



CALIFORNIA STATE SCIENCE FAIR 2014 PROJECT SUMMARY

Name(s) Pooja A. Sheladiya	Project Number 34832
Project Title Feeling Low? Turn Up the Turmeric!	
Objectives/Goals The problem to be solved in the project was how turmeric affects the liver enzyme reaction rate. The hypothesis was the catalyst solution with the most turmeric, 6g will cause the enzymes in the liver to react at a slower pace than the solution without turmeric because the turmeric helps reduce the reaction of the liver enzymes because of the proteins and other essential substances and elevated liver enzymes contribute to diseases. Abstract The problem to be solved in the project was how turmeric affects the liver enzyme reaction rate. The hypothesis was the catalyst solution with the most turmeric, 6g will cause the enzymes in the liver to react at a slower pace than the solution without turmeric because the turmeric helps reduce the reaction of the liver enzymes because of the proteins and other essential substances and elevated liver enzymes contribute to diseases. Methods/Materials First I created a hydrogen peroxide solution by adding 35mL of hydrogen peroxide to 500mL of water. Then I made holes into the filter and created a catalyst solution by blending up 100g of liver with 10mL of water. Afterwards I filled the test tube with the hydrogen peroxide solution and had a partner dip the filter into the catalyst solution and place into the tube. I quickly pushed the one hole stopper into the tube placing my thumb over the hole and flipped it upside down and recorded the time it took the filter disk to reach the top of the tube. I repeated the process over again except I then used a catalyst solution that had 3.5g of turmeric mixed into it and then 6g of turmeric. Results The average reaction rate of the liver enzymes in the solution without turmeric was 2.39secs which was the fastest average reaction rate. The slowest average reaction rate was in the solution with 6g of turmeric which was 3.08secs. The solution that had the second slowest reaction rate was the solution with 3.5g of turmeric at 2.78sec. Conclusions/Discussion The data collected throughout the experiment supports my hypothesis that the turmeric will slow down the reaction rate of the liver enzymes which is good because elevated enzymes can result in disease. My hypothesis is correct because the average reaction rate of the solution with 6g of turmeric was 3.08sec which is the slowest average time of all. It applies to the real world because turmeric is a commonly used spice all throughout India and in Indian families in general. It is known that turmeric can potentially cure pancreatic cancer, but it goes through the liver in order to reach the pancreas and be effective. Another way it can apply to the real world is turmeric is commonly used in Ayurveda practices and is used by many people. I know this because my granpa was an Ayurveda doctor.	
Summary Statement Turmeric's affect on the reaction rate of liver enzymes.	
Help Received My science teacher, Ms. Fisher, overall helped me with the entire project. She helped me figure out the measurements and let me use her supplies such as the scale, measuring cups, test tubes, etc. She also gave me feedback on my work. Jay Shinde, Amy Gourlay, and Dinelli Jinadasa helped me put the filter inside	