The Energy Content of Food Laboratory: Felix Muhiga

Students' Guide

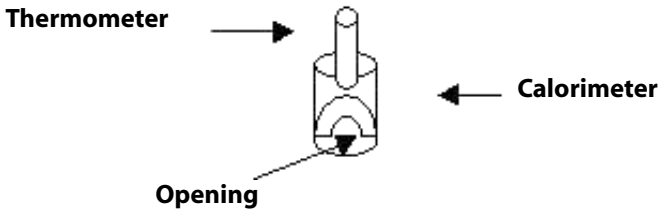
Goals

- To compare the food-group content of different foods
- To become aware of the differences between different things that we eat

The Laboratory

In this laboratory, you will do calorimetric measurements of burning food. You will relate the food-group composition of different foods to the energy they give off in combustion, and thus about the energy that the human body may use.

Materials for Each Group



- A calorimeter with a side opening and a thermometer on top
- A piece of wire
- Cork stopper to hold wire
- 4"x4" aluminum foil to protect cork from the fire
- Different foods: marshmallows, nuts, popcorn, and others
- Matches

SAFETY

Wear goggles at all times during the laboratory period.

Take extra care when working with fire.

Stay away from flammable liquids (alcohol, ethers, acetone, etc) and do not touch hot parts with bare hands.

Work on a sheet of aluminum foil to avoid burning the bench-top.

Instructions

1. Stick the food on one end of a wire.
2. Stick the other end of the wire through a piece of aluminum foil and into a cork stopper.
3. Light the food with a match.
4. Place the cork with the food into the opening in the side of the calorimeter.
5. Record the temperature that registers on the thermometer for each of the foods, in the following table. Try to decide what the main food group is by comparing it to the list of energy content of food, listed on the following page. Compare the data to the table the teacher gave you.

Food	Temperature	Primary Food Group

Energy Value of Food Groups

1 g of fat has nine calories.

1 g of alcohol has seven calories.

1 g of carbohydrates or proteins has four calories.