



**CALIFORNIA STATE SCIENCE FAIR
2002 PROJECT SUMMARY**

Name(s) Allie E. Pittenger	Project Number J1623
Project Title Juicing It Up!	
Abstract Objectives/Goals it was concluded in research that pectin was a commonly used substance in jams, jellies, and marmalades. An experiment was completed to determine which of the common eaten fruits and vegetables contained the most amount of pectin. The hypothesis stated that grapefruit will contain the most amount of pectin. Methods/Materials Ten commonly eaten fruits and vegetables were selected at random. They were prepared by cutting each up, placing them into a saucepan with a suitable amount of water, and cooking it for approximately 45 minutes. After cooking, the juice was strained from the pulp and core material, mixed with 70% isopropyl alcohol, and then strained through a coffee filter to collect pectin. The volumes of juice and alcohol and the weight of pectin produced were recorded. The data was analyzed to determine the weight of pectin per volume of juice. Results The concentration of pectin was highest in lemons at 0.42 g/ml and lowest in tomatoes at 0.01 g/ml. Olallie berries and grapefruit were intermediate at 1.8 g/ml. In general, citrus fruits usually contain more pectin but the results from my experiment showed that oranges had little pectin, even though they are in the citrus family. Conclusions/Discussion Pectin is a substance commonly used in making jams, jellies, and marmalades to ensure they jell properly. Although my hypothesis is wrong, I believe jams, jellies, and marmalades prepared from citrus fruits will need less added pectin to ensure the jelled state. But, when making a jam, jelly, or marmalade it would possibly be beneficial to add the juices from the fruits with a high pectin content to ensure achieving a well jelled state.	
Summary Statement My project compared the amount of pectin in 10 commonly eaten fruits and vegetables.	
Help Received mother helped type report and organize project board; father helped gather needed materials	