



**CALIFORNIA STATE SCIENCE FAIR
2002 PROJECT SUMMARY**

Name(s) Dan H. Nguyen	Project Number S1422
Project Title Effects of BT Corn on Bacteria	
Abstract Objectives/Goals PROBLEM: Does Bt Corn juice affect the bacteria Escherichia coli and Rhizobium leguminosarum? HYPOTHESIS: Bt corn juices will affect both Escherichia Coli and Rhizobium leguminosarum. Methods/Materials E.Coli and Rhizobium slants were prepared using bacterial growth kits. In addition, thirty-two petri dishes were prepared with melt and pour agar kits. Sixteen plates were prepared with beef extract agar, and the remaining twenty with soil and yeast extract agar. Within each group, one of sixteen and one of twenty plates, half of the plates were reserved for control and half for Bt testing. Using the slants and agar plates, E. coli was grown on the first group of sixteen plates and Rhizobium on the second group of twenty. Sterile paper discs were placed on all control plates (sixteen controls total) for both bacteria after they had been grown on the plates. For the remaining sixteen plates, discs soaked in Bt juice were implanted on them. Juice was obtained by cleaning the leaves of Bt corn plants and grinding them for juice. Sterile techniques were used throughout the entire experiment. Results According to this experiment, Bt corn juices do not affect the bacteria Escherichia coli and Rhizobium leguminosarum. The bacteria grew over the Bt discs and there was no zone of inhibition. The results do not agree with my hypothesis. Even though Bt corn is capable of killing the European corn borer, the caterpillars of monarch butterflies, and the caterpillars of some moths, it did not affect the tested bacteria in this experiment. Conclusions/Discussion According to this experiment, juices from the leaves of Bt corn have no effect on the growth or life of the bacteria Escherichia coli and Rhizobium leguminosarum. The bacteria survived the Bt corn toxin while some microorganisms cannot. For future experiments, I would like to test other types of essential soil bacteria.	
Summary Statement How Bt corn juice affects the bacteria Escherichia coli and Rhizobium leguminosarum.	
Help Received Used equipment and greenhouse at Eastlake High School under the supervision and guidance of Mr. Jim Merzbacher; Mom took me to UCSD library and Eastlake; Eldon Harley helped raise corn plants.	