

CARBOHYDRATES TO USE IN CULTURING BAKER'S YEAST

STUDENT BOOK Chapter 8, page 240

Goal

Identify the carbohydrates that can be used in culturing baker's yeast.

1. What are the independent variables in this lab?

2. What is the dependent variable in this lab?

Hypothesis

I think that _____
because _____

Materials

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



Procedure



1. Pour 100 mL of distilled water into the beaker.
2. Heat the water in the beaker until it reaches 37°C.
3. Add 10 mL of dry baker's yeast to the water.
4. Mix slowly and carefully.
5. Number the test tubes from 1 to 5 with the marker.
6. Pour 15 mL of the contents of the beaker into each test tube.
7. Add 5 mL of glucose to test tube 1. Mix gently with the glass stirring rod.
8. Add 5 mL of fructose to test tube 2. Mix gently.
9. Add 5 mL of galactose to test tube 3. Mix gently.
10. Add 5 mL of lactose to test tube 4. Mix gently.
11. Add 5 mL of table sugar to test tube 5. Mix gently.
12. Cover each test tube with a balloon. Be careful not to break the test tubes.
13. Set aside for 15 minutes.
14. Observe if the balloons inflate or not. Record the results.
15. Clean up and put away materials.

Results

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

Title:

Test tube	Carbohydrate present	Observations



Name: _____ Group: _____ Date: _____

Analysis of the results

1. Based on your results, what carbohydrates can be used in culturing baker's yeast?

2. What other parameters could be tested to identify ideal conditions for culturing baker's yeast?

3. There are carbohydrates other than those tested in this lab, such as starch, mannose and dextrose. Does this experiment help you to determine all of the carbohydrates that can be used in culturing baker's yeast? If not, explain how to do so.

Conclusion

1. Complete the following sentence:

_____ are carbohydrates that can be used in _____

2. Was your hypothesis confirmed or not? Explain your answer.
