

Activity 21

Determination of Food Choice by Age

Rationale: The assumption could be made that all ages of worms prefer all types of food. This activity will take one feeding cycle and the worms need to be observed, sorted, and counted several times a day for the full feeding cycle.

Objectives

- 1) Set up an experiment that has actual implications for the vermiculture.
- 2) Analyze the data collected.
- 3) Calculate a food group ratio for hatchlings, juvenile, and mature worms.
- 4) Make recommendations based on the analysis.

PDE Standards

Science and Technology

3.1.7. A,B,C

3.2.7. A,B,C,D,E,F

3.6.7. A,B

3.7.7. A,B,C,D

Environment and Ecology

4.1.7. A,B,C

4.2.7. A,C

4.6.7. A,B,C

Math

2.1.8. A,B,D,G

2.2.8. A,B,F

2.3.8. A,B,D

2.4.8. A,B,D,F

2.5.8. A,B,C,D

2.6.8. A,B,C,E,F

2.7.8. B,C,D

2.8.8. F,G,H,I,J

2.11.8. A,B

Materials

Habitat

Counting boards

Sorting cups

TI 83/84

Introduction

The quantity of different food groups may cause an observable effect on the development of the worms or the reproductive process. It is important to have the best ratio of foodstuffs for the worms. If only sexually mature worms were harvested and placed in breeding bins, the best ratio of the food groups would ensure the best reproduction, largest number of cocoons, the highest number of worms per cocoon, and

the best rate of live hatchings from each cocoon. On the other hand, the type and quantity of the food might make no difference.

Strategies

The overarching concept of this activity is that students realize a very useful set of data are being collected. These data can be useful for larger practitioners of vermiculture. The design of the activity is very straight forward and is focused on a very practical aspect of vermiculture. Very little coaching should be required.

Procedure

- 1) Mix the top two strata of the vermicompost very carefully.
- 2) Remove any unconsumed food.
- 3) Place a reasonable sized piece of each of the food groups in specific locations on the surface of the vermicompost. Leave the center free.
- 4) Replace the lid and wait for a few hours.
- 5) Open the lid and quickly collect, sort, and count the worms according to the age groups.
- 6) Place all the worms together and replace them in the center of the surface of the vermicompost.
- 7) Repeat this sampling process once or twice a day for 10 collections.
- 8) Replenish any consumed food groups after each sampling.
- 9) Record all data in the journal and Data Table 1.
- 10) Draw conclusions from the results.

Expectations

The students should be able to:

- 1) collect, sort, and count the worms without coaching.
- 2) complete the Data Table.
- 3) draw conclusions from the results calculated in the Data Table.
- 4) make predictions of the food group for each age group.

