



CALIFORNIA STATE SCIENCE FAIR 2006 PROJECT SUMMARY

Name(s) Demetra H. Hufnagel	Project Number J1314
Project Title The Effect of Far Infrared on the Growth of Mold	
<p style="text-align: center;">Abstract</p> <p>Objectives/Goals The purpose was to discover far infrared's effect on the growth of common bread mold. The expectation was that the far infrared would act as a fungicide on the mold, therefore killing it. This hypothesis was based on my previous work with far infrared and its effects on bacteria, its ability to create extreme heat, in addition to its capability of isolating toxins from cells, and destroying them.</p> <p>Methods/Materials</p> <ul style="list-style-type: none">- Allow common bread mold to grow on a loaf of bread.- Label the Petri dishes for identification with the sharpie.- Heat the inoculating loop with the candle flame in order to sterilize it.- Place the head of the loop into the agar, on the side of a Petri dish to cool it.- Place the loop onto one of the colonies of mold and scrape gently.- Apply the removed mold onto the agar in the Petri dish, in a zig zag fashion.- Seal the Petri dish with the laboratory film.- Repeat for all the Petri dishes.- Take five Petri dishes that are already prepared with the mold and count the amount of colonies that are apparent, with the aid of the magnifying glass, then place them into the incubator. Make sure that the incubator is set at a constant temperature.- Insert the remaining five Petri dishes under the far infrared pad, on top of a towel, for thirty-minute periods, four times a day. When the dishes are not in the machine, incubate them.- During the testing period, record the amount of colony increase or decrease every other day using the magnifying glass. <p>Results The data obtained displayed that far infrared treatment, through a far infrared pad, acts as a catalyst to mold growth. When plates of mold were exposed to the far infrared four times daily over the course of seven days, the number of fungal colonies increased.</p> <p>Conclusions/Discussion The far infrared pad treatment had a growth promoting affect on the mold. It also seemed to slow the growth down when compared to the incubated plates. It is possible for this information to be used in medicine and other fields where mold production is needed. Additionally, this data can contribute to the proper use of far infrared and far infrared pads. For example, if one were to have a fungal condition, placing a far infrared pad on it might not be the most beneficial course of action to take.</p>	
Summary Statement This project explores the effects of far infrared on the growth of common bread mold.	
Help Received Mr. Brennan supplied the paper supplies, an incubator, and the backboard. MPS Global Inc. supplied the far infrared pad.	