California Science Center

CALIFORNIA STATE SCIENCE FAIR
2001 PROJECT SUMMARY

Your Name (List all student names if multiple authors.)

Christine Haas

Science Fair Use Only

J1309

Project Title (Limit: 120 characters. Those beyond 120 will be ignored. See pg. 9)

EFFECT OF A NATURAL POISON ON MOSQUITO DEVELOPMENT - YEAR II

Division

J Junior (6-8) J Senior (9-12)

Preferred Category (See page 5 for descriptions.)

13 - Pharmacology / Toxicology

Abstract (Include Objective, Methods, Results, Conclusion. See samples on page 14.)

Use no attachments. Only text inside these boxes will be used for category assignment or given to your judges.

OBJECTIVE: My objective was to learn if a "natural poison" derived from buckeye could be effective in stopping the development of mosquitoes.

MATERIALS and METHODS: I collected buckeye seeds. I created a "natural poison" by soaking the buckeye seeds in bottled spring water for 14 days. After 14 days, I eliminated the buckeye seeds and used the poisonous water to fill 40 containers. I poured 8oz. of poison into 10 containers for the 100%, 6oz. of poison and 2oz. of bottled spring water (B.S.W.) into 10 more containers for the 75%, 4oz. of poison and 4oz. of B.S.W. into 10 more containers for the 50%, and 2oz of poison and 6oz. of B.S.W. into 10 more containers for the 25%. I also poured 8oz. of B.S.W. into 10 containers for a "control." I placed one mosquito egg raft into each of the 50 containers. I made observations and conducted this experiment for 12 days.

RESULTS: The 75% and the 100% solutions both had the same effects. In the ten 75% and the ten 100% containers, I found no life. I learned that the 50% solutions were less effective than the 75% or the 100% solutions. Approximately 25% of the eggs hatched and developed into larvae. The mortality rate was 1-2 days. They never reached the pupae stage I learned that the 25% solution was the least effective. Approximately 50% of the eggs hatched and developed into larvae The mortality rate was 2-3 days. They never reached the pupae stage.

CONCLUSION: My conclusion is that any amount of buckeye used in our vernal pools (water left over form the rainy season) might help eliminate or at least reduce the population of the disease carrying, irritating mosquitoes. This is important to me because the area in which I live is #open range,# and it is not within the juristiction 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 (In one sentence, state what your project is about.)

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

Help Received in Doing Project (e.g. Mother helped type report; Neighbor helped wire board; Used lab equipment at university X under the supervision of Dr. Y; Participant in NSF Young Scholars Program) See Display Regulation #8 on page 4.

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