



**CALIFORNIA STATE SCIENCE FAIR  
2002 PROJECT SUMMARY**

<b>Name(s)</b> <b>Donovan M. Melero</b>	<b>Project Number</b> <b>J1914</b>
<b>Project Title</b> <b>Phyto Females: Exceptional Egg-Layers</b>	
<p style="text-align: center;"><b>Abstract</b></p> <p><b>Objectives/Goals</b> The reproductive potential of <i>Phytoseilus persimilus</i>, a predatory mite which feeds on spider mites, pests, is a key component in IPM (Integrated Pest Management) strategy. My objective was to determine the average number of eggs laid by Phyto females in a two day period. I thought that they would lay an average of 2.0 eggs a day.</p> <p><b>Methods/Materials</b> I placed 21 kidney bean leaves with only spider mites and their eggs in 21 mung bean cells. I then placed a pregnant Phyto in each. I counted the number of eggs laid every 24 hours over a two day period by observing the cells under a microscope.</p> <p><b>Results</b> I discovered that fat Phyto females laid an average of 3.7 eggs a day; fat, dark females laid an average of 2.0 eggs a day; flat, dark females laid an average of 0.5 eggs a day; and thin, dark females laid an average of 0.25 eggs a day. One thin, light female laid an average of 2.5 eggs a day.</p> <p><b>Conclusions/Discussion</b> I concluded that my hypothesis was partially correct. The Phyto could lay an average of 2.0 eggs a day, but they could also lay a lot more. I also concluded that fat, light females laid more eggs than thin, flat, dark females. Overall, the condition of the female, temperature and the amount of available food were important to the reproductive rate.</p>	
<b>Summary Statement</b> The goal of my project was to determine the average number of eggs laid by female <i>Phytoseilus persimilus</i> in order to increase the effectiveness of biological control.	
<b>Help Received</b> Used lab equipment at Syngenta Bioline under the supervision of Bobby Orr, who also supplied me with all materials necessary for my project.	