

The Science Behind Cheese

Article written by Pat Jones (pjones4@unl.edu)
Extension Educator Brown, Keya Paha, and Rock Counties.

What do you get from combining milk and lemon juice? You guessed it, cheese! From a food science perspective, combining these two ingredients is an easy way for you to make a soft cheese at home. People have been making many varieties of cheese for thousands of years. Cheese offers many health benefits, such as vitamin A that supports eye health, protein for building muscles and wound healing, phosphorus to help calcium during bone development, and calcium to keep bones strong and healthy.



To make soft cheese at home you will need:

- 1 gallon of milk (makes about one pound of cheese)
- Juice of one lemon or 1/3 cup lemon juice
- Cheesecloth
- Strainer
- Bowl to be placed under the strainer
- Stove
- Something heavy (food cans on a small plate work great)

How to make the cheese:

1. Wash your hands with soap and water.
2. Make sure everything is clean and sanitized to be as free as possible from bacteria.
3. Unfold the cheesecloth and place it in the strainer. Place the strainer in a bowl.
4. Pour the milk into a large saucepan.
5. Bring the milk to a boil, stirring constantly to prevent scorching.
6. Turn the heat down to low and continue to stir gently while adding the lemon juice. The milk will start to get chunky, this is called curdling. Stop stirring.
7. Allow the milk to cool. Once the milk has cooled, pour the curds and whey into the cheesecloth-lined strainer.
8. Gently pull the cheesecloth edges up to form a ball of curds. Secure the cheesecloth edges. Place a small plate on top of the cheesecloth-covered curds, then place clean food cans on top of the plate. Let the cans press on the cheese for a couple of hours.
9. Add salt to taste and enjoy eating your cheese!
10. Cover and refrigerate any leftovers and eat within 3 days.

For more information check out the Food Fun for Young Children Newsletter at: <http://go.unl.edu/chi>

Explaining the Science:

Lemon juice is an acid food and when added to milk it causes some milk proteins to coagulate, which can be observed by the clumping of the milk. The result is a separation of these proteins in the form of curds from the whey.

Sources:

1. What is Cheese, National Dairy Council: <https://bit.ly/2KoLPSx>
2. Science Project-Cheese Making, Education.com: <https://bit.ly/2T1BcZs>
3. Improving & Understanding Food with Science, Food Crumbles: <https://bit.ly/31dx4Zy>