

Food Microbiology Case Study

You are a technician working in a microbiology testing laboratory that processes many different types of food products. You have been given the task of preparing a *DRAFT* protocol or standard operating procedure (SOP) for a food item to include:

1. Transport (how the product should be packaged in the plant and sent to the lab for analyses)
2. Preparation or processing of the sample in the laboratory with the following information:
 - a. timeframe for sampling (how soon after arrival in the lab should it be processed?)
 - b. method to homogenize the food sample (ex. stomaching, blending, rinsing)
 - c. sample size and measurement (volume vs. weight)
 - d. choice of buffer
3. Dilution scheme (identify which dilutions should be used and why)
4. Identify which spoilage organisms should be evaluated
5. Identify which pathogenic organisms should be evaluated
6. Choice of media and/or technique (ex. direct plating or enrichment; molecular or immunological tests) for determining which spoilage and/or indicator organisms are present in the sample
7. Atmosphere and temperature for incubation of media
8. Reporting of results (ex. qualitative=presence/absence or quantitative= CFU/ml, CFU/g, etc.)

Assignments:

Group #1: Shell eggs; frozen chocolate ice cream with pieces of hazelnut

Group #2: Canned sardines in oil; orange marmalade

Group #3: Ground beef in a tray covered with plastic wrap; bottled water flavored with lemon

Group #4: Milk chocolate; fresh melon

Group #5: Strawberry yogurt; frozen cheese pizza

When this task is complete, the groups will present their findings in ~5 minutes to the entire class.

Have fun with this exercise!