CALIFORNIA STATE SCIENCE FAIR
2009 PROJECT SUMMARY

Name(s)
Rachael E. Oliver

Project Number
J2420

Project Title
Mealworms to Pupa: Which Type of Light Bulb Will Change Mealworms into Pupa Fastest?

Abstract

Objectives/Goals
The objective of this science project was to determine which type of light bulb (black, incandescent, flourescent or infrared) changes mealworms to pupa the fastest. Based on research on the care and lifecycle of mealworms, it was thought that black light would change mealworms to pupa fastest because it was the warmest light.

Methods/Materials
Five identical environments were created and each container of 20 mealworms was placed 27.94 cm from the light. The control was a container of worms in natural light. The variable manipulated in this experiment was the type of light bulb each container of worms was exposed to. The dependent variable was measured by checking the worm population every two days looking for sheds, dead worms and pupa.

Results
The results of this experiment were that only four pupa grew from 100 mealworms. The survivability under black light was 1 pupa and 9 mealworms, incandescent was 1 pupa, 18 mealworms, and flourescent was 2 pupa and 15 mealworms.

Conclusions/Discussion
The results after 14 days were inconclusive because one more pupa is not a significant difference. Based on the survivability of worms incandescent and flourscsnt would be rated together in first place, black light in second place and natural light and infrared in third place. If improvements were made to this experiment, more time should have been allowed for mealworm growth since the average time it takes for beetles to develop is 90-114 days.

Summary Statement
How fast mealworms turn to pupa under different heat sources.

Help Received
Mother helped type reports, local feed store helped with research and supplies.