



**CALIFORNIA STATE SCIENCE FAIR
2009 PROJECT SUMMARY**

Name(s) David D. Calica	Project Number S1805
Project Title The Effects of Varying Concentrations of Used and New Motor Oil on the Germination and Growth of Lima Beans	
Abstract Objectives/Goals Find the effects of varying concentration of new and used motor oil on the growth and germination of lima bean plants. Methods/Materials 7 - Packets of Lima Bean Seeds 2 - 12 Quart Organic Soil Bags 1 - Bottle New Mobil 1 Engine Oil 1 - Bottle Mobil 1 Engine Oil (after 5 months of use) A. Mix 8 containers of soil, water, and motor oil. a. 2 control groups, 3 groups of new motor oil, 3 groups of used motor oil b. In each group of 3 - 25% pollution, 50% pollution, 75% pollution c. Plant 18 seeds in each group. Give each seed equal amounts of water per day. B. Take average of total heights and every day for 3 weeks. Note total number of visible sprouts each day. Results Both the used and new motor oil had a significant effect on the plants. Both were lethal at 50% and 75% concentrations. The used motor oil hindered growth slightly more than the new. Conclusions/Discussion At a certain concentration, motor oil is lethally toxic to lima bean plants, regardless of additional effects of the chemicals in used motor oil.	
Summary Statement Compare the different qualities of new and used motor oil and determine whether or not varying concentrations of both oils are damaging to lima beans.	
Help Received Parents helped to obtain materials. Teacher helped to edit and reorganize notebook.	