

Food Contamination Experiment

Name : _____ Date : _____

"I have neither given nor received unauthorized aid on this test or assignment."

Purpose

The purpose of this experiment is compare the levels (qualitatively) of enteric Bacteria in various foods. Enterics are generally pathogenic, or at least opportunistically pathogenic, and often serve as markers for fecal contamination, for example in water testing kits.

Caution



The organisms we'll be seeing are common animal symbionts. *Most* are not deadly pathogens. However, they are present on these agar plates in huge numbers, and keep in mind that you will probably be seeing *E. coli*, *Salmonella*, *Shigella*, and a variety of other unfriendly species. As with any wild organisms, treat them with respect.

Materials

Inoculum : A sample of meat or other food

Media : MacConkey or EMB plate (1 per student)

Supplies : Disposable gloves

Sterile cotton swabs

Sterile single-edged razor blade (if you need to cut into your sample)

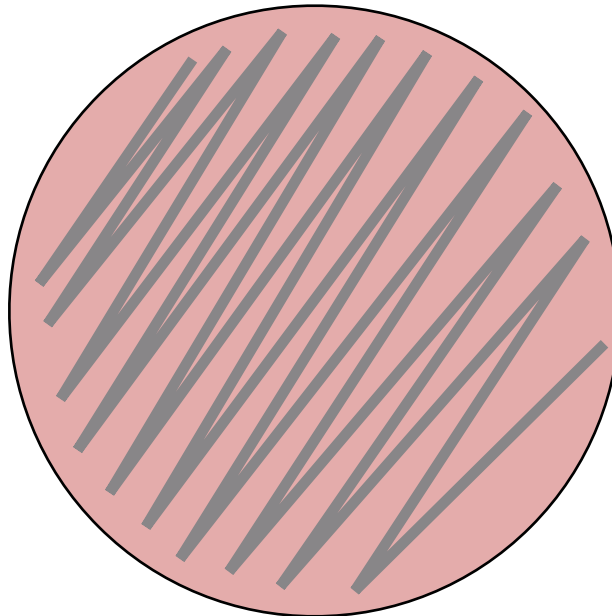
Bleach discard beakers and biohazard disposal bag

Procedure

Part 1 - Day 1

1. You will need to bring a meat or other food sample in to lab today. Make sure to bring it in a cooler or with an ice pack to keep it fresh.

2. Use a sterile swab to swab at 10cm (4 inch) swath across your sample. If you want to swab in inside of a tough sample (such as the inside of a steak), you will need to cut the sample open first with a sterile razor blade.
3. Making sure to use the same side of the swab that you swabbed your sample with, swab back and forth across the surface of an EMB or MacConkey plate. In order to be consistent between different people, go back and forth across the plate 20 times as you go across the plate, like this:



4. Use a sharpie to label your plate with your name and the date.
5. Incubate your plate at room temperature for 1-2 days. (The instructor will take these out of the incubator for you and put them in the fridge.)

Part 2 - Day 2

1. Identify the third-to-the-last colony on your plate, and use the streak lines to determine which streak line (1-20) this colony is on. This number represents a very crude estimate of the level of enteric contamination of your food. Write this number here:

2. We will make a list on the chalkboard of every students food sample and the level of contamination (streak line).

Questions

1. Which food sample was the most contaminated?
2. What kind of food was generally the most problematic?
3. How do you think cooking might affect these results?
4. What affect do you think food handling might have on these results?
5. If you were doing this experiment as a real scientific investigation, what would you need to change or add?