

INTRODUCTION

Before this experiment, I had no previous experience in working with Planaria, let alone conducting my own experiment. Even though my experience was lacking, I still expected to obtain results that would answer the question, “does the temperature effect the regeneration rate of planaria?”. I also expected to gain a general knowledge of this flatworm and study its unique property of regeneration in different cold temperatures. Throughout the experiment, I learned how to apply the scientific method by formulating a hypothesis, collecting data, and recording my results so that I could see if my hypothesis was correct. I also learned how to handle different scientific tools such as the scapula and a microscope, and I learned how to carefully severe the head of a planarian so that the head is perfectly cut off from the body to promote proper regeneration.

Purpose: To learn how to apply the scientific method as well studying the property of regeneration in planaria.

Question: Does temperature have an effect on the regeneration rate of planaria?

Hypothesis: “If the head of planaria are severed and placed in a cold environment (22 C) then the regeneration rate would slow down.”

MATERIALS AND METHODS

The hypothesis was tested by severing 10 planaria heads and placing them with their bodies in a refrigerator. First, two tupperware bowls were gathered and filled with artificial water. The planaria were then gathered and placed in one of the tupperware bowls . 10 planaria were then sucked up using a pipette and placed on a microscope so that they could be seen better. The heads of the planaria were then severed with a scapula and then placed with their bodies in the bowl only containing spring water. The bowl was then wrapped in tinfoil and sealed with a rubber band, and then placed in a refrigerator. The refrigerator was placed at 40 degrees. The temperature of the refrigerator was the independent variable, and the planaria were the dependent variable.

RESULTS

The planaria were monitored and checked on daily to see if there was any regeneration taking place. After two days, the planaria of the experimental group died, while the control group survived two weeks. Figure 1 shows how long each planaria survived in both temperatures.

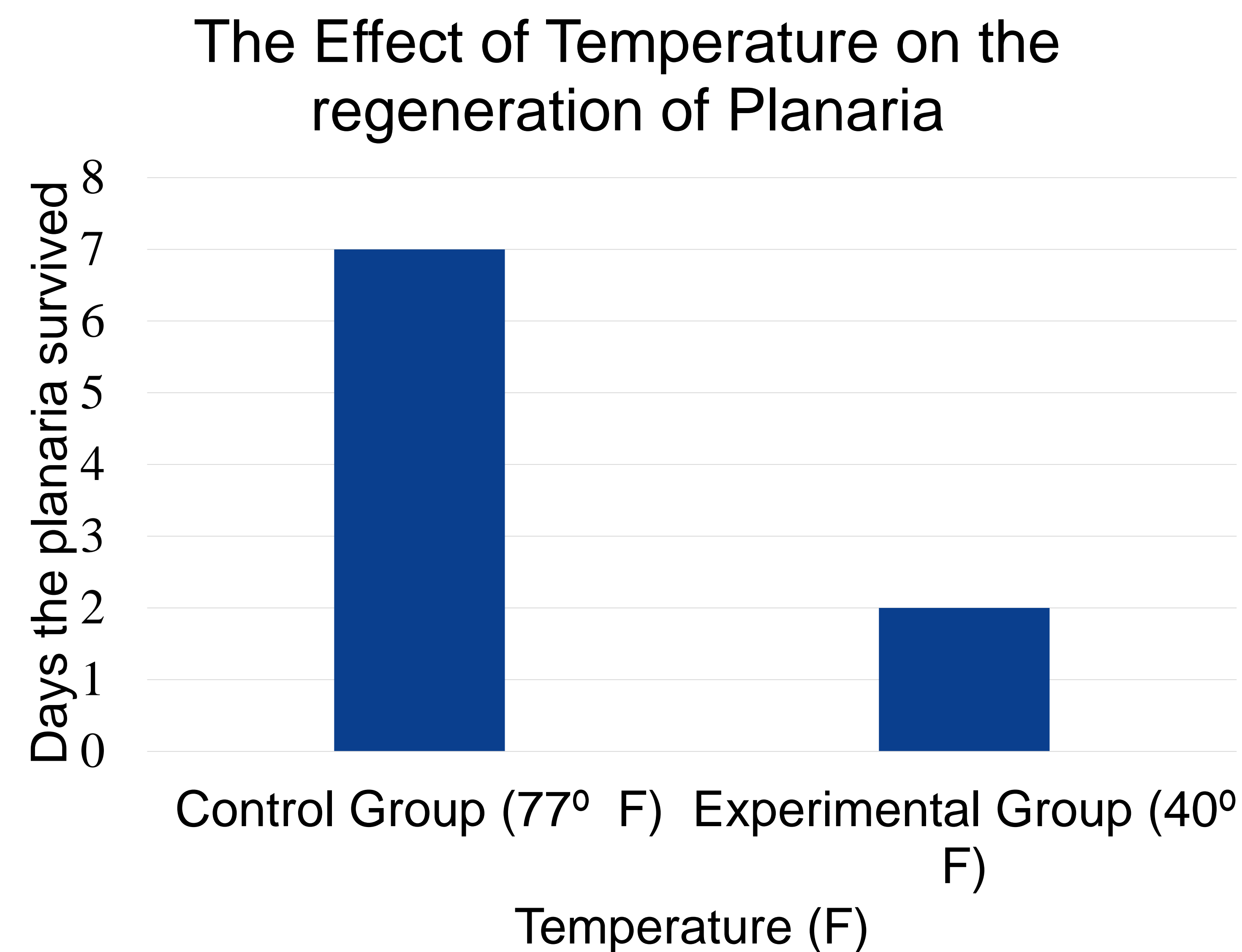


Figure 1: Survival of planaria in each temperature.

DISCUSSION OF EXPERIENCE

Based off of the results, I was unable to determine if my hypothesis was supported or not. Although cold temperatures prevented the survival of planaria, I was unable to determine the effect of the cold temperature on the regeneration rate of planaria. Even though I did not exactly get the results I wanted, I learned a lot from this experiment. I realized that it’s okay to make mistakes, and that not every experiment is going to be perfect. You have to learn from your mistakes, so that you can fix it next time around. Not only did this experiment help me learn a lot about planaria, but it also helped me learn how to work with a group, and how to stay organized throughout the process. My group and I were able to split the work up evenly and have good communication throughout the whole project. This experiment taught me a lot of things that will play a huge role in my scientific career, and I’m excited to do more in the future!

FUTURE DIRECTIONS

When the planaria were placed in the cold environment, they were covered with tinfoil so they could not be exposed to light. The next factor to investigate would be to investigate the factor of light with the cold environment. Could the exposure of planaria to light produce a different result? To test this factor you would just have to remove the tinfoil from the Tupperware bowl and repeat the same procedure.

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