CALIFORNIA STATE SCIENCE FAIR
2006 PROJECT SUMMARY

Name(s)
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Project Number
J1913

Project Title
Maggot Mass Temperature

Abstract

Objectives/Goals
Forensic Entomologists are divided on estimating the time of exposure of decaying animal tissue in relation with maggot mass temperature. I believe an increase in maggots on decaying animal tissue will change ADH (Accumulated Degree Hours), accelerating decay independent of ambient air.

Methods/Materials
Flesh flies laid eggs on six pieces of raw liver. At their third stage of growth called the third instar, I separated the maggots into six groups of 25, 50, 75, 100, 125, and 150 and put them in individual jars with holes so that they can breathe. I used a digital thermometer to take 6 temperature measurements every hour for 20 straight hours for a total of 140 measurements. I made sure that the ambient air temperature stayed the same throughout the experiment.

Results
The increase in maggots raised the temperature on the decaying tissue against ambient air, but the temperature was not as high as I expected; for example the difference between Jar1 and Jar3 were just .30 degrees (less then a degree), this could be due to the low humidity level in my controlled environment.

Conclusions/Discussion
I believe that tissue will decay faster and ADH will be affected when maggot activity increases due to higher ambient air, and humidity. Further study is necessary as maggots can self-regulate their own temperature. We also discovered that the smell of rotting beef liver leaves a significant trace of bad odor long after the completion of an experiment.

Summary Statement
Whether maggot mass temperature effects the estimation of time of exposure in decaying animal tissue

Help Received
My father helped with the board and setup of controlled environment.