



CALIFORNIA STATE SCIENCE FAIR  
2002 PROJECT SUMMARY

<b>Name(s)</b> Shannon M. Gonzalez	<b>Project Number</b>  22189
<b>Project Title</b> <b>Fruit: When You Are Ripe, You Are Right</b>	
<p style="text-align: center;"><b>Abstract</b></p> <p><b>Objectives/Goals</b>          The objective of this project was to accurately test pears to see if placing them in different conditions would effect their ripening process.</p> <p><b>Methods/Materials</b>          15 unripe pears, paper, tape, permanent marker, scissor, scalpel, parafilm, eppendorf tubes, ohaus balance, distilled water, Sorvall Mc 12v, Finnpiquette (5-40 micro liters), pipette tips, refractometer, 95% ethanol solution, Kenmore wipes, journal/log.</p> <p><b>Results</b>          The #E# pears, which were left in the windowsill, ripened faster than the others and were in perfect conditions to be eaten. The #D# pears, which were placed in a dark area ripened the second fastest, while they were at a rotting point. The #C# pears, which were placed in regular room temperature, ripened less quickly than the others and came in third place. If left slightly longer in their assigned condition, they would soon have been ready to eat. The #B# pears ripened less fast than the others because of the fact that they were placed in the refrigerator.</p> <p><b>Conclusions/Discussion</b>          The hypothesis was correct because all of the pears ripened at a different speed due to the fact that they were placed in different environments. The refractive index apparently dropped when a fruit was placed in the refrigerator because the readings were recorded to be lower after a week in the refrigerator than at the starting point. This was because when a fruit was placed in a refrigerator it preserved the fruit, stopping the production of ethylene, which is a hydrocarbon gas that makes fruits ripen. The fruits that were not placed in the refrigerator began to ripen because hydrolases, found in enzymes produced by ethylene, began to do their part of breaking down the chemicals found inside the pears. The fruit's sour taste changed as the chemicals and acids were being broken down. Degradation of starch by amylase produced sugar, which increased the juiciness of the fruit. Enzymes also transformed large organic molecules into smaller ones that evaporated in the air, giving the fruit a scent. The break down of chlorophyll also contributed to the fruit developing new color/colors.</p>	
<b>Summary Statement</b> This project accurately tests if placing pears in different conditons effects their ripening process.	
<b>Help Received</b> Used lab equipment at San Diego State University under the supervision of Janice Shackelford.	