Name: _____ Group: _____ Date: _____

LAB 72
OBSERVATION

THE EFFECT OF PASTEURIZATION ON BAKER'S YEAST

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Goal

Observe the effect of pasteurization on baker's yeast.

Observation criteria

1. What is pasteurization?

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2. What are the two parameters that need to be controlled during pasteurization?

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3. Baker's yeast releases carbon dioxide when activated. What would happen if a latex balloon were used to cover a container of activated baker's yeast?

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Materials

- marker
- 2 test tubes (18 mm × 150 mm)
- test-tube rack
- wash bottle of distilled water
- 150-mL beaker
- container of dry baker's yeast
- spatula
- glass stirring rod
- hot plate
- ring stand
- thermometer
- thermometer clamp *or* universal clamp and perforated cork stopper
- beaker tongs
- container of table sugar (sucrose)
- 25-mL graduated cylinder
- 2 latex balloons
- stopwatch *or* watch
- heat-resistant plate

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Procedure

1. Use the marker to number the test tubes 1 and 2.
2. Pour about 100 mL of distilled water into the beaker.
3. Add 10 mL of dry baker's yeast.
4. Gently mix the contents of the beaker with the glass stirring rod.
5. Heat the contents of the beaker to a temperature of 37°C.
6. Pour 15 mL of the contents into test tube 1.
7. Add 15 mL of table sugar to test tube 1.
8. Gently mix with the stirring rod.
9. Cover test tube 1 with a latex balloon.
10. Set aside for 15 minutes.
11. Heat the contents of the beaker to a temperature of 82°C.
12. Maintain the temperature for 45 seconds. If necessary, remove the beaker from the hot plate and return it with the beaker tongs.
13. Remove the beaker from the hot plate.
14. Allow the beaker to cool for 3 minutes.
15. Pour 15 mL of the contents of the beaker into test tube 2.
16. Add 15 mL of table sugar to test tube 2.
17. Gently mix with the stirring rod.
18. Cover test tube 2 with a latex balloon.
19. Set aside for 15 minutes.
20. Observe if the balloons inflate. Record the results.
21. Clean up and put away materials.

Observations

Record your observation in the table below. Give the table a title.

Title:

Test tube	Observations

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Reflecting on your observations

1. Indicate if the baker's yeast in each test tube was active or not. Explain your answer.

_____

_____

_____

_____

2. What was the effect of pasteurization on the baker's yeast?

_____

_____

3. Milk is usually heated at 78.8°C for 6 seconds to be pasteurized. How could you establish better parameters for pasteurization of baker's yeast?

_____

_____

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