University of Idaho Extension
Gooding County

Food Science Experiment

Topic Title: Coagulation and pH Length of project: 1 hour

Research. What does society know. Look it up!

Coagulation is the changing of liquids to solids or semi solids. Enzymes and pH of foods can cause coagulating of foods. An example of coagulation is making a solid dairy product such as cheese from milk which is a liquid.

Words to search: curds and whey, ricotta cheese, coagulation of milk edu

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

Adding different types of acids and bases can cause milk to coagulate by changing the pH of milk.

Hypotheses. Guess what may happen.

_____ juice can be used to make large curds.
_____ juice can be used to make small curds.

Equipment. What you need.

Gather

- 1 ¼ cup Warm Milk
- Water
- Pineapple Juice
- Orange Juice
- Lemon Juice
- Vinegar
- 4 Small Bowls or Quart Jars

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

- Gather warm milk, juices and vinegar
- Label each bowl with the treatment used.
    - Water
    - Pineapple Juice
    - Lemon Juice
    - Orange Juice
    - Vinegar
- Put ¼ cup warm milk in each bowl, add 1 tablespoon of treatment (either water, juice or vinegar) and stir.
- Record results

Credit: Original Written by Science Fun with Dairy Foods, 4-H Curriculum
Edits by Cindy Kinder

Experiment. Conduct the experiment.

Conduct the experiment to test how each juice treatment affects the curd size, amount, smell and taste of the food.

Change one factor and re-do the experiment

Option 1: Tomato Juice, Prune Juice,
Option 2: Use another liquid you have
Redo the experiment.

Results/Observations. What happened?

Record what happened to the milk. What did each of the treatments do? Was the size different? Do they smell 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 curd size?

Credit: Original Written by Science Fun with Dairy Foods, 4-H Curriculum
Edits by Cindy Kinder