



**CALIFORNIA STATE SCIENCE FAIR  
2008 PROJECT SUMMARY**

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| <b>Name(s)</b><br><b>Jacqueline C. Peterson</b>   | <b>Project Number</b><br><b>J1529</b> |
| <b>Project Title</b><br><b>Can Plants Adapt to Water Pollution?</b>   |                                       |
| <p style="text-align: center;"><b>Abstract</b></p> <p><b>Objectives/Goals</b><br/>The objective of this experiment is to determine if lima bean plants can form immunities to water pollution. The hypothesis stated if three groups of lima bean seedlings are pre-conditioned with motor oil in concentrations of 1%, 2%, and 5% for 35 days, then they will grow better than the group of plants not pre-conditioned when all plants are exposed to a 50% concentration of motor oil for 10 days.</p> <p><b>Methods/Materials</b><br/>Twenty-four lima bean seeds were placed in plastic cups and watered with 12.5 milliliters of well water for five days. Next, twelve lima bean seedlings were selected and planted in 1-gallon pots below a fluorescent light for 18 hours a day. The pots were separated into four groups and each group was watered with a specific concentration of motor oil and measured for 35 days, while leaves were measured and pictures were taken at ten day intervals.</p> <p><b>Results</b><br/>All of the seedlings planted germinated. The experiment showed fewer differences between groups than expected. Although the plants watered with 0% concentration did do best, the plants watered with concentrations of motor oil still grew quite well despite the lack of chlorophyll throughout the plants. This caused some of the bottom leaves to lose their green color and eventually fall off. The plants watered with motor oil were also more fragile and the leaves easily ripped.</p> <p><b>Conclusions/Discussion</b><br/>During the last ten days of the experiment, groups of plants showed almost no differences. All plants had brown bottom leaves, seed pods, and at least one leaf had broken off. The hypothesis was proven incorrect because groups of plants pre-conditioned with motor oil did not show signs of forming immunities.</p> |                                       |
| <b>Summary Statement</b><br>The purpose of this experiment is to determine if lima bean plants can form immunities to water pollution.  |                                       |
| <b>Help Received</b><br>Mother and father proof read report; Neighbor provided well water from home.  |                                       |