CALIFORNIA STATE SCIENCE FAIR
2006 PROJECT SUMMARY

Name(s)
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Project Number
J1423

Project Title
Investigating the Effectiveness of Various Pepper Extracts as Natural Pesticides in Killing Aphids

Abstract

Objectives/Goals
The purpose of my project is to test the effectiveness of different kinds of pepper extracts as a natural pesticide in controlling and killing aphids. If a natural pesticide works the same or better than a chemical pesticide the natural pesticide could be an effectve alternative in destroying this pesty insect. Natural pesticide would be less harmful to the environment.

Methods/Materials
To conduct my experiment I collected four types of peppers commonly found in stores. I used a blender to help in extracting the solution from the peppers. I gathered over 100 cottonwood leaf galls which contains live aphid colonies at various stages of development. A opened gall (with aphids) was placed in plastic cup container. I sprayed equal amount of pepper extracts onto the live aphids in the cup and observe reaction of aphids to the spray. 20 test trials was done for each test variable. My control was aphids sprayed with only water.

Results
After completing my project I found that the highest percent of aphids killed on day 1 (immediate killed) was with the serrano and habanero peppers with 47% of aphids killed. The control had 0% on day 1. On day 4 the serrano was most effective with 92.5% killed and lowest percent was bell pepper with 72.5% killed. Control had 32.5% aphid dead on day 4.

Conclusions/Discussion
In conclusion, the pepper extracts proves to be an effective chemical in killing aphids. Most peppers contains capsacin at various amounts and this seem to be the main ingredient in killing the insect. Natural chemicals is always better than man-made chemicals for our environment.

Summary Statement
Determining if pepper extracts are effective in killing aphids.

Help Received
Carl Gong, Sanger Unified Science Coordinator helped with project suggestion. Mrs. Cloud guided me.