



**CALIFORNIA STATE SCIENCE FAIR
2013 PROJECT SUMMARY**

Name(s) Juhaina Habeebulla	Project Number J2007
Project Title Natural Preservative vs. Mold	
Abstract	
Objectives/Goals My objective was to determine if ginger would be a good natural preservative for home baked bread and its optimal storage condition.	
Methods/Materials Method: I baked 5 different loaves of home baked bread using the same exact basic ingredient. I added a specific quantity of ginger to one, honey to the second, cloves to the third, cinnamon to the fourth, and kept the fifth as it is for control. I also used one store bought bread to compare. After baking I sliced the different kinds of bread, placed them in Ziploc bags, labeled them and placed them in four different environments, counter top, dark room, moist, and refrigerator. I observed them on alternate days and kept track of the growth of mold through pictures and measurement. I repeated this process three times. Materials: home baked bread with honey, home baked bread with ginger, home baked bread with cinnamon, home baked bread with cloves, home baked bread with no natural preservative, store bought bread, cotton balls, Ziploc bags, and stationary materials as per needed.	
Results Ginger was not a good natural preservative as I had anticipated. Honey turned out to be the best natural preservative. The best storage condition was the refrigerator or the dark room.	
Conclusions/Discussion Ginger has been used for centuries as a natural preservative in food, which was the reason why I decided to test bread with ginger as a preservative. Out of all the different natural preservative ginger was the first to mold, therefore the least mold resistant. Honey was determined to be the best natural preservative. It was the last one to mold among the home baked bread. The best suitable storage environment was determined as refrigerator or dark room.	
Summary Statement My project is about finding a good natural preservative that could be used in bread which will increase its shelf life as good as store bought.	
Help Received My older sister helped me bake the breads; Mom helped me place it in zip loc bags and label them.	