BIOS242, Week 4-OL

Name:

Lab 4: Pasteurization and Sterilization

Learning Outcomes

- Explain the concept of food spoilage and shelf life.
- Explain the principle of pasteurization and sterilization.
- Analyze the parameters of High-Temperature-Time-Treatment (HTST) pasteurization.
- Perform canning as a method of sterilization.
- Identify how plastic and metal can be used as materials for packaging.

Introduction: Experiment with pasteurization and sterilization Virtual Simulation Lab
In the Pasteurization and Sterilization lab, you will help Adam, an organic farmer, to increase the shelf life of his peach juice. Together with Marie, a food scientist, you will learn the basics of food spoilage and shelf life by performing a series of spoilage detection experiments. Later, you will explore two types of heat treatment, pasteurization and sterilization, to eliminate the food spoilage in the peach juice. Finally, you will employ your knowledge to determine which type of packaging and heat treatment is suitable for Adam's peach juice. Will you be able to eliminate spoilage in Adam's peach juice?

Questions:

1. Purpose: Why is food safety important?

Food safety is important to avoid eating spoiled or contaminated food that can make us sick. It helps prevent food poisoning and harmful bacteria that could be dangerous. Storing food properly and learning about what we eat keeps us healthy and extends food freshness. We should always be mindful of what we put into our bodies.

2. What practices would you recommend to keep food safe at home?

- Store food correctly – Keep perishable foods in the fridge or freezer.
- Wash hands and surfaces
- Cook food to the right temperature – Use a food thermometer
- Keep raw and cooked foods separate – Store raw meats, poultry, and seafood away from ready-to-eat foods to avoid cross-contamination.
- Check expiration dates
- Store leftovers properly – Keep them in airtight containers to stay fresh.

3. What would you recommend for storage of milk at home?

I recommend transferring the milk to a glass container with a tight-fitting lid and labeling it with the expiration date. Store the milk on a shelf in the coldest part of the fridge, rather than on the door where the temperature tends to fluctuate.