



California Science Center
CALIFORNIA STATE SCIENCE FAIR
2001 PROJECT SUMMARY

<p>Your Name (List all student names if multiple authors.) CASSANDRA (CASSIE) C FAUSEL</p>	<p>Science Fair Use Only</p>
<p>Project Title (Limit: 120 characters. Those beyond 120 will be ignored. See pg. 9) Heads or Tails: Will Vitamin Solutions and Different Exposures to Light and Dark Change Planaria's Regeneration?</p>	<p style="font-size: 2em; font-weight: bold;">J1305</p>
<p>Preferred Category (See page 5 for descriptions.) 18 - Zoology</p>	<p>Division <input checked="" type="checkbox"/> Junior (6-8) <input type="checkbox"/> Senior (9-12)</p>
<p>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.</p> <p>OBJECTIVE: My project last year showed that Vitamins A, C and E individually helped Planaria regenerate. Now I am testing whether combinations of these Vitamins would help Planaria regenerate quicker and if changes in light exposure might effect regeneration. I think Planaria grown in combination of Vitamins A,C & E in the dark will live the longest and be the longest in length because Planaria lives mostly in dark environments.</p> <p>MATERIALS and METHODS: This is the procedure followed: 1. Defined four groups of Vitamin solutions: A & C; A & E; C & E and A, C & E. 2. Combinations were exposed to either 24-hour light, 24 hour dark or 12 hours of light and 12 hours of dark. The Planaria were cut into head and tail pieces. Using a log sheet to measure the head and tail pieces, measurements and water changes were performed and logged weekly.</p> <p>RESULTS: Planaria exposed to Light 24 hours a day showed combination of Vitamin A & C tail grew larger than the Control. The Planaria exposed to Dark 24 hours a day showed combination of Vitamin A & E head and tail grew larger than the Control. The Light/Dark combination of Vitamins A & E had head growth about the same as the Control and the tail grew larger than the Control. Only Control and Vitamin A & E survived the whole experiment. All Planaria that lived in combinations containing Vitamin C died before the end of the experiment. There were no obvious advantages to growth in any of the Light controlled environments.</p> <p>CONCLUSION: In my previous experiment, individual Vitamins showed a growth advantage. In this experiment, Vitamin A & E showed a growth advantage ove the control. This means that Vitamin combinations provided important nutrients promoting Planaria growth regeneration. All other vitamin combinations did not show growth advantage or regeneration. These combinations all contained Vitamin C and all of the Planaria in this combintaion died. The Vitamin C brand could have been toxic to the Planaria because previously Vitamin C did not kill the Planaria. The surviving Planaria of Vitamin A & E and Control had similar growth in Light, Dark and Light/Dark exposure. This concludes that Planaria can live in any exposure to light or dark.</p>	
<p>Summary Statement (In one sentence, state what your project is about.) Planarias regeneration can be affected by Vitamin solutions and different exposures to periods of light and dark.</p>	
<p>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. Mom helped type my report, Dad helped me make solution waters, measure, feed Planaria and answered many questions throughout my project.</p>	