



**CALIFORNIA STATE SCIENCE FAIR  
2012 PROJECT SUMMARY**

<b>Name(s)</b> <b>Tatiana N. Scalisi</b>	<b>Project Number</b> <b>J1023</b>
<b>Project Title</b> <b>pH Level of Soil: Down and Dirty with Worms</b>	
<b>Objectives/Goals</b> The objective of this experiment was to find out, how does changing the diet of kitchen compost given to Red wiggler earthworms, affect the pH level of a higher acidity or alkaline/base level, or a lower acidity or alkaline/base level of the soil they enrich? The prediction was that the diets of vegetables and fruit will bring the pH level down to a more alkaline/ base level between 7&14, but the diets of eggshells, meats, and breads will bring the pH level to a higher rate of acidity, the numbers between 7&0. This is because vegetables and fruits have a lower rate of acidity while meats, eggshells, and breads have a much higher acidity rate.	
<b>Abstract</b> The method used for this experiment was changing the food types. There were five different types of left over kitchen scraps. These foods included breads, eggshells, fruit/fruit peels, vegetables, and meats. Each different food was placed into a separate pot with the earthworms in. When all the foods were first placed in the pots the pH level was first measured. Every 2-4 days the worms were checked on and fed more food or water if needed. This continued after the time period was over which were 3 & a half- 4 weeks, after the time period was over the pH level was measured again.	
<b>Methods/Materials</b> The method used for this experiment was changing the food types. There were five different types of left over kitchen scraps. These foods included breads, eggshells, fruit/fruit peels, vegetables, and meats. Each different food was placed into a separate pot with the earthworms in. When all the foods were first placed in the pots the pH level was first measured. Every 2-4 days the worms were checked on and fed more food or water if needed. This continued after the time period was over which were 3 & a half- 4 weeks, after the time period was over the pH level was measured again.	
<b>Results</b> : The pot that had meat, egg shells, and bread in had a much lower acidity rate than predicted, the averages of bread being 6.96 as the last measurement, as well as the last measurement of the meat pH average being 8.0. Although, the pots with the vegetables and fruit in had a rate of pH that was higher in alkaline level, and lower in acidity level. The pot with vegetables last average being 8.84, and the fruit penetrated soil last average being 8.2.	
<b>Conclusions/Discussion</b> : It has come to a conclusion that the organic foods, (fruit & vegetables), are ones the worms eat more, and they penetrate a lower level of acidity in the pH. However, the meats also had a much lower level of acidity pH, but the worms didn't eat a lot of it. The egg shells and breads had a lower level of acidity than expected, but the worms seem to be quite active with these foods. The final results were much more different than expected.	
<b>Summary Statement</b> How does changing the diet of kitchen compost given to earthworms change the pH level of the soil they enrich?	
<b>Help Received</b> Mother took photos	