



**CALIFORNIA STATE SCIENCE FAIR
2014 PROJECT SUMMARY**

Name(s) Genevieve M. Jackson	Project Number 34700
Project Title Silkworms and Colored Silk	
Abstract Objectives/Goals The objective is to determine whether silkworms will spin colored silk if artificial or natural dye is added to their native food of mulberry chow. My goal was to find an "greener" alternative to coloring silk, since the textile industry is one of the most polluting industries in the world. Methods/Materials Three groups of 25 silkworms each were fed a combination of their natural food (mulberry chow) either with nothing added (control) or with green food coloring or with wheatgrass powder. The worms were allowed to grow until cocoons were formed, at which time the color of the spun silk was observed and recorded. As I followed the growth of the silkworms, I also recorded my observations of their rapidity of growth between the three groups as well as worm size, and the time it took for each group to form cocoons. Results I did not observe any color change from white to green silk for any of the three study groups. It does not appear that silkworms are able to uptake natural or artificial dye from their food and incorporate the dye into silk in this experiment. Some secondary observations included that the silkworms in the wheatgrass powder group grew faster than the other two groups; they spun their cocoons the fastest; and they produced the most cocoons by the end of the experiment. Conclusions/Discussion My results did not support my hypothesis; namely, I hypothesized that either natural or artificial dye could be added to a silkworms diet, then either dye (most likely the artificial dye) would change the silkworms cocoon color from white to green. Future investigation might include testing different dye concentrations, or different types of naturally occurring or artificial dyes. If dyes can be added to the silkworm food to attain colored silk, then the textile industry might not be so polluting to the environment.	
Summary Statement Finding a natural method for dyeing silk.	
Help Received Mother helped edit and revise report.	