



**CALIFORNIA STATE SCIENCE FAIR  
2014 PROJECT SUMMARY**

<b>Name(s)</b> <b>Dina S. Dehaini</b>	<b>Project Number</b> <b>J1607</b>
<b>Project Title</b> <b>The Best Method to Fight Fungal Infections</b>	
<p style="text-align: center;"><b>Abstract</b></p> <p><b>Objectives/Goals</b> The purpose of this project is to find the most effective method in fighting fungal infections while also maintaining a very minimal amount of side effects and using both natural and man-made medications.</p> <p><b>Methods/Materials</b> 1. Clear tube; 2. 1 Liter bucket; 3. Yeast ; 4. Sugar; 5. Measuring cup; 6. Plastic water bottles; 7. Three antifungal agents; 8. Two natural methods; 9. Water proof sealant; 10. Thermometer; 11. PVC pipes; 12. Clear plastic box; 13. Bungee cords; 15. An accurate kitchen scale.</p> <p><b>Procedure:</b> 1. Drill a hole into a plastic water bottle cap the size of the tube. 2. Insert tube into the hole, apply sealant around the tube to trap produced CO<sub>2</sub>. 3. Start control process, which is amount of air produced by the yeast without any medications. 4. Fill the 1 liter bucket three fourths of water. 5. Fill a graduated cylinder with water fully with no bubbles and leave it upside down in the bucket without letting any water escape. 6. Measure 20 gm of yeast and then pour into an empty plastic water bottle. In measuring cup, add 13.45 grams of sugar and half a cup of water at 30C. 7. Pour the mixture of water and sugar in to the water bottle and immediately twist on the bottle cap with the tube. Stick the other end of the tube under the graduated cylinder under the bucket. 8. After 45 minutes, measure air produced by the yeast by measuring displaced water inside the graduated cylinder. 9. For testing with medications, repeat steps 1-8, however, add the medication with the sugar water at a dilution of one percent before pouring in to the water bottle with yeast.</p> <p><b>Results</b> After 14 trials, the average amount of water that remained in the graduated cylinder for the control process was 10 milliliters of water. When honey was added, at a dilution of 1%, an average of 60.14 ml of water was left in the graduated cylinder. For tea tree oil, the average amount of water left in the graduated cylinder was 56.71 ml. The average amount of water left in the graduated cylinder while using Clotrimazole was 47.29 millimeters, 50 ml for Tolnaftate, and 51.29 ml for Undeclynic acid</p> <p><b>Conclusions/Discussion</b> After testing 14 times with many diverse medications, I found that the best method to fight fungal infections is honey. Not only honey was effective, it also has one side effect; those who are allergic to it may receive burning or itching. However, other than that, honey is the best method to fight fungal infections</p>	
<b>Summary Statement</b> The purpose of this project is to find the most effective method in fighting fungal infections while also maintaining a very minimal amount of side effects and using both natural and man-made medications.	
<b>Help Received</b> Teacher helped in reviewing research; Dad help with assembling	