



**CALIFORNIA STATE SCIENCE FAIR
2015 PROJECT SUMMARY**

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Project Title Plant Based Oils vs. Store-Brought's Effect on Ants	
Abstract Objectives/Goals We chose this project because we were interested in a safer and more eco-friendly method of keeping away unwanted pests, rather than using toxic pesticides. Recent studies have shown that using natural plant based oils to repel insects have worked just as well as insecticides, so we wanted to test that theory. We tested this by timing how long it took for ants to reach a desired food that was surrounded by different oils. We compared the results of this to the results of using an insecticide. We assumed that the insecticide would be far superior than the oils, however we found that two oils were able to keep away the ants for 10 minutes while still keeping them alive. Our results led us to the conclusion that the store bought insecticide, Raid, is the overall better choice of pesticide. Methods/Materials Harvester ants, Store bought insect repellent, Citronella oil, Lavender oil, Peppermint oil, Patchouli oil, Sandalwood oil, Rosemary oil, Ant bait (Marshmallows), Plastic bin, Timer, Wooden sticks, Q-tips. Results The oils citronella and rosemary were able to keep the ants away from the food for 10 minutes while the other 4 oils were not able to repel the ants. The 4 oils lavender, peppermint, patchouli, and sandalwood were able to keep the ants away for about 2 minutes until the ants finally reached the food unaffected. The insecticide kept the ants away for the whole 10 minutes but killed the ants in the process. Conclusions/Discussion Our hypothesis was that using an insecticide with high toxicity would be more effective at keeping ants away from food than using plant based oils with repelling properties. The results from our experiment have proven our hypothesis to be correct. The toxicity from the insecticide kept the food untouched during testing and killed the ants. One problem we had during testing was after cleaning the oil it still left the smell on the surface forcing us to wash the test surface multiple times. An interesting future study might involve testing which foods attract ants the most.	
Summary Statement Testing natural plant based oils and store brought pesticide on ants.	
Help Received	