

## **Bacterial Examination of Food: Standard Plate Counts**

The presence of microbes in food may or may not be a disease issue. Bacteria could be present that will not cause disease or could be present as an intrinsic part of the food – think yogurt! However, high counts of bacteria in food could be problematic, in both the potential for disease and also for food spoilage. If high counts of bacteria are present in food in a manufacturing/production setting additional tests could be called for. This is especially true with foods where bacteria are not expected to be present and in foods that have been through a process like pasteurization.

Most foods are solid at least in some way, and so food must be re-suspended in water in order to perform a plate count. In addition, because most foods will not contain extremely high numbers of bacteria the dilution scheme is set up accordingly. Finally, because coliforms are indicators of possible contamination by intestinal pathogens, food samples are routinely tested for them.

Materials:

Sterile blender container

1mL pipettes

Sterile spatula and weigh boats

3 Eugon Agar pours

3 Sterile empty petri dishes

1 - 180 mL sterile water blank

1 - 99 mL sterile water blank

1 EMB plate

1. Using the best aseptic technique possible, weigh out 20g of food and transfer to the sterile blender container.
2. Add the 180mL of sterile water to the container and blend the food for 5 minutes.
3. Use the 99mL water blank for diluting, mix thoroughly, and then plate out the sample to the following dilutions: 1:100, 1:1000, 1:10,000.
4. Pour the Eugon pours into the plates.
5. From the food in the blender container, streak an EMB plate to look for coliforms.
6. Incubate plates at 35°C for 24 hours.
7. After incubation, evaluate plates. Count the colonies on the appropriate plate and report total #CFUs/mL. Look for presence of coliforms on the EMB plate.