



**CALIFORNIA STATE SCIENCE FAIR
2013 PROJECT SUMMARY**

Name(s) Hamilton A. Allport	Project Number J1701
Project Title Natural Preservatives in the Chemical Age	
Abstract Objectives/Goals The goal of my project is to show that even though we live in an age where most ways of treating harmful organisms are chemical, such as bleach or pesticides, there are still ways of treating these harmful organisms in a way less harmful to ourselves. Methods/Materials Materials I needed were: 1 liter of white wine vinegar, 26 strawberries, 26 tangerines, 7 pears, 4 bananas, 1 large bowl, 1 notebook, 1 thermometer, and 1 hygrometer. Half of the samples I put directly onto the sheet of parchment paper I prepared, while the other half of the samples I submerged in vinegar for 15-20 seconds then put on the parchment paper, distinctly separated from the fruits without vinegar. Every day I recorded the number of fruits starting to mold (10-25% covered in mold), the fruits with much mold (26-50% covered in mold), and the fruits filled with mold (over 50% covered in mold.) I then graphed my results. Results My results all supported my hypothesis that the vinegar did help to prevent the growth of mold. One surprising result was that in three of the four fruits, as time went by, the difference in time between the fruits with vinegar and the fruits without vinegar reaching each stage increased, not staying constant as I would have thought. Conclusions/Discussion This project can be used for a variety of purposes, especially for controlling mold growth on buildings. Right now bleach is used a lot, and that is bad for respiration, especially in those with asthma. Vinegar is much more natural and does not have dangerous chemicals. Vinegar and other natural acids such as pomegranate seed extract are a safe alternative to bleach in this chemical age.	
Summary Statement My project is about how acids, in this case vinegar, are able to prevent the growth of mold on foods and other substances.	
Help Received Teacher explained how to participate in science fair; Mother gave me idea for using white wine vinegar.	