CALIFORNIA STATE SCIENCE FAIR
2017 PROJECT SUMMARY

Name(s)

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Project Number

J2318

Project Title

Comparing the Effectiveness of Various Aloe Vera Solution Levels on the Regeneration Rate of Planaria

Abstract

Objectives/Goals

The purpose of this experiment is to determine if aloe vera can increase the regeneration rates in planaria. This is beneficial to determine how much aloe vera is needed to heal wounds and cuts. Planaria is a type of flatworm, that when cut into two or more pieces will regrow and become two or more planaria. Because of planarias regeneration capacity it was chosen to simulate wounds and cuts. Aloe vera was tested to determine if it helps speed up regeneration rates of planaria.

Methods/Materials

This test included 40 Planaria. The specimen were divided into 3 sections per petri dish and filled with 7mls of water. Variables were a control w/ no aloe added, 3mls, 6mls and 9mls of aloe solution. Cleaned petri dishes daily and add Aloe to all test groups except control group which only contained water. Observe each test planaria for regeneration rate under a dissection microscope and measured growth with a ruler for 10 days.

Results

After 10 days planaria head control =average growth .66cm in length. Planaria body control =average growth .83cm in length. Planaria tail control =average growth .62cm in length. Planaria heads/ 3 ml of aloe vera =average growth .72cm in length. Planaria bodies /3 ml of aloe vera solution= average growth .95cm in length. Planaria tails/ 3 ml of aloe vera =average growth .82cm in length. Planaria heads /6 ml of aloe vera =average growth .58cm in length. Planaria bodies/ 6 ml of aloe vera =average growth .45cm in length. Planaria tails/ 6 ml of aloe vera=average growth .46cm in length. Planaria heads/ 9 ml of aloe vera=average growth .35cm in length. Planaria bodies/ 9 ml of aloe vera=average growth .32cm in length. Planaria tails/ 9 ml of aloe vera=average growth .26cm in length.

Conclusions/Discussion

The hypothesis showed to be correct, it was stated that 3ml of aloe vera added to planaria and water would increase the regeneration rate. Higher concentration levels of aloe vera ended the life of the planaria. Growth was shown in the 6ml and 9ml aloe solution, but over the ten day test ultimately died. This study did show in low doses aloe vera proves to be effective at increasing the regeneration rate of planaria. This project is important, because it proves that dosage plays a very important role. The homeopathic industry is a multibillion dollar industry and growing every year with very little scientific research to back up what is being sold to the public as a healthy remedy.

Summary Statement

Natural remedies are becoming more popular, to determine if they are really effective aloe vera was chosen as a wound and cut remedy and tested on the regeneration rate of planaria

Help Received

Parents took photos