CALIFORNIA STATE SCIENCE FAIR
2008 PROJECT SUMMARY

Name(s)
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Project Number
J1403

Project Title
The Effect of Microwave Radiation on Fruit Mold

Abstract

Objectives/Goals
Objective is to see whether differing amounts of time, seconds,of microwave radiation will effect growth of mold on one specific fruit; the raspberry.
"Do differing time amounts of microwave radiation affect the growth of fruit mold?"

Methods/Materials
Materials: airtight containers, microwave,a camera,labels for the groups, and raspberries.
Procedure: place 8 berries into each container. Label containers by groups A-D. Microwave groups for 5 seconds[A], 10 seconds[b],15 seconds[c], and 20 seconds [d]. Observe results of mold growth on raspberries and record observations for two weeks[first after one week then every 2 to 3 days until 2 week mark just to give the mold time to show.] This experiment will include refrigeration in order to simulate normal habits of typical families. Observation of mold growth will be based on percentages noted and conclusions formed from documented results. If there is a moldy berry in the groups, I will estimate how much of the berry has molded. Not all berries have to be moldy to record percentages, as the mold can spread, and any mold can be a problem for entire group. Also, if micro waving the fruit for a set time is effective, there should be no mold on the entire group. Any amount of mold is significant.

Results
Results are the more radiation you expose the berries to , the more mold will sprout, also mold process speeds up. The reason for the process speeding up is found in further research, mold needs; dark, moist, and HEAT[radiation]. So by adding radiation, a form of heat, sped up process.

Conclusions/Discussion
Conclusions are the more radiation you add more mold will show,and mold growth process will be faster. The control group with no radiation showed least amount of mold; 18.75 percent. Group A, with 5 sec., had a steady mold growth of 56.25 percentage throughout process. Group B, with 10 sec., showed the most mold; 90.75 percent. Group C with 15 sec., doubled and had 3rd most mold growth; 68.75 percent. Group D started with 0 percent until 13th day and jumped to an amazing 75 percent! In addtion adding any amount of radiation is actually worse for the fruit than leaving it alone. In order to confirm these results, the experiment would need to be replicated at least 3 times in a controlled environment, with the same parameters. Even still, I am excited about these initial findings and believe they are intriguing enough to pursue more study in the future.

Summary Statement
The effect of microwave radiation on fruit mold.

Help Received
Grandfather assisted with research and construction of board. Mother assisted with display arrangement.