



**CALIFORNIA STATE SCIENCE FAIR
2017 PROJECT SUMMARY**

Name(s) Emily M. Huitt	Project Number J2309
Project Title Where Are All My Queens? The Effects of Royal Jelly on Grafting	
<p style="text-align: center;">Abstract</p> <p>Objectives/Goals My objective is to determine if by adding royal jelly, using warm distilled water with royal jelly, or dry grafting to queen cell cups at the time of grafting honeybee larvae, will the survival rate of queens be greater or less.</p> <p>Methods/Materials Grafting honeybee larvae into cell cups to see which takes best. Using royal jelly as my control group, dry grafting, and warm distilled water with royal jelly on my baby larvae. I will use both Italian and Carnolian honeybees to perform my project. Each group I graft will receive 3 grafting bars into queen less hives.</p> <p>Results Success rate of grafting with warm distilled water and royal jelly kept the cells warm and moist which gave me a 100% survival rate, royal jelly which was the control group had a 65% success rate and dry grafting was only 45% as the cells dried out before I could get them to the hive for the worker bees to feed the cells royal jelly.</p> <p>Conclusions/Discussion I found that dry grafting didn't work well and most of the larvae died before it had time to adjust into the hive to be fed by the worker bees. Dry grafting had a take of only 45% survival of queens hatching out. I observed after 24 hours the cells that had warm distilled water and royal jelly had a better bed for the queen larvae to grow in and 100% survival rate. The worker bees had more time to adjust to the feeding of the larvae to become queens. My control group of royal jelly had a 65% success rate. I learned Italian queens were very gentle and better honey producers. Carnolian queens and worker bees were good honey producers but very aggressive when taking away the honey for extraction. By grafting with select breeding of queens you can choose the best breeding stock to keep your hives thriving, healthy and protect from colony collapse disorder. Queens are very important to the bee industry with all the diseases, mites, colony collapse disorder and costs as each queen can cost \$35.00 per hive.</p>	
Summary Statement My project showed how using warm distilled water mixed with royal jelly and placed into the queen cells at the time of grafting had a 100% success rate.	
Help Received My mom worked with me, as she is a beekeeper, I learned how to be efficient in grafting and raising new queens from larvae to lay.	