

# Yeast Catalase Lab

Disk Version

# Problem: How does the concentration of substrate (peroxide) effect the rate of reaction?

- Background
  - Catalase reaction  $2\text{H}_2\text{O}_2 \rightarrow 2\text{H}_2\text{O} + \text{O}_2$
  - “Measure”  $\text{O}_2$
- Dip in yeast solution, blot dry
- Drop in  $\text{H}_2\text{O}_2$ 
  - Time to float
- Serial dilution of peroxide solution
  - Full concentration (3%)
  - 1/2 (10 mL  $\text{H}_2\text{O}_2$  + 10 mL  $\text{H}_2\text{O}$ ) (1.5%)
  - 1/4 (5 mL  $\text{H}_2\text{O}_2$  + 15 mL  $\text{H}_2\text{O}$ ) (0.75%)
- 10 mL per tube

- Independent Variable
  - Peroxide concentration (3%, 1.5%, 0.75%)
- Dependent Variable
  - Time to float (proxy variable for O<sub>2</sub> production)
- Graph x= concentration y=time to float
- Replicates
  - Due to variability between yeast solutions there is no point to sharing data between groups.
  - SO...4 replicates for each condition-get an average

- Data analysis
  - Relationship between peroxide concentration and reaction rate
  - Graph x= concentration y=time to float
- Results/Discussion/Conclusion
  - Hmmm?

