The Effect of Acid Precipitation on the Vascular and Endocrine System of Plants

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The purpose of this experiment is to explore how acid precipitation affects the vascular and endocrine system of plants as measured by the rate of transpiration and degree of gravitropism of tomato plants. It is hypothesized that both the rate of transpiration and efficiency of gravitropism will decrease due to the harmful effect of acid rain. The null hypothesis is that acid rain will not affect the vascular and endocrine system of plants. One control group and two experimental groups are set up. Tomato plants will be watered with spring water, nitric acid solution, and sulfuric acid solution. The degree of gravitropism is recorded by measuring the angle formed by the horizontal line and the end of a terminal branch using a protractor. The rate of transpiration is measured using a potometer. After data collection and statistical analysis, a T-test has indicated that both nitric and sulfuric acid could negatively affect the endocrine system and vascular system. This is important, because Florida is heavily dependent on agriculture and has recently experienced a population boom, which increases the use of fossil fuels and coal-burning power plants, and thus produces more air pollution and acid rain.

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