



**CALIFORNIA STATE SCIENCE FAIR
2017 PROJECT SUMMARY**

Name(s) Cassidy R. Gereke	Project Number J1408
Project Title Bioplastic: Will Using Different Potato Starches Affect the Strength of Bioplastic?	
<p style="text-align: center;">Abstract</p> <p>Objectives/Goals To determine how different types of potato starches affect the tensile strength of bioplastic.</p> <p>Methods/Materials A variety of 5 different potato starches, corn syrup, water, and vinegar were used to create bioplastic. After creating the bioplastic, it was then tested to determine the tensile strength using a spring scale. The same procedure was then used to create a cup from white potato starch.</p> <p>Results Results showed that the bioplastic made from white potato starch had the strongest tensile strength in trials 1 and 2. The bioplastic made from yellow potato starch had the weakest tensile strength. Bioplastic made from white potato starch had an average tensile strength of 19 Newtons. Tensile strength was measured using a spring scale. As a result of the white potato bioplastic being the strongest, a cup was made using a mold, to test pH levels. Bioplastic made from white potato starch was also placed in soil to test the tensile strength after it started to decompose.</p> <p>Conclusions/Discussion In conclusion, making a bioplastic from potato starch could be an alternative to petroleum based plastic. The sugar content in a potato affects the strength of bioplastic. Using bioplastic as a product to hold liquid may not be the best option. Instead it could possibly be used to package items for consumers. Further research is needed to confirm what the best option is for bioplastic made from potato starch.</p>	
Summary Statement My project measures tensile strength of bioplastic created from different types of potato starches, determining which would be best to replace petroleum based plastic.	
Help Received My classmates helped peel and shred potatoes. I then performed the rest of the experiment myself.	