



**CALIFORNIA STATE SCIENCE FAIR
2004 PROJECT SUMMARY**

Name(s) Rahul Basu	Project Number J1602
Project Title The Effect of Hydrogen Peroxide on the Rooting of Plant Cuttings and Seed Germination	
Objectives/Goals I conducted this experiment to find out the effect of Hydrogen Peroxide (H ₂ O ₂) on the rooting of plant cuttings and seed germination.	
Abstract	
Methods/Materials I used two sets of materials: one for the seeds and one for the cuttings. The materials for the seeds were: Seeds of mung beans, broccoli, bok choy, black eye bean, garbanzo bean; H ₂ O ₂ , petri dishes, filter paper, marker, and masking tape. The materials for the cuttings were: Cuttings of jade plant, ivy, coleus, donkey-tail, etc., flasks, H ₂ O ₂ , plant nutrients, knife (to make cuttings), marker, and masking tape. For the seeds, I used 4 dishes for each concentration (10mL, 30mL and 50mL of H ₂ O ₂) in 473 mL water). I placed 5 seeds in each dish. I used blackeye beans, garbanzo beans, bok choy, mung beans, and broccoli. For the cuttings, I used 4 flasks for each concentration (30 mL H ₂ O ₂) in 908 mL water) and used jade-plant, ivy, and donkey-tail cuttings.	
Results I found that all bean plants watered with a concentration of H ₂ O ₂ had lighter leaves and longer roots than the controls. Another interesting observation was that all jade-plant concentrations had no roots below the water. In the ivy, the control group was much healthier than the variables. I didn't find conclusive results with the donkey-tail samples.	
Conclusions/Discussion I found that while H ₂ O ₂ helps with germination, toxicity in the chemical eventually kills the plant. Chlorophyll production was decreased, deteriorating the health of the plant. For best results, I would suggest using H ₂ O ₂ for germination and using water afterwards.	
Summary Statement My project is about the effect of Hydrogen Peroxide (H ₂ O ₂) on the rooting of plant cuttings and seed germination.	
Help Received My teacher, Mr. Francis Lee, supervised and guided me through my work in the school science lab and brought me the chemicals. My parents helped me with Star Office graphing tool and reviews.	