

Biofuel Worksheet

Data Table A.

| Control | | |
|------------|---------------------------------|--------------|
| Time (min) | Gas Bubble Dimensions (cm × cm) | Observations |
| 10 | | |
| 15 | | |
| 20 | | |
| 25 | | |
| Cornstarch | | |
| Time (min) | Gas Bubble Dimensions (cm × cm) | Observations |
| 10 | | |
| 15 | | |
| 20 | | |
| 25 | | |
| Sucrose | | |
| Time (min) | Gas Bubble Dimensions (cm × cm) | Observations |
| 10 | | |
| 15 | | |
| 20 | | |
| 25 | | |

Part A. Post-Lab Questions

- Consider the products of fermentation as described in the *Background* section.
 - Which product caused the bags to expand during the experiment?
 - Where was the location of the gas bubble in the bag?
 - Why do you think the gas collected in this location?
- Why is it necessary to use warm water to mix the yeast and food source?

3. Examine the gas bubble dimensions from the data table.
 - a. Which food source yielded the greatest quantity of gas?

 - b. Explain why cornstarch and sucrose did not produce the same amount of gas.

4. Why do you think a small gas bubble was visible in the control bag?

5. What is the purpose of the control in this experiment?

Part B. Post-Lab Questions

- 1 How did your group determine the amount of carbon dioxide gas collected during your experiment?

2. Compare your results with a group that used a similar method of CO₂ collection.
 - a. Explain the similarities and differences in the results.

 - b. Describe possible errors involved and their effect on the results.

3. Compare your results with a group that used a different method of CO₂ collection.
 - a. Which group was able to collect more carbon dioxide gas? (*Reminder*: 1 cm³ = 1 mL)

 - b. Which method do you think is a more accurate way to measure the amount of CO₂ gas produced?

4. Although not visible or tested for, what other compound was present inside the tube?

5. The release of gases from burning fossil fuels is a factor in the rise of the Earth's average surface temperature, known as global warming. How might using more biofuels impact global warming?