CALIFORNIA STATE SCIENCE FAIR
2002 PROJECT SUMMARY

Name(s)
Amanda C. Lane

Project Number
22469

Project Title
The Effects of Wind Current on Transpiration in Plants

Abstract

Objectives/Goals
The goal of my project was to investigate how wind current affects transpiration in plants. I predicted that wind will increase transpiration in geranium and cactus plants, and that the rate of transpiration in geranium plants will be greater than cactus plants.

Methods/Materials
In this experiment, 20 plants were covered with plastic bags and twist ties to make sure the water in the soil didn't evaporate. Ten of the plants, 5 cacti and 5 geraniums, were exposed to wind the fist day, while the other plants, 5 cacti and 5 geraniums, had no wind. I weighed them every hour, for 7 hours, to measure how much water they would transpire. The next day I switched the plants so that the 10 with wind had no wind and the 10 without wind had wind. I recorded the results in my science log.

Results
I found that the mean decrease in mass for the geranium control group (X=2.33g, or 2.33 ml of water lost during transpiration) was significantly less than the geranium experimental (wind) group (X=3.84g). The mean decrease for the cactus experimental group (X= 49g) was significantly less than the cactus experimental group (X=2.10g). The transpiration rate was greater for the geranium control compared to the cactus control group, and greater for the geranium experimental compared to the cactus experimental group.

Conclusions/Discussion
Wind increased the transpiration rate in geranium and cactus plants. Knowing about transpiration is important because it could affect weather patterns on a larger scale and could impact the growth of other plants.

Summary Statement
My project examined how wind current affects the transpiration rate (water lost through the stomata in the leaves) in geranium and cactus plants.

Help Received
Mom and uncle helped with the graphs, and dad helped with statistics and experimental design.