FOOD ENERGY

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- Food energy is chemical energy that animals (including humans) derive from their food and molecular oxygen through the process of cellular respiration. ... Foods are composed chiefly of carbohydrates, fats, proteins, water, vitamins, and minerals.

Food	Calories / Lb	Energy Efficiency
Corn	390	102%
Milk	291	45%
Cheese	1824	31%
Eggs	650	19%
Apples	216	15%
Chicken	573	15%
Pork	480	8.5%
Beef	1176	4.3%

The experience is to measure the energy of the food.

Materials

-Large tin can.

-Small tin can.

-Bottle cork.

-Sewing needles.

-graduated cylinder,100mL.

-Inmersion thermometer.

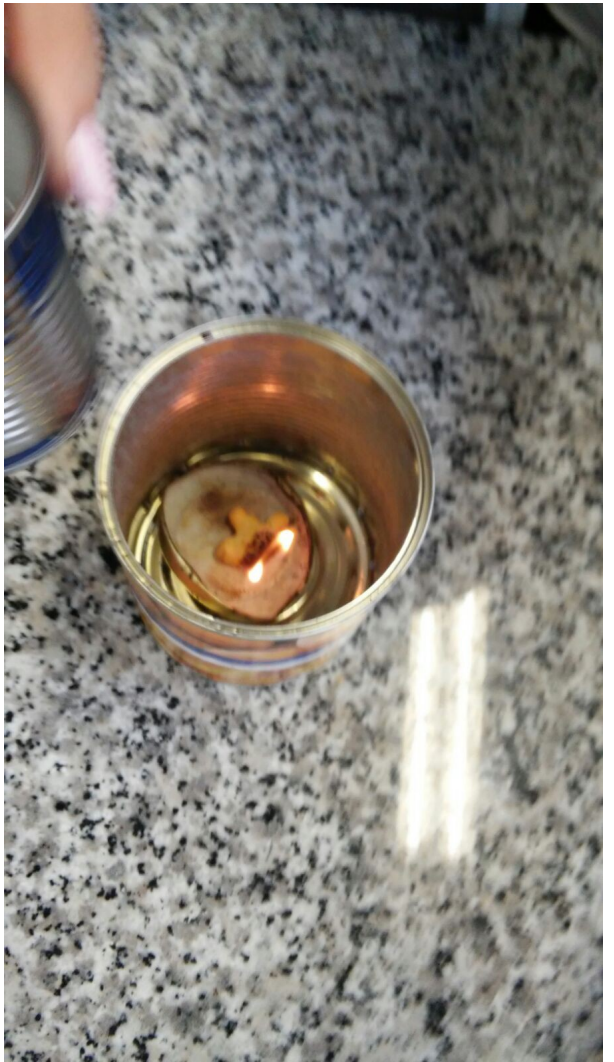
- 2.Long ligther
- 3.Digital scale.
- 4.Food items to test (dry items with a relatively high oil content and air trapped in them will generally work better)
- 5.Lab notebook

Procediments

- 1.We decided on the food items to study. For each item we will perform three measurements (trials).
- 2. For each trial ,we will:
- a.We started with our calorimeter disassembled.
- b.We weight the food items to be burned and record the mass in the column “Food: Mi”.
- c.We impaled the food items on the needles.
- d.We stired the water in the small can and measured the initial temperature (Ti).We recorded this temperature in the column”Water:Ti”.

- e.We had our calorimeter pieces close at hand ,and ready for use.
- F. light the food items with the longer light.
- G.When at least one food item catches fire,we carefully placed the smaller can in place above the flame.
- H. Allow the food item to burn itself out. Then we used smoke coming out of the top as an indicator to evaluate if the burning is still in process.
- i.Shortly after the food stops burning ,we carefully stirred the water and measured the final temperature (Tf).Making sure the thermometer has reached a steady lever before recording the value.
- J. When the burnt food item has cooled,we carefully removed it from the needles and weigh the remains. We record our vaue in the column “Food:Mf”.Ideally,all the food should have burned up.We substracted the finall mass from the initial mass.
- K.This completed one trial for this food item.
- 3.We repeated step 2 for two additional trials of this food item.

There are some photos



Taking measurements.

Food item tabble.

1.Mi: 0,500g . Mf:0,208g. Ti:23C. Tf:25C. Qwater:200 cal. Qwater for 1g food 684,931g

2.Mi: 0,458g . Mf:0,242g. Ti:23C. Tf:24,5C. Qwater:150 cal. Qwater for 1g food 694,444…g

3.Mi: 0,497g . Mf:0,363g. Ti:23C. Tf:25C. Qwater:200 cal. Qwater for 1g food 1.492,537g

Average Qwater for 1 g food :957,2894378 cal

Conclusions

We think the amount of calories we measured is lower than the true valor because we have not expert instruments to do the measurements.

The caloric content of the food confirm our hyphotesis.