



Soil Biocube

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Abstract

The summary of our project was to take organisms found in the soil at our school, and single out their DNA and see if we were able to find any new species done by this. We singled out their DNA by centrifuging and does a gel electrophoresis. However, our results were unfortunately unsuccessful in the way that our DNA did not show up, and we did not find a new DNA strand. Not finding a new DNA strand means we did not find a new species.

Introduction

For our project, we decided to go into our school soil, and collect all the insects and other living species we found. Including organisms we know about, we took a closer look and we found out their DNA strands by partnering with the science center who let us perform many experiments in the process that allowed us to try and decode the DNA of these organisms.

Materials & Methods .

- One cubic foot of soil was taken from a compost pile and separately from an adjacent lawn area
- The soil was screened and organisms were removed and preserved in ethanol
- The organisms were catalogued and identified using taxonomic guides
- Organisms unable to be ID'd were bacroded using BLI Barcoding Protocol
- Bioinformatics was performed using DNA Subway tools

Acknowledgements

Thank you to Cold Spring Harbor DNA labs GENEWIZ, DNA Subway, and our teacher Mr.Onufrock for assisting with our Project.

Tables & Figures

All samples were taken near and around 40.5943093415° North, 73.6331149936 ° West. There were no barcodes that were successful enough to yield any meaningful results. A table of specimens is shown below.

Photo in number order, top left is XNH-101, bottom right is XNH-112

| Specimen number | Best Identification |
|-----------------|---------------------|
| XNH-101 | Order Coleoptera |
| XNH-102 | Order Coleoptera |
| XNH-103 | family formicidae |
| XNH-104 | family formicidae |
| XNH-105 | family formicidae |
| XNH-106 | family formicidae |
| XNH-107 | Class chilopoda |
| XNH-108 | Order Coleoptera |
| XNH-109 | Order Coleoptera |
| XNH-110 | Order Coleoptera |
| XNH-111 | Class chilopoda |
| XNH-112 | family Chironomidae |



Results/Discussion

Due to issues in barcoding we were unable to barcode anything. However we were able to collect a number of diverse organisms including beetles, ants, centipedes, and a midge. We were unable to answer our research question. Sifting, collecting, and preserving organisms took an extraordinary amount of time that we did not adequately schedule for. We were unable to sort through a second biocube from a non compost area.. This makes use of simpson's index impossible. We were able to collect from only one of the biocubes. The life contained in one cubic foot of soil is extraordinary.