**Fermentation Lab**

**Class Copy- Do not write on!**

**Introduction:**

Yeasts are one-celled (**unicellular**) organisms that are kissing cousins to mushrooms. They do not contain chlorophyll, so they cannot make their own food (**heterotrophic**). When conditions are not favorable, yeast become inactive, but they will spring to life when conditions are right. The dried yeasts sold in packages in the grocery store (*Saccharomyces cerevisiae*) are waiting anxiously to show you how they get their energy.

**Research Question:** Which type of food will produce the most fermentation?

**Hypothesis:** If….Then

**Methods:**

A. Stir one package of yeast into 100 ml of warm tap water. Record the temperature:\_\_\_\_\_\_\_\_\_\_\_\_\_\_

B. Divide the yeast mixture evenly among 3 beakers.

C. Add 1 tablespoon of sugar to beaker #1 and 1 tbsp. of corn syrup to beaker #2. Choose from the following for number 3 #3 – molasses, corn starch, or artificial sweetener (aspartame, sucralose, etc.) Stir each. Rinse your glass stirring rod before going from one beaker to the next.

D. In the plastic pan, set up a warm water bath for the yeast. Put enough water in the pan so the water level will come halfway up the sides of the beakers. Be careful not to let the water-bath water splash into the beakers. The bath water will cool slowly, but it will remain warm long enough to generate active fermentation.

**Data and observations:**

Create a data Table to record observation for each set-up.

Record the following in the data table:

1. In the table, record the depth of the foam in each beaker at 1 minute, 3 minutes, 5 minutes, 7 minutes, and 9 minutes. Use metric units (mm).
2. Relative size of bubbles.
3. Does the foam go up and over in any of the beakers?
4. Record smell. Sniff the bubbling beakers (no, you do not have to waft). What's that smell?

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **FOOD** | **DEPTH OF FOAM** | | | | | Other observations |
| 1 min. | 3 min. | 5 min. | 7 min. | 9 min. |
| 1. |  |  |  |  |  |  |
| 2. |  |  |  |  |  |  |
| 3. |  |  |  |  |  |  |

**Analysis:**

Write a paragraph that explains the data you recorded by noting trends/patterns that appear in data are identified

**Conclusion:**

Write a paragraph that address these components.

* Hypothesis is rejected or accepted based on the data which can be in Claim.
* Claim: Conclusion contains answer to question that was investigated.
* Evidence: Essential data used to draw conclusions is summarized.
* Reasoning: Students make sense of their evidence as it relates to their claim.