



**CALIFORNIA STATE SCIENCE FAIR  
2009 PROJECT SUMMARY**

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**Project Title**  
**Can Fresh Garlic Prevent Fungi Growth?**

**Abstract**

**Objectives/Goals**  
The purpose of my experiment is to test if freshly squeezed garlic could prevent the fungi growth as it has been claimed in some scientific research.  
Hypothesis: If I add Garlic to a fungi solution (Saccharomyces Cereviae), then the fungus will grow slower or stop growing at all.

**Methods/Materials**  
#Freshly squeezed garlic 10 gm; Saccharomyces cereviae; Sugar; Pipettes; Scale; 20 x 10ml Graduated Test Tubes (10 tubes per control group and 10 tubes per experimental group); 1 x 20 ml Graduated Test Tube; Digital Camera; Equipment to measure the release of CO<sub>2</sub>: basin filled with water, test tube on ring stand clamp fixed on the edge of the basin, 20 ml graduated testing cylinder to gather and measure the released gas, plastic tubing (approximately 1 foot long)

**Results**  
Measurement of CO<sub>2</sub> Released (ml)  
Tube # Control Group Treatment Group  
Tube 1 2 3  
Tube 2 3 1  
Tube 3 3 2  
Tube 4 2 1  
Tube 5 3 2  
Tube 6 2 2  
Tube 7 3 1  
Tube 8 2 2  
Tube 9 2 2  
Tube 10 3 2  
Mean 2.5 1.8  
Standard Deviation 52.70% 63.25%; Variation 0.28 0.40; T-Test (1 tail, type 1) 0.022.  
Hypothesis Testing: We see that the mean of the treatment group is lower than the mean of the control group. To test if the difference is statistically significant, I applied one-tail T-test, which takes into account not only the difference between the means of the two samples, but also the difference of their variability. My hypothesis is that at 5 % significance level ( $\alpha=0.05$ ) the mean of the treatment group is lower than the mean of the control group, that is why I used one-tailed test. I claim that the difference is

**Summary Statement**  
The purpose of my experiment is to test if freshly squeezed garlic could prevent the fungi growth as it has been claimed in some scientific research.

**Help Received**