The Effect of Light and Fertilizer Exposure on Planaria Regeneration

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Planarians (Dugesia Dorotocephala) are flatworms capable of regenerating. Regeneration can be impacted if environmental factors are affected. The purpose was to determine if planaria regeneration was impacted when exposed to different lights (infrared and ultraviolet) or fertilizers (nitrogen, phosphorus, and potassium). Sixty planarians were equally divided into five experimental groups and a control group. Planarians were individually placed in petri dishes and bisected producing a separate anterior and posterior end. Planarians were then exposed to either a fertilizer treatment or a light treatment. The fertilizer treatment consisted of a solution of 0.07 grams of fertilizer per liter in which 1ml was distributed per petri dish. Planarians exposed to the light treatment were exposed to IR or UV lights one time for five minutes at a distance of 15cm. Planarians were monitored for 10 days. Statistical analysis of regeneration was conducted using an ANOVA test and p-values (?=.05). Based on the ANOVA, the results did not reject the null hypothesis, meaning there was no impact on the regeneration times of the tails or heads when planaria were exposed to fertilizers based on the sample size for each replication (n=10) and the current procedure. These samples do not provide statistically significant evidence to not reject the null hypothesis. Tail regeneration had a p-value of 0.83; whereas head regeneration had a p-value of 0.23. Therefore, based on the statistical analysis, there is not enough data to support the hypothesis. Data analysis of exposure to light is pending.

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