CALIFORNIA STATE SCIENCE FAIR
2002 PROJECT SUMMARY

Name(s)
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Project Number
J1412

Project Title
Effects of a Natural Poison on Mosquito Development: Year III

Abstract

Objectives/Goals
My objective was to learn if a "natural poison" derived from buckeye blossoms could be effective in stopping the development of mosquitoes.

Methods/Materials
I collected buckeye blossoms. I created a "natural poison" by blending and soaking the buckeye blossoms in bottled spring water for 14 days. I eliminated the buckeye blossoms and used the "poisonous" water to fill 40 containers. I poured 8 oz. of poison into 10 containers for the 100%, 6oz. of poison and 2 oz. of bottled spring water (B.S.W.)into 10 other containers for the 75%, 4oz. of poison and 4oz. of B.S.W. into 10 other containers for the 50%, and 2oz of poison and 6 oz. of B.S.W. into 10 other containers for the 25%. I poured 8oz. of B.S.W. into 10 containers for the "control." I placed one mosquito egg raft into each of the 50 containers. I conducted this experiment and made observations for six days.

Results
The 75% and 100% solutions both had the same effects. In the ten 75% and 100% containers, I found no life. The egg rafts never split apart and the eggs never hatched. They appeared to sit on top of the poisonous water for six days. I learned that the 50% solution was less effective than the 75% or 100% solutions. Approximately 10% of the eggs hatched and developed into larvae. The mortality rate was 1 day. They never reached the pupae stage. I learned that the 25% solution was the least effective. Approximately 30% of the eggs hatched and developed into larvae. The mortality rate was 2-3 days. They never reached the pupae stage. I observed the control progress through the larvae stage and enter the inactive pupae stage.

Conclusions/Discussion
My conclusion is that any amount of buckeye blossoms in our vernal pools (standing water left from the rainy season) might help eliminate or at least reduce the population of the disease carrying, irritating mosquitoes. This is imortant to me because the area in which I live is "open range," and it is not within the jurisdiction of any vector control or mosquito abatement program. The residents don't like the idea of using chemicals. Buckeye is native to our open range area and the livestock tends to leave it alone.

Summary Statement
This project was done to learn if a natural poison derived from buckeye could be effective in stopping the development of mosquitoes in vernal pools in our open range area not covered by any vector control or mosquito abatement program.

Help Received
My mother helped me by proofreading my research, she helped me by taking some of the pictures, and she helped my assemble my board.