



**CALIFORNIA STATE SCIENCE FAIR  
2009 PROJECT SUMMARY**

<b>Name(s)</b> Mady K. Snyder	<b>Project Number</b> <b>J0421</b>
<b>Project Title</b> <b>Peace Love and Rockin Rolls: Will the Juice from Fermented Apples and Grapes Make Bread Dough Rise?</b>	
<p style="text-align: center;"><b>Abstract</b></p> <p><b>Objectives/Goals</b> The objective of this project was to test whether the juice of fermented organic grapes and fermented organic apples would create enough natural yeast to cause rise in bread dough. In addition, the goal was to see if the fruit with the highest sugar and yeast content would cause greater rise in the bread dough.</p> <p><b>Methods/Materials</b> Three trials of each fruit were tested. The control group consisted of a fruitless mixture in which flour and water were exposed to air to gather natural yeast and also allowed to ferment. Organic grapes and organic apples were finely chopped and placed in airtight container for five days to ferment. After five days, the fruit was removed from the mixture and the remaining liquid was fed for two days with flour. On the third day the flour/fermented fruit juice mixture was added to ingredients of a bread dough recipe and placed in calibrated beakers on a heating pad. The rise of the bread dough was measured.</p> <p><b>Results</b> Both the organic fermented apple liquid and fermented grape liquid caused a rise in the bread dough. The fermented apple liquid caused a rise of an average of 75 percent higher after being combined with the bread dough ingredients. The fermented grape liquid, when added to the bread dough ingredients, rose on an average of 90 percent higher than its original state. The bread dough using the fermented grape liquid rose 25 percent higher than the bread dough using the fermented apple liquid.</p> <p><b>Conclusions/Discussion</b> Yeast can be found in the air and on the surface of fruits and flower nectars. Both the organic Fuji apples and the organic red grapes have a high sugar and yeast content on the surface of the fruit and within the fruit. However, the organic grapes had a higher sugar content and a higher yeast content on the surface of the fruit and within the fruit. It was hypothesized that the fruit with the higher sugar content would cause the highest rise in the bread dough. The grape liquid caused the higher rise in the bread dough.</p>	
<b>Summary Statement</b> The juice from fermented apples and grapes was tested to see if the natural yeast produced would cause rise in bread dough when substituted for commercial yeast.	
<b>Help Received</b> Mother helped prepare board.	