

CHEESE

and cottage cheese

Get cheesy: make curds and whey!

SUPPLIES:



1/2 cup whole milk



4-quart saucepan



1/4 cup lemon juice or vinegar



strainer or colander



1/4 to 1/2 teaspoon salt



mixing bowl



large coffee filters

INSTRUCTIONS:

1. HEAT IT!

Pour the milk into a saucepan, and bring to a bare simmer - just below a boil, around 200°F.

2. STIR IT!

Remove the milk from heat, and stir in the lemon juice or vinegar. The milk should begin to curdle immediately.

3. STRAIN IT!

Cover the milk, and let it stand for 10 minutes. This gives time to allow the acid to totally separate the curds and whey. Strain the curds into a bowl using a colander lined with a coffee filter.

4. SHAPE IT!

Squeeze the curds with the coffee filter in your hand, and gently press to remove the excess liquid (whey). Add salt to taste. Shape into a rectangular package by pressing the curds together.

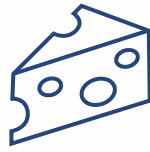
FOR COTTAGE CHEESE: Follow the first 3 steps. Then, strain the curds from the whey. After straining, do not squeeze (just spoon) into a container and refrigerate.



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EXPLAIN IT!

when you heated the milk and then added lemon juice, it lowered the pH of the milk because it is acidic. this caused the casein complexes to change shape and also altered their charge. As a result, instead of repelling each other, the casein complexes clumped together. As they clumped, they captured fat and lactose along the way that got combined into a larger and larger solid, which we see as curds.

1. As the milk is heating up, what is happening to the milk?
 - a. the milk is thickening
 - b. the milk is bubbling
2. After milk is heated and acid is added, what does the milk separate into?
 - a. white solid curds
 - b. white stringy cheese
3. what state of matter were the curds?
 - a. liquid
 - b. solid
4. what was the state of matter for the main ingredient?
 - a. liquid
 - b. solid

Answers: 1. A, 2. A, 3. B, 4. B

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