



CALIFORNIA STATE SCIENCE FAIR 2008 PROJECT SUMMARY

Name(s) Lauren A. Sorge	Project Number J2016
Project Title Wasp Warfare: Measuring How Parasitoid Wasp Population Controls Eucalyptus Psyllid	
Objectives/Goals The objective of my project is to determine if the parasitoid wasps, released by the University of California, Berkeley in 2000, are controlling the red gum lerp psyllid population in three San Diego County locations: Rancho Santa Fe, Scripps Ranch, and Quivira Basin, and to determine which of the three areas has the largest parasitoid wasp population.	
Abstract Methods/Materials Three boxes were prepared for each location by placing a funnel inside the lid and sealing an upside-down, clear plastic bowl over the funnel. Next, eucalyptus trees were inspected in each location, and 20 branches infested with the red gum lerp psyllid were collected from each location. The lerp on each of the leaves were counted, and the branches were placed into the boxes and sealed shut. Once the parasitoid wasps living inside of the lerps reached maturity, they emerged through the funnel and into the plastic bowl. Then the wasps were counted. The experiments were conducted in the fall of 2007 and then repeated in the winter and spring of 2008.	
Results After comparing the data, Rancho Santa Fe had the largest population of parasitoid wasps with a total of 21. Scripps Ranch and Quivira Basin each had 11. Quivira Basin had the highest number of red gum lerp psyllids, and Scripps Ranch had the lowest until the spring samples were collected and it was observed that the population soared.	
Conclusions/Discussion When the red gum lerp psyllid population is compared with the number of wasps that emerged in the experiments, it appears that Rancho Santa Fe has the most parasitoid wasps and the least number of red gum lerp psyllids. The data shows that Scripps Ranch may have a declining wasp population because of the high numbers of red gum lerp psyllids and the low number of emergent wasps. This data suggests that the Scripps Ranch eucalyptus trees should continue to be monitored for the parasitoid wasp, as should all of San Diego County, due to the extreme fire danger caused by dead or dying eucalyptus trees.	
Summary Statement The purpose of this project is to monitor three areas of San Diego County's parasitoid wasp population, which is responsible for controlling the red gum lerp psyllid that is attacking eucalyptus trees in California.	
Help Received Phone interviews: Dr. Kent Daane, UC Berkeley and David Shaw, UC Cooperative Extension; Mom did all the driving; Dad assisted with the data and graphs; Debbie Culley helped edit the report.	