CALIFORNIA STATE SCIENCE FAIR
2016 PROJECT SUMMARY

Name(s)
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Project Number
36279

Project Title
Worms Can Survive a Drought. Can You?

Abstract

Objectives/Goals
Due to the current drought conditions in California I wanted to see what the effects were on worms.

Methods/Materials
I made 15 individual worm environments. Five environments had a worm population living under normal soil conditions, five environments had a worm population where the moisture level fluctuated from normal to dry and five environments had worms living under drought conditions. I measured and recorded the moisture level every Tuesday, Thursday and Saturday. Every 21 days I examined each individual environment and took a census of the worm population. I repeated this process three times for a total of 63 days.

Results
Under drought conditions worms secrete a mucous membrane around themselves and go into a state of estivation, similar to what animals do in hibernation. By building the mucus membrane around themselves, they create a moist protective coating that allows the worms to survive drought conditions. The worm mortality rate under normal conditions was 0% all 125 worms survived. The worm mortality rate under the normal to wet conditions was 0% all 125 worms survived. The worm mortality rate under drought conditions was 12.8% over the 63 days leaving 109 worms surviving the drought conditions.

Conclusions/Discussion
The experiment proved my hypothesis true. Worms can survive a drought. With California experiencing its fifth straight year of drought conditions this is vital information. Soil with a worm population absorbs more water and decreases water runoff. This is vital to Earth's environment by benefiting the fauna and flora of the planet.

Summary Statement
This project was to prove worms can survive a drought.

Help Received
My parents Mr. James D. Miller Jr. and Mrs. Brenda K. Miller helped me gather all supplies I needed. My parents also critiqued my presentation.