



Food Science Experiment

Topic Water Holding Capacity

Length of project: 1 hour

Research. What does society know. Look it up!

Water holding capacity is the ability of food to hold onto its own water. This affects the juiciness of food, especially protein foods such as meat. Sugar, salt and other spices can either cause foods to hold onto or release their juiciness.

Words to search: salt, sugar, spices, food water holding capacity edu

Situation. Try something different or document a problem that has now arrived.

Cooking foods with different spices can cause meat to be tender, juicy, and flavorful.

Hypotheses. Guess what may happen.

Seasoning with table salt can cause the meat to be tough and dry.

Seasoning with kosher salt can cause the meat to be tender and juicy.

Equipment. What you need.

Gather

- 3 Sirloin Beef Steaks or other meat
- Table salt
- Kosher Salt
- 3 Paper Plates

Methods. Set up a procedure/protocol to test your hypothesis.

- Gather food and equipment to grill steaks
- Label each plate with the treatment used.
 - Table Salt
 - Kosher Salt
 - No Salt (control)
- Season steaks with appropriate treatment.
- Grill steaks to an internal temperature of 150° to 160°
- Place each steak on its corresponding labeled plate.
- Record results of juiciness, flavor, and tenderness of each steak

Experiment. Conduct the experiment.

Conduct the experiment to test how cooking with different salts affects the texture, flavor, and juiciness of the food.

Change one factor and re-do the experiment

Option 1: Use other meat sources Chicken Breasts, Pork Chops, Lamb Chops

Option 2: Use another cooking method you have

Option 3: Use another spice you have

Redo the experiment.

Results/Observations. What happened?

Record what happened to the steak. What did each of the treatments do? Was the juiciness different? Do they taste different? Is the texture different?

Conclusion. Apply what you found out.

How could you use this knowledge?

Why would you change the spices used?