



# CALIFORNIA SCIENCE & ENGINEERING FAIR 2018 PROJECT SUMMARY

<b>Name(s)</b> <b>Atticus J. Humphrey</b>	<b>Project Number</b> <b>S2206</b>
<b>Project Title</b> <b>Effects of Apollo SC Miticide on Galendromus occidentalis</b>	
<p style="text-align: center;"><b>Abstract</b></p> <p><b>Objectives/Goals</b> The title of this project is Toxicity of Apollo SC Miticide on Galendromus occidentalis (<i>G. occidentalis</i>). The purpose of this study was to investigate if differing concentrations and intervals between the leaf-dip assay of Apollo SC (Apollo) and test subject exposure would affect its toxicity.</p> <p><b>Methods/Materials</b> Concentrations consisted of a 100% label rate (LR) Apollo, a 50% LR, a 25% LR, and a 12.5% LR. The control was a 0% LR. Each concentration and the control test contained ten petri dishes with the leaf-dip assay and five test subjects of <i>G. occidentalis</i>. Three leaf-dip assays were conducted. Test 1 had a twenty-four-hour interval between Apollo application and test subject exposure, test 2 had an interval of three days before exposure, and test 3 had a 5-day interval before exposure. Toxicity was measured in mortality of the <i>G. occidentalis</i> and recorded every twelve hours for thirty-six hours.</p> <p><b>Results</b> After performing this study, the results showed that differing concentrations and delayed leaf-dip exposure of the pesticide did affect the mortality of <i>G. occidentalis</i>. The 100% LR concentration did show the greatest mortality in all of the leaf-dip assays performed at an average of 4.2. The control had the lowest mortality at an average of 0.4. The remaining pesticide concentrations' results were 50% LR at 3.2, 25% LR at 2.7, and 12.5% LR at 2.1.</p> <p><b>Conclusions/Discussion</b> These results indicate that that Apollo SC does have lethal impacts to <i>G. occidentalis</i>. Apollo SC is a selective pesticide and could be utilized in an integrated pest management (IPM) application in conjunction with <i>G. occidentalis</i>. The most effective concentration and exposure delay must be determined for maximum pest management.</p>	
<b>Summary Statement</b> The focus of this project is to determine the selectivity of Apollo SC Miticide when applied to a beneficial mite.	
<b>Help Received</b> The help that was recieved was from Kearny Ag Center and Dr. Kent Daane for project setup, along with my project advisor, Mr. Aalto. I also recieved help from the miticide company and Ricom Vitova for the mite supply.	