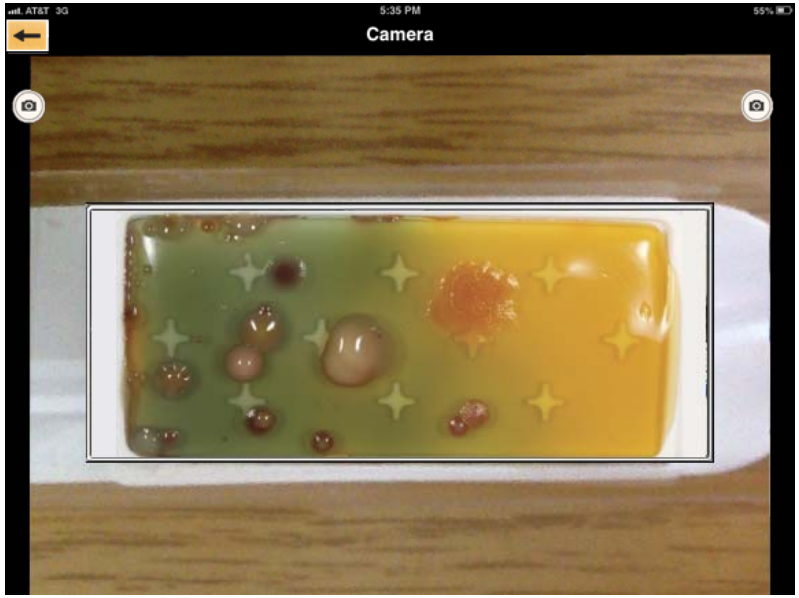
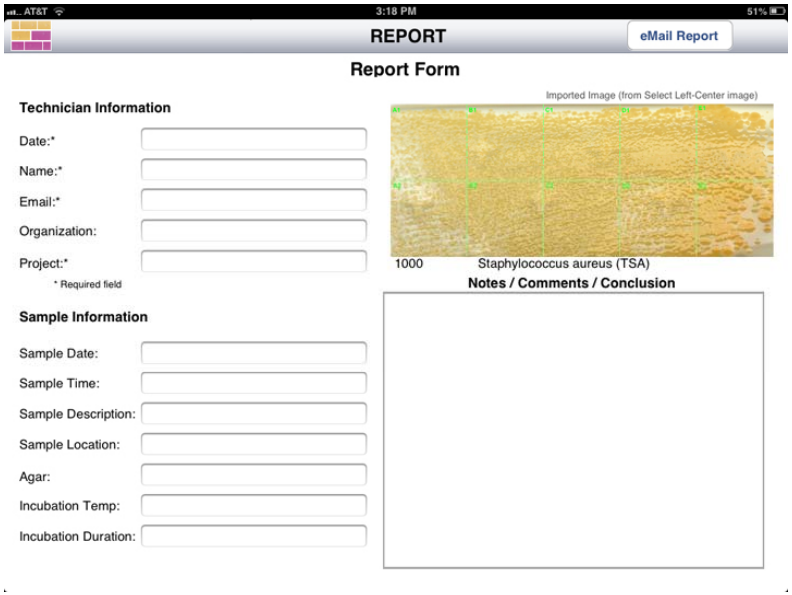


IMAGE CAPTURE



EMAILABLE REPORT

Other Surface Microbe Activities

ACTIVITY 2: **Identifying Surface Microbes**

ACTIVITY 3: **How Do Sanitizers Work on Surfaces?**

ACTIVITY 4: **Design a Sanitizing Protocol?**

ACTIVITY 5:
Antimicrobial Surfaces

Also Available:

Milk Microbe Hunter

NOT ALL MICROBES ARE BAD!!!

Is Pasteurized Milk Sterile?

What Do Milk, Cottage Cheese, and Yogurt Have in Common?

What are Probiotics?

Coming Soon!

Food Microbe Hunter

Microbe Race Engineering Activity

When Do Foods Spoil?

Does Pickling Prevent Food Spoilage?

Surface Microbe Hunter Code 5561

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