



# CALIFORNIA STATE SCIENCE FAIR 2008 PROJECT SUMMARY

<b>Name(s)</b> <b>Michael M. Pilegard</b>	<b>Project Number</b> <b>J1231</b>
<b>Project Title</b> <b>Which Dog Food Is Digested Better?</b>	
<p style="text-align: center;"><b>Abstract</b></p> <p><b>Objectives/Goals</b> My project was to see which dog food is best digested by a dog, expensive or inexpensive. My hypothesis was that the most expensive dog food would be digested better.</p> <p><b>Methods/Materials</b> To conduct the experiment I made a miniature digestive system of a dog by putting dog food with lemon juice (representing stomach acid) into a balloon (resembling a stomach). Next, I took a stocking (which was the small intestine) and put meat tenderizer ( serving as enzymes) with the dog food squeezed from the stomach and let it sit overnight in cup of water. Next, I recorded the weight of the squeezed dried dog food (representing feces) and the clarity of the water left in the cup (representing the food absorbed). I did this 20 times for 3 types of dog food, Atta Boy, Complete by Purina, and Iams. Then I calculated the amount of dog food needed to meet the guaranteed analysis on the dog food labels and analyzed the amount of digestible protein provided from the ingredient list on the label. I also calculated the cost per serving of dog food.</p> <p><b>Results</b> The range of the cost of dog foods was smaller once the cost per serving was calculated compared to the cost per pound. Atta Boy, which costs \$0.11 per serving, produced the most waste (feces), and Iams, which costs \$.14 per serving, produced the least amount waste. This indicated that more of the food stayed in the body (was digested). Complete, which costs \$0.11 per serving, had the least amount of transparency in the liquid that would be absorbed in the body and Atta Boy had the most. This indicated that most of the food went to waste from Atta Boy. Iams, the most expensive, contained the most digestible protein and Atta Boy ( which was less expensive) contained the least. Iams also required the least amount of dog food to meet the guaranteed analysis on the label and Atta Boy required the most.</p> <p><b>Conclusions/Discussion</b> Given all this information, weight of waste, clarity of liquid to be digested, cups of dog food needed, and digestible protein content, Iams won 3 out of 4 of these categories. Complete won one and Atta Boy lost all of the categories. Therefore, my hypothesis was correct. If you want the most digestible dog food at only \$0.03 a serving more, choose Iams (the more expensive dog food tested).</p>	
<b>Summary Statement</b> I determined which differently priced dog food is digested better by replicating a dog's digestive system and analyzing label information.	
<b>Help Received</b> Mother/Teacher typed, used paper cutter, taught the difficult concepts & graphing program, and provided a second pair of hands when needed during the experiment.	