



**CALIFORNIA STATE SCIENCE FAIR
2004 PROJECT SUMMARY**

Name(s) Ariana G. Haro	Project Number S1210
Project Title A Statistical Comparison of Radial and Transect Sampling Methods in a Hypothetical 2-Dimensional Model	
<p style="text-align: center;">Abstract</p> <p>Objectives/Goals This experiment attempts to determine which method of bioassay, radial sampling or transect-line sampling, will prove to be a more accurate representation of the whole population sampled.</p> <p>Methods/Materials A 2-dimensional model of 28 scale hectares was made and the test units were randomly thrown on it from different angles towards the center to establish a base population. The data was collected from where those units fell. The standard error, standard deviation, and mean were then calculated. Using that information, graphs and spread sheets were generated. These were used to compare data. Three separate trials of comparative sample sets of radial and transect-line sampling were examined to confirm results.</p> <p>Results After analysis of the graphs and spread sheets the radial sample methodology clearly represents the whole population better than transect sampling, with some qualification. Two of the three trials of radial sample sets worked better. However, in all cases the means were outside of the standard error.</p> <p>Conclusions/Discussion The original hypothesis was, in a 2-dimensional environment radial sampling methods will more accurately represent the whole population. This hypothesis is a true statement based upon the results of the testing. When tested the radial samples proved to be more accurate two out of three times. Although, the radial samples were closer than the transect samples they were still inaccurate when compared to the standard error.</p>	
Summary Statement Using a 2-dimensional model, along with generated spread sheets and graphs, I was able to statistically analyze sample populations and determine whether radial or transect-line sampling methods best represent a larger population sample	
Help Received	