CALIFORNIA STATE SCIENCE FAIR
2003 PROJECT SUMMARY

Name(s)
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Project Number
J1811

Project Title
Rain, Rain, Go Away!

Abstract

Objectives/Goals
Objective: To learn if acid rain would have an effect on building materials.

Methods/Materials
I chose 13 common building materials that would be used in building outdoor structures or used for outdoor decoration. I put one of each of the materials into 2 separate groups: 1)distilled water (control group) or b)acid rain group. I used a 90% water and 10% sulfuric solution to form the acid rain. I first weighed each individual piece of building material and recorded the data. I then took each group separately and individually sprayed each piece with 20 squirts of either the acid rain solution or the distilled water. I then moved each piece back to its predetermined group and location. I did this daily for 1 week. At the end of the week I took each piece, brushed off any residue, weighed it and then continued with the daily spraying process. I continued this process for 4 weeks.

Results
ACID RAIN GROUP: Final results showed that 6 out of 13 pieces had a weight gain with wood and brick having the most significant. 7 out of 13 pieces had a weight loss with limestone, marble and travertine having the most significant recorded loss. 0 out of 13 pieces stayed the same. While most of the pieces had an insignificant weight gain the most significant change in each piece of building material was in appearance with the exception of limestone, marble and travertine that had the most significant weight loss.

DISTILLED WATER GROUP: Final results showed that 10 out of 13 pieces had a weight gain with roof tile having the most significant gain. 3 out of 13 pieces had a weight loss with cement and steel having the most significant loss. 0 out of 13 stayed the same. Most of the pieces had a very insignificant weight loss or gain. There was not a significant change in appearance from any of the building materials.

Conclusions/Discussion
Acid rain does have a definite effect on building materials. Although there was not the significant weight loss that I had anticipated there was a definite effect both visually and with weight alteration in every piece of material. It may take years to see the effect that acid rain will eventually have on building materials but over time there WILL be a definite effect.

Summary Statement
My project is about whether acid rain will have an effect on building materials.

Help Received
Mother helped me type, put my board together and buy supplies. Brother helped me with my graphs and tables. Associated Laboratories made my acid rain solution.