



**CALIFORNIA STATE SCIENCE FAIR  
2003 PROJECT SUMMARY**

<b>Name(s)</b> Chris M. Chaplin	<b>Project Number</b> <b>S1604</b>
<b>Project Title</b> <b>Sudden Oak Death (Phytophthora ramorum)</b>	
<b>Abstract</b> <b>Objectives/Goals</b> The major purpose of this experiment was to determine if the zoospores produced by p. ramorum search for hosts after making contact with water. The secondary purpose of this experiment was to determine if light could affect the progression of the zoospores when they travel on water. <b>Methods/Materials</b> Phytophthora ramorum cultures were grown in a laboratory. When they reached the proper life stage, the zoospore stage, the zoospores were concentrated and placed into a petri dish with one of three different types of leaves at one end (either rhododendron, tanoak, or bay laurel). After a designated amount of time, samples were taken from both near the leaf and on the opposite side of the plate away from the leaf. These samples were then placed on a medium and incubated for a week, after which time they were checked for new growing colonies and the colonies were counted. (There were also two extremely important preliminary experiments that were performed before the final experiment was performed. The first one was to decide the proper zoospore concentration and the second one was to decide at which time should the samples be taken after inoculation.) [In addition to having the plates with the zoospores in them, half were put under light and half were put into dark for the final experiment.] <b>Results</b> The data from the first experiment revealed that the best out of the three tested zoospore concentrations was 10000 zoospores/mL. The data from the second experiment showed that the best time to take the samples from the petri dishes, out of the two tested was 15 minutes after inoculation. The data from the first and second runs of the third experiment revealed that there were slightly more colonies on average near the leaf than away from the leaf (when the zoospores received light) and there were slightly more colonies away from the leaf when the zoospores received no light. <b>Conclusions/Discussion</b> There appeared to be an attraction between the zoospores and the leaves (even though the standard deviations caused a slight overlap). There also appeared to be an affect of light on the motility of the zoospores. In the light, there were more colonies found near the leaf than away from it. In the dark, there were just as many if not more colonies found away from the leaf as there were near the leaf.	
<b>Summary Statement</b> The experiment was about determining if the zoospores produced by Phytophthora ramorum (water mold that causes Sudden Oak Death) were attracted to the leaves of known plant hosts.	
<b>Help Received</b> Used lab at U.C. Berkeley under the supervision of Dr. Matteo Garbelotto	