CALIFORNIA STATE SCIENCE FAIR
2003 PROJECT SUMMARY

Name(s)
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Project Number
S0517

Project Title
What Effect Does Substrate Have on Growing Crystals?

Abstract

Objectives/Goals
My project was to determine if different kinds of substrates will make a difference in how fast or good salt crystals will grow.

Methods/Materials
Label 9 bowls and place in 3 lines which are 1ABC, 2ABC, and 3ABC.
Put wood, styrofoam, and charcoal in proper bowls.
Day 1 mix 2 tablespoons of each bluing, salt, water, and ammonia then pour in bowls over substrate.
Day 2 add 2 tablespoons of salt in each bowl.
Day 3 repeat day 1 and don't pour on crystals.
Repeat day 1 as needed or when bottom of bowl is dry.

Results
By 24 hours crystals were forming on all the substrate.
The wood and the styrofoam had crystals start first. Crystals even grew on the sides and bottom of the bowls. By the end of the project the crystals on the styrofoam were more dense and concentrated. The crystals on the coal were not as dense and concentrated.The crystals on the wood were still finer. The bowls that still had fluid in the bottom did not have crystals formed in the bottom. The styrofoam had white crystals, wood had purple, and coal had blue.

Conclusions/Discussion
I found out that some substrate will allow salt crystals to form quicker than others. Salt crystals will form from vapors and evaporation of the solution. Crystals will form on crystals as the liquid moves to the surface of the new formed crystals. Salt crystals will have a tint due to the minerals in the substrate. The crystals are very fragile and powdery. My conclusion is that salt crystals will start growing faster and will be denser depending on the substrate.

Summary Statement
My project is to see if salt crystals will grow differently on different types of substrate.

Help Received
Grandfather helped gather material for project