Bacteria in Yogurt Lab

Introduction

Some types of bacteria can ferment milk, producing lactic acid in the process. Yogurt is a product of fermentation – the anaerobic breakdown of carbohydrates by living cells, often with the production of heat and waste gases and a variety of end products. Yogurt is acidic and stays fresh longer than milk, and is also digested more easily. In this lab activity you will prepare a wet mount slide to examine the bacteria found within yogurt.

Like all organisms, bacteria are given scientific names. Rod shaped bacteria are called *bacilli*, spiral shaped bacteria are called *spirilla* or *spirochetes*, and spherical bacteria are called *cocci.*

Purpose

You will be identifying and describing one or two of the following bacteria: Streptococcus thermophilus (spiral chain), Lactobacillus bulgaricus, Lactobacillus acidophilus (rod), and Bifidobacteria. You will also be identifying the basic shape and arrangement of bacteria.

Materials

- Toothpick
- Dab of yogurt
- One each of a slide and a cover slip
- Drop of water
- Microscope
- Water dropper

Procedure

1. Place a drop of yogurt in the center of the slide using the toothpick.
2. Add a drop of water.
3. Add **one** drop of methylene blue.
4. Gently stir the mixture **using a different toothpick.**
5. Place a cover slip on top of the mixture.
6. Under low power, find a thin area of the yogurt mix and locate any dark blue stained areas. These small specks are bacteria.
7. Focus on medium and then on high power.
8. Sketch what the bacteria look like below. Make sure to include your magnification and which bacteria you are looking at.

9. Return to low power and repeat steps 6-8, looking for a different shaped bacteria; find at least one other bacterium. Sketch the bacteria on your question sheet and indicate the magnification.

Questions **Name: _____ Block: _____**

1. Bacteria are classified as follows:

Arrangement:		Shape:	
	paired = diplo		round = coccus
	chained = strepto		rod = bacillus
	clusters = staphylo		spiral = spirillus

Using this list, you can identify any bacteria you might find by identifying the arrangement and the shape. For example, a chain of rod bacteria would be streptobacillus. Draw examples of the bacteria listed below:

Streptococcus **Staphylococcus** **Diplobacillus**

What type of bacteria did you find in the yogurt? _____

2. The bacterium that is added to milk to make yogurt is considered to be "good" bacteria. However, there are many kinds of bacteria that can cause food to spoil. How do you think bacteria relate to spoiling?

3. List three ways that we help to keep food from going bad. How do you think each of these inhibit the growth of bacteria?

    1.

    2.

    3.

4. List 3 other ways that bacteria could help us.

    1.

    2.

    3.