



**CALIFORNIA STATE SCIENCE FAIR  
2016 PROJECT SUMMARY**

<b>Name(s)</b> <b>Marliese Y. Hegele</b>	<b>Project Number</b> <b>J1807</b>
<b>Project Title</b> <b>Sweeter Radishes? The Effect of Sweeteners on Radishes</b>	
<b>Objectives/Goals</b> I wanted to learn how different sweeteners affected the taste and health of radishes. My hypothesis was that the sugar and Splenda would kill the radishes; Stevia would be healthier than the other radishes and equally as healthy as the control, and that the ones with sweetened water would be sweeter than the control, but equally as sweet as one another.	
<b>Abstract</b> <b>Methods/Materials</b> I planted radish seeds in four planters. I watered them all with the same water, but one planter had white granulated cane sugar added to its water, another had Splenda added, and one had Stevia added. I watered them and took notes and pictures for 23 days. Then, I harvested the radishes, weighed them, measured their largest leaf and their roots. Finally, I had people taste them and fill out a survey.	
<b>Results</b> For the control plants, the average length of the biggest leaf was 8.92 cm, the average width was 4.9 cm, and the average root length was 8.13 cm. For the sugar plants, the average leaf length was 4.65 cm, the average leaf width was 2.625 cm, and the average root length was 5.729 cm. For the Splenda plants, the average leaf length was 8.76 cm, the average leaf width was 6.01 cm, and the average root length was 9.18 cm. For the Stevia plants, the average leaf length was 9.14 cm, the average leaf width was 5.55 cm, and the average root length was 8.95 cm. For the taste test, 16% of people thought only the Splenda was sweeter than the control, 16% of people thought only the Stevia was sweeter than the control, 36% of people thought both Splenda and Stevia were sweeter than the control, and 32% percent of people thought that neither were sweeter.	
<b>Conclusions/Discussion</b> On average, the Splenda and Stevia plants were equally healthy, the control plants were slightly less healthy, and the sugar plants were the least healthy. All the sugar plants were malformed, three Stevia plants were malformed, one control plant was malformed, and one Splenda plant was malformed. Stevia had overall bigger radishes. A majority of people thought that the Splenda and/or Stevia were sweeter than the control. If I could improve or extend this experiment, I would repeat it, but in a greenhouse, have the amount of sugar be equal to the amount of the other sweeteners, instead of basing it on equal levels of sweetness, increase the amount of sweetener added to the water, grow the radishes for a longer period of time, and have more people do the taste test.	
<b>Summary Statement</b> My project is about testing the effect of different sweeteners on the taste and health of radishes, and finding an efficient way for farmers to sweeten their crops to increase their sales and allow them to grow and sell them out of season.	
<b>Help Received</b> I had no help beyond mentors and teachers available at school. I designed and performed the experiment myself.	