



**CALIFORNIA STATE SCIENCE FAIR
2005 PROJECT SUMMARY**

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Project Title The Effects of Mutualistic and Parasitic Fungus on Plant Growth and Their Soil	
<p style="text-align: center;">Abstract</p> <p>Objectives/Goals The goal of this project was to analyze the effects that a parasitic fungus and a mutualistic fungus would have on tomato plants', as well as Bacopa plants', growth, development, and soil. This experiment uses several tests and experiments performed over several years in order to observe the results of each plants as well as obtain the answer to the given question.</p> <p>Methods/Materials This experiment uses four Early Girl Variety Tomato Plants as well as three Blue Bacopa Plants and three White Bacopa Plants. Using normal gardening tools these plants were put under observational conditions for a time period with notes being taken on each plant on a daily basis. These experiments aslo use a soil test kit that tests the phosphorous, nitorgen, potash, and pH levels of each plant at the begining of the observation period and the end.</p> <p>Results From the results obtained through each test it was determined that the plants that were placed in an environment grown with the parasitic fungus did very poorly compared to plants grown under normal, control, conditons. However, the plants that had been grown in the mutualistic fungus had grown slightly better than the plants grown under the normal conditions. The plants that had been grown in the steralized soil as a comparison group had grown the worst of all the plants. These plants expressed nutrient defficiency, as well as discoloring. As for the soil tests it was determined that the plants grown in the soil bought fertilizer produced a slightly hazardous environment for the plants to grown in, but the plants grown in the mutualistic fungus had the most suitable soil for plant growth. The plants grown in the parasitic fungus soil as well as the steralized had developed soil that was lacking in nutrients and very poor for plant growth.</p> <p>Conclusions/Discussion In conclusion through the test that had been performed over the years to test the effects of fungus on different types of plants it was determined that the best growing methods for plants was in a soil that was composed of an organic symbiot, mutualistic fungus, as opposed to a soil that had chemical additives introduced, store bought fertilizer. As for the parasitic fungus it was determined that the fungus that had developed created an environment in which the plants could not absorb nutrients efficiently, ultimately causing the plants to suffer and die.</p>	
Summary Statement This project is a set of tests and experiments that analyze the effects that a mutualistic fungus and parasitic fungus have on plant development, as well as how the fungi effect the soil of the plants.	
Help Received Biology Teacher, Mr. Michail, on Lectures about the Fungi	