**How are pathogens detected in foods?**

**Materials:**

Gloves

10 g your food product(s)

10 g of the commercially available alternative

2 Liter of water

Ziploc Bags

Forceps or tongs

Water

90 mL sterile peptone water (PW)

Pipette

Pipette tips

Aerobic Plate Counts Petrifilms

E. coli Petrifilms

24 test tubes per sample to hold 10 mL each

**Procedure**

1. Put your gloves on and wear them for the entire lab. Do not touch your face, eyes, or mouth. Do not eat during this lab. Wash your hands thoroughly after the lab.
2. Label all test tubes and bags as illustrated such as A-1, etc. (see picture in Appendix 13.1)
3. Place 10 g samples of your food product in four different Ziploc – each labeled as “Food Item 1, 2, etc.” - bags using forceps or tongs.
4. Add 90mL of sterile peptone water (PW) to each sample bag and seal the bags.
5. Stomach the samples in the sealed bags manually, or use the stomacher. Manual stomaching is done by “squishing” the sample in the water and swirling gently. This creates the 4 rinsates for your food product.
6. Prepare 24 test tubes per sample with 9mL of peptone water. Change pipette tips.
7. Pipette 1 mL of the rinsate from sample “Food Item 1” into first test tube.
8. Mix for 30 seconds by drawing and emptying the rinsate into/out of the pipette.
9. Withdraw 1 mL from each rinsate + blank test tube and place into another blank. Repeat five more times to create a dilution of 10-6.
10. Transfer 1 mL of he sample to an E. coli Petrifilm and 1 mL of the sample to an Aerobic Petrifilm. Label them with the same label as the Ziploc containing the sample.
11. Change pipette tips.
12. Repeat for each “food item” rinsate.
13. You will have 8 Aerobic and 8 E. coli Petrifilms for each food item.
14. Incubate the films at room temperature:

* 24 hours for E. coli
* 48 hours for Aerobic

1. Look for colonies on the films. If any exist on your E. coli Petrifilm, the food product is contaminated with a strain of E. coli. If any exists on your Aerobic Petrifilm, your product contains another pathogen such as Salmonella.
2. Photograph your Petrifilms to include in your reports and explain the absence or presence of pathogens.