



CALIFORNIA STATE SCIENCE FAIR 2010 PROJECT SUMMARY

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Project Title Go Bananas	
<p style="text-align: center;">Abstract</p> <p>Objectives/Goals The purpose of this investigation is to determine if the air flow around bananas changes how fast they ripen. If you change the air flow around the bananas and therefore change the presence or concentration of ethylene gas will the bananas ripen faster or slower? I think the bananas with the least air flow will ripen fastest.</p> <p>Methods/Materials I used one hand of stage 2 green bananas separated into 3 clusters of 3 bananas and 3 banana hangers that I made from wood. I put the banana hangers on my kitchen shelf. I covered one cluster of bananas with a clear plastic bag and partially closed it with a bag clip. I set up a small fan near another cluster and put it so the air was blowing on the bananas. I observed the ripening stage for all 3 clusters of bananas every 12 hours until they were all at stage 7 based on the UC Davis staging chart.</p> <p>Results In the beginning the bananas in the control cluster and the fan cluster were ripening at about the same pace. The cluster in the bag ripened faster and continued to ripen faster until the fifth day of observation when the control cluster caught up. Then the control cluster reached stage six first but the bag cluster ripened quickly during the last 2 days and was the first to reach stage seven. The cluster with the fan blowing on it ripened most slowly until it got to stage 5 and then it ripened quickly and caught up to the control cluster.</p> <p>Conclusions/Discussion The bananas in the bag ripened the fastest and the fan cluster ripened slowest. The cluster in the bag had an enclosed environment with the least airflow. By changing the environment to increase the concentration of ethylene gas the bananas ripened faster. Although my hypothesis was correct and the bananas ripened at different rates they were not as different as I expected. A possible explanation for this result is that the concentration of ethylene in the air is not as important as the ethylene gas in the banana itself. This may also explain why near the end of ripening the bananas all ripened quickly. I also noticed that the speed of ripening in all three clusters got faster the riper they got. Maybe once a certain level of the gas is reached the bananas ripen quickly. Another reason the fan cluster may have ripened more slowly is that the moving air may have slightly cooled the bananas due to evaporation. This might have slowed down the ripening process.</p>	
Summary Statement By changing the air flow and therefore the concentration of ethylene gas around bananas during ripening the speed of ripening changes.	
Help Received I got help from my sister in decorating my project board. I asked my friends and family sometimes to confirm my banana ripening score. My Dad helped me build my banana hangers. My whole family talked about my project and helped me proofread.	