CALIFORNIA STATE SCIENCE FAIR
2005 PROJECT SUMMARY

Name(s)
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Project Number
J1441

Project Title
Impact of Vitamins on Planarian Regeneration

Abstract

Objectives/Goals
For my science project I want to answer the question, #What are the affects of vitamins A, B, and C on the asexual reproductive rate of land planarians?# The original hypothesis is that vitamin A will help the planarians to regenerate because it is essential for growth and reproduction. Vitamins B and C are not expected to help or hurt the specimens because planarians do not have cartilage or blood.

Methods/Materials
For this experiment the worms were divided into four groups and then cut in half. Vitamin A enriched water was added to group A, vitamin B water was added to group B, and vitamin C water was added to group C. The control group had water with no vitamins added. The planarian regeneration progress was monitored daily.

Results
In this experiment, vitamin A increased the regenerative rate by 11% over the control group. Vitamin B and C both killed the planarians.

Conclusions/Discussion
This study has helped answer the original question by showing that vitamin A increases the regeneration rate of land planarians. This study does raise the question of why the groups with vitamins B and C died. What vitamins B and C have in common is that both are acids (folic acid and ascorbic acid) and both dissolve in water. In comparison, vitamin A is not water soluble because it is an oil, and therefore it does not change the acidity of the water. It can be inferred that vitamin B and C killed the planarians because they were water soluble acids. If this experiment is repeated a much lower dose of vitamin B should be used, and you should not use vitamin C.

Summary Statement
Study if vitamins that promote growth in humans also affect regeneration of flat worms.

Help Received
Science Teacher helped revise hypothesis; Father helped organize and type report.