



**CALIFORNIA STATE SCIENCE FAIR
2004 PROJECT SUMMARY**

Name(s) Se Hi Park	Project Number J1324
Project Title Kimchi, Spicy Korean Culture: So Hot, but Healthy	
Abstract Objectives/Goals For my science fair project, I experimented to determine how the growth of lactic acid bacteria is affected by salt, pepper, and time of fermentation in Korean traditional dish, Kimchi. Afterwards, I also took a survey to find out under what kind of condition this food is most popular. I hypothesized that the salt would decrease the bacteria, and pepper and time would act as incentive to motivate them. For people's preferences, I hypothesized that they will prefer Kimchi with standard amount of salt (17g), pepper (19g), and time of fermentation (5 days). Methods/Materials I made ten dishes of Kimchi varying either the amount of salt, amount of pepper, or the time of fermentation. Then I measured the number of the lactic acid bacteria in each sample by diluting it with the LB media, spreading on a petri dish, and reserving in a 37 Celsius incubator overnight. At the end, I surveyed ten Korean adults to see which Kimchi people preferred the most. Results Salt did decrease the bacteria, pepper and time increased the growth, and the Kimchi with normal amount of salt, pepper, and fermentation time were most favored. Conclusions/Discussion The data of my experiment confirmed my hypotheses. It also proved that the growth of lactic acid bacteria is affected by the amount of salt, pepper, and the time of fermentation. It further verified that the optimum condition for Kimchi fermentation is predictable.	
Summary Statement My project was to determine how the growth of lactic acid bacteria in Kimchi is affected by the amount of salt, pepper, and time.	
Help Received I used lab equipment at the University of California Los Angeles under the supervision of Dr. Henian Wang.	