



**CALIFORNIA STATE SCIENCE FAIR
2008 PROJECT SUMMARY**

Name(s) Ruth S. Wong	Project Number J0418
Project Title Comparing the Rate of Yeast Fermentation on Natural Sugar vs. Artificial Sweetener	
Objectives/Goals My objective was to determine if yeast would ferment natural sugar faster than artificial sweetener.	
Abstract Methods/Materials Ten same size sanitized glass bottles with fermentation corks with air locks were used. Six of them were controls with two glass bottles containing sanitized water, two other bottles with sugar solution, and the other two bottles with artificial sweetener solution. Two bottles contained sugar solution and the other two bottles with artificial sweetener solution were all inoculated with yeast. All 10 bottles contained the same amount of solution. Both natural sugar and artificial sweetener were brought up to the same brix. All bottles were incubated at 20°C. A Refractometer was used to measure and record the brix of all the solution in the bottles daily for 18 days along with a hydrometer to measure the potential alcohol. This experiment was repeated twice.	
Results All control samples without yeast remained clear and no air were noticeable in the air fermentation locks. All the bottles with yeast had air in the air fermentation locks and the solution were cloudy at Day 1. The bottles with yeast in the sugar solution had foam around the neck of the bottles unlike the bottles with yeast in the artificial sweetener at Day 1. This remains the same through out Day 18.	
Conclusions/Discussion The absence of foam around the two bottles of the artificial sweetener solution showed that yeast didn't fermented as well as the sugar solution which had foam around the bottles. There is no difference in fermentation rate between natural sugar and artificial sweetener when both began at the same brix. The slow fermentation rate was due to the absence of nitrogen.	
Summary Statement My project is to determine if yeast ferment faster on natural sugar compared to artificial sweetener.	
Help Received Borrow incubator from my school, and refractometer from Fresno State University.	