Name(s)
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Project Number
J2212

Project Title
The Effects of Organic vs. Inorganic Insecticides: The Ariolimax californicus's Ability to Locate Primary Food Sources

Abstract

Objectives/Goals
The purpose of the experiment was to determine if organic v.s. non-organic insecticides affected the Ariolimax Californicus's ability to detect primary food sources.

Methods/Materials
25 similar aged banana slugs, plastic bin (quarantine chamber), eco-earth substrate, (5) 16-inch flat surfaces, 2 inorganic, and 2 organic insecticides, timer, food source. Five 16-inch plots of dirt, 4 of them insecticide covered leaving one as a control, two of the pesticides organic, and two inorganics. Placing a food source at the opposite end, then timed how long it took each slug to reach the food. I used 5 slugs per pesticide, and never repeated one slug for two pesticides. Then averaged the scores for each insecticide to get my results.

Results
25 banana slugs were separated into five groups to be tested whether organic vs. non-organic insecticides affected the time they were able to locate food sources, leaving one surface clear of insecticides as a control. 5 different slugs were tested for each insecticide. The inorganic insecticide sevin had the average of 17.828, a 10-minute difference to the control average of 7.736. The other inorganic pesticide Ortho got the average of 11.952, just under the organic average Captain Jack, 12.208. The last organic insecticide Dr. Earth averaged just under 10 minutes at 9.674.

Conclusions/Discussion
Based on the results concluded from our tested I can clearly state that insecticides do in fact affect the way banana slugs find food. I saw that with the highest average Sevin, was 10 minutes different from the control average. However, one of the inorganic insecticides had a lower average than an organic one, meaning it affected the slug less than an organic. This means there is not a clear distinction between inorganics and organics, however, there is a clear distinction between an insecticide opposed to none.

Summary Statement
By testing 4 different insecticides, 2 organic, and 2 inorganic, and then comparing the averages to the control, I was able to conclude that insecticides meant for insects (not slugs) affect the way that banana slugs find food.

Help Received
My science teacher helped me to narrow down my investigative question as well as having weekly meetings to discuss and critique out weekly progress. I was also given some helpful research papers about the Ariolimax Californicus slime trails by Jan Leonard and John Pearse, UCSC professors.