



# CALIFORNIA STATE SCIENCE FAIR 2012 PROJECT SUMMARY

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<b>Project Title</b> <b>Bombyx mori: Life, Death, and Dieting in Between</b>	
<p style="text-align: center;"><b>Abstract</b></p> <p><b>Objectives/Goals</b> The objective of this experiment was to determine whether 1 gram of bacteroidetes, 0.5 gram of bacteroidetes, or no bacteroidetes causes the most weight loss. My hypothesis was the silkworms consuming 1 gram of bacteroidetes would lose more weight than the silkworms consuming 0.5 gram and 0 grams of bacteroidetes, since bacteroidetes cause weight loss.</p> <p><b>Methods/Materials</b> After I evenly distributed thirty silkworms into fifteen containers by placing two in each container and separating them with dividers, I labeled one side of a container N-1 and the other N-2 (no bacteroidetes 1, no bacteroidetes 2), N-3 and N-4 on another, continuing until N-10. I did the same with five L (low) containers and five H (high). I weighed each silkworm's initial weight. I cooked the food by boiling and mixing water with the artificial mulberry powder, microwaving, and storing the food in the refrigerator. I cooked three batches of food: one with no bacteroidetes, one with 0.5 grams of bacteroidetes powder, and one with 1 gram. I sliced the hardened food into pieces that weigh 0.5 grams and gave a piece of food to each silkworm (no bacteroidetes silkworms eat the no bacteroidetes food, etc.). The next day, I weighed all thirty silkworms. I cleaned containers by removing the contents and rinsing and drying the container. I gave one piece of food to each silkworm. For eleven days, feed, clean, and weigh the silkworms.</p> <p><b>Results</b> The resulting averages illustrated that since Day 1, the silkworms exposed to 1 gram of bacteroidetes gained the most weight, the silkworms exposed to 0.5 grams of bacteroidetes gained the least weight, and the silkworms exposed to no bacteroidetes were in between.</p> <p><b>Conclusions/Discussion</b> The data rejects the hypothesis that the silkworms consuming the 1 gram bacteroidetes food will lose more weight than the silkworms consuming the 0.5 gram food or the no bacteroidetes food since bacteroidetes cause weight loss. According to the results, the silkworms consuming 1 gram gained the most weight, the silkworms consuming 0.5 grams gained the least, and the no bacteroidetes silkworms were in between. This experiment connects to the real world because bacteroidetes live in human small intestines. Bacteroidetes are gut micro biota that cause weight loss by extracting less calories from food. Since they cause weight loss, bacteroidetes are used in diet products to help people lose weight.</p>	
<b>Summary Statement</b> I tested how bacteroidetes affect the weight of silkworms.	
<b>Help Received</b> Teacher gave suggestions/ corrections. Mother and Father bought supplies.	