CALIFORNIA STATE SCIENCE FAIR
2004 PROJECT SUMMARY

Name(s)
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Project Number
S1901

Project Title
Antlions, The Farmer's Best Friend

Abstract

Objectives/Goals
Pest control is a very serious problem in agriculture today. Farmers need pesticides to keep their crops from being damaged by insects, but over time, insects build immunities against these pesticides so an even more powerful pesticide needs to be made to kill them and then an even more powerful one after that. My project was to find the ideal environment for the beneficial insect, the antlion, and use them as a natural insecticide. I hypothesized that antlions would create traps more effectively in the sediment they're most commonly found in.

Methods/Materials
Using a homemade sediment sift, I separated the soil I found my antlions in into five sediment sizes. I sifted 1kg of the soil to find the composition of the soil. I created six four-section containers out of pipette box lids and cardboard and filled all six containers with one sediment size. I put one antlion into each quadrant of each container and measured the dimensions of the trap each antlion made each day for a week. After a week, I changed the sediment of the containers to another sediment size, but made sure each antlion was still in their quadrants so they remained a constant. I would then measure once again for a week and recorded the dimensions of the traps.

Results
After sifting 1kg of the soil, I found that 70.9% of the soil was composed of the finest sediment size. My data showed that antlions created traps larger and more often in the finest sediment size.

Conclusions/Discussion
I conclude that my hypothesis was supported. From the data I have collected, it showed that in fact, the antlions did create traps in the finest sediment size; much better than the other sizes.

Summary Statement
Finding the ideal environment for the beneficial insect, the antlion, for the use of a natural insecticide.

Help Received
Dr. Jay Vavra helped advise my project.