CALIFORNIA STATE SCIENCE FAIR
2015 PROJECT SUMMARY

Name(s)

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Project Number

35758

Project Title

Electric Fungi 2.0: A Practical Approach to the Propagation of Fungi as a Food, Medicine, and Cure for Hunger

Abstract

Objectives/Goals

The effect of electricity on the growth of fungi was tested. Using various types of fungi and several different voltages of electricity, we analyzed the resulting effects on growth patterns. This is important because of the possibility of growing fungi for food and medicine faster and more efficiently, using electrical shocks.

Methods/Materials

Using a variable output transformer, we shocked several samples of oyster mushrooms, pioppino mushrooms, and bread mold when they were still spores at voltages of 30 V, 60 V, 90 V, and 120 V, leaving a control group unshocked. We measured their growth each day for a trial period varying from 13 to 40 days depending on the type of fungi, and analyzed their results at the end.

Results

We found that, overall, electrical shocks made the fungi grow anywhere from 2-15% better.

Conclusions/Discussion

The discovery of this phenomenon is very useful for the production of various foods and medicines. Overall, our hypothesis that electrical shocks help the propagation of fungi was correct. There are several reasons for why this is, ranging from electricity activating growth enzymes to the importance of electrical shocks in intramycelium communication, an interesting phenomenon to continue to study.

Summary Statement

We discovered that by shocking various types of fungi with varying voltages, their growth is positively effected.

Help Received