Name: _____

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5 11

Yeast Fermentation: How Long Will I Be Blue?

Hypothesis: "If…then…" format

Materials:

8 test tubes	Sucrose solution with dropper	Yeast mixture
Test tube rack	Small graduated cylinder	BTB with dropper

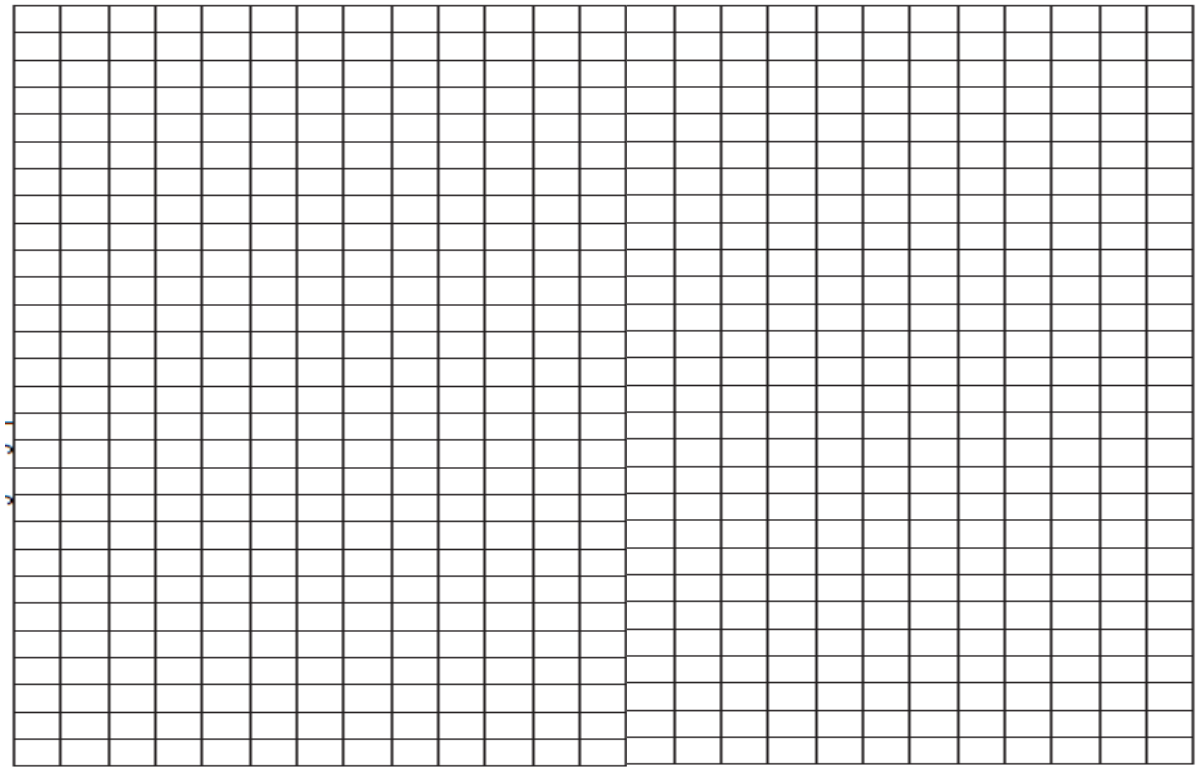
Procedure:

1. **Stir** yeast solution vigorously, and then add **5 mL of yeast solution** to each test tube.
2. Add **4 drops** of **BTB** to the **first** test tube **only** then swirl.
3. Add 14 **drops** of **sucrose solution** to the first test tube.
4. Time how long it takes in **seconds** for the test tube to turn **green** (6.8). Swirl the test tube every 30 seconds to mix the contents thoroughly.
5. Continue watching for change to **yellow** (6.2) **as you proceed with the other test tubes.**
6. Repeat steps 1-4 for the remaining test tubes

Test tube	# drops of sucrose	Time in seconds for colour change:	
		Green	Yellow
1	20		
2	15		
3	10		
4	5		
5	0		

NOTE: The colour change will be gradual, and you will have to continually compare the test tubes to the colour chart. Some test tubes will not change colour.

Results: [5]



Analysis: [11]

1. What is the purpose of a control? [1]

2. Is there a control in this experiment? _____ Explain. [2]

3. According to **your** graph, is there evidence that the sucrose concentration affects the rate of fermentation of yeast? Explain [2]

4. Why did some test tubes not turn yellow? [1]

5. Besides CO_2 what other product(s) is/are being produced by yeast? [1]

6. a) Predict and explain how various temperatures would affect the rate of fermentation. BE SPECIFIC [2]

   b) How could this knowledge be used in industries that use yeast? [2]

6.0	6.2	6.4	6.6	6.8	7.0	7.2	7.4	7.6
6.0	6.2	6.4	6.6	6.8	7.0	7.2	7.4	7.6
6.0	6.2	6.4	6.6	6.8	7.0	7.2	7.4	7.6
6.0	6.2	6.4	6.6	6.8	7.0	7.2	7.4	7.6
6.0	6.2	6.4	6.6	6.8	7.0	7.2	7.4	7.6
6.0	6.2	6.4	6.6	6.8	7.0	7.2	7.4	7.6
6.0	6.2	6.4	6.6	6.8	7.0	7.2	7.4	7.6
6.0	6.2	6.4	6.6	6.8	7.0	7.2	7.4	7.6
6.0	6.2	6.4	6.6	6.8	7.0	7.2	7.4	7.6
6.0	6.2	6.4	6.6	6.8	7.0	7.2	7.4	7.6
6.0	6.2	6.4	6.6	6.8	7.0	7.2	7.4	7.6
6.0	6.2	6.4	6.6	6.8	7.0	7.2	7.4	7.6