



**CALIFORNIA STATE SCIENCE FAIR
2010 PROJECT SUMMARY**

Name(s) Connor Golden; Caleb Richards	Project Number J1113
Project Title What Is the Effect of Cover Crops on the pH in the Vineyard Soil?	
<p style="text-align: center;">Abstract</p> <p>Objectives/Goals Cover crops affect soil pH and the ranch soils we chose as our control variable had a variety of cover crops planted, so we tested our hypothesis by sampling soil to see how different cover crops affected the soil pH. We collected four samples from six locations and hydrated each sample with water to make a saturated paste. The resulting data did not agree with our initial hypothesis and it gave us a lot to think about.</p> <p>Methods/Materials Our project followed six basic steps. We collected four 400gm soil from six different ranch locations. Then we weighed and measured the samples to ensure consistency before we mixed 50ml of water into a test container to make a paste. We were then able to test the pH of each sample using an Active Air Two-Way meter with two prongs: moist and pH. Once we wrote down the results we used Excel software to plot the data and we created a graph to display on our board.</p> <p>Results Initially, we just took one sample from six locations and found that we didn't have enough data to make a good conclusion. So we went back out to the six locations and collected four samples so we would have more data to support and verify the results.</p> <p>At first we thought that the forest sample, one of our controls, would be the most acidic but it turned out to be very neutral. This makes sense because the trees have been dropping organic matter for hundreds of years. Cover crop is just adding organic matter for one season.</p> <p>The Zinfandel vineyard had the lowest pH average and the forest sample tested neutral, 7.0, every time.</p> <p>Conclusions/Discussion It is evident from the data collected that there is a clear correlation between the native cover and planted cover crops and the resulting soil pH of the site. We concluded that our hypothesis, the seven seed mix would show a noticeable difference in pH, was incorrect. There was insufficient variation between the three cover crop samples and little variation between the cover crops and the control locations.</p>	
Summary Statement We investigated the effect of cover crops on the pH of soils in vineyards.	
Help Received Dads helped us gather samples and moms helped put the display board together.	