



The Effects of Isopods on Environment

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Q1: Research Question

- How do isopods affect the soil of their habitat?
- If an area of soil has isopods, then it will be more fertile. This soil will have a healthier pH, average CEC, and nutrient levels.
- The goals in this experiment are to assist in showing the importance of the creatures in our local ecosystem.

Q2: Methodology

- Prepare a 40-gallon tank, coconut substrate, leaf litter, hygrometer, a hide, sphagnum moss, and distilled water. Set up your tank, ensuring to have sphagnum moss in two corners.
- Take a substrate sample from both spots under the moss, under the hide, and in the center with nothing.
- Put your samples in a 2:1 slurry, then test the pH, nutrient level, and Cation Exchange Capacity (CEC).
- Release ~30 Porcellionides pruinosus into tank.
- After 2 months and 4 months, collect substrate samples from both places under the moss, under the hide, and in the center.
- Put your samples in a 2:1 slurry, then test the PH, nutrient level, and Cation Exchange Capacity (CEC) and compare data.

Q3: Data Analysis and Results



Figure 1. Each data point on this chart represents the average pH observed every two months.

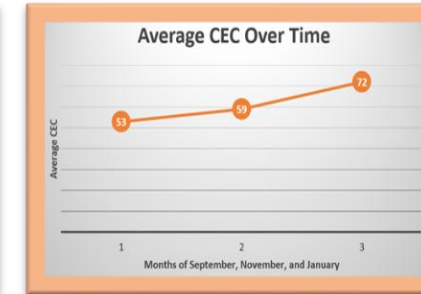


Figure 2. Each data point shown represents the average Cation Exchange Capacity observed every two months.

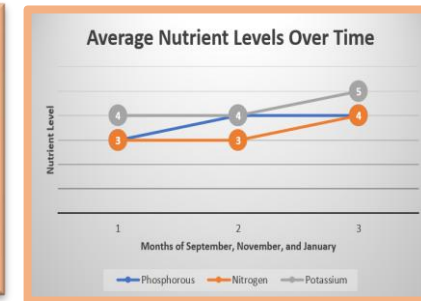


Figure 3 Data points on this chart represent the level of each nutrient taken every 2 months.

Q3: Interpretation and Conclusion

Through the data gathered during the experiment, one can clearly observe a positive change in soil conditions, within just six months. The pH of the soil started from 5.8, a range which is on the acidic side, and ended at a 7.3, which is almost perfectly neutral.

The CEC (Cation Exchange Capacity) started at a healthy 53, which would allow some growth, but ended at 72. The CEC is a way to measure how well soil can hold and retain nutrient.

Nutrient levels were measured on scales of 1-5, going in order of: depleted, deficient, adequate, sufficient, and surplus. Phosphorous, Nitrogen, and Potassium all showed growth.

The hypothesis was correct in assuming that having isopods in an area of soil will make it more fertile. We can see through the observed data that the soil's pH, CEC, and levels of phosphorous, nitrogen, and potassium have gone up throughout the 6 months that the isopods have been introduced into the environment, which directly supports the hypothesis.