

Pill bug vs environment lab essay sample



**ASSIGN
BUSTER**

Background Information-

Pill Bugs are also known as wood lice. Pill Bugs are actually isopods and not bugs. They are dark brown or black and they have 7 legs. Pill Bugs mostly eat rotten vegetation such as vegetables. Pill bugs live in wet locations. They are found under damp objects or in organic garbage. If pill bugs enter a building, they will often dry out and die. There are 5 types of pill bugs, but are extremely similar. The pill bug has a tendency to roll up to protect themselves from harm; they were given the nickname "rollie pollies" because of this. They also are very active and love to try to escape.

Question- What type of environment attracts the most amounts of pill bugs?

Hypothesis- The pill bugs will be attracted to the soil more because it is closer in texture and make to their own natural habitat. Their natural habitat is under rocks, with soil and leaves.

Variables-

Manipulated Variable= Environment

Responding Variable= Amount of pill bugs

Controlled Variable= amount of environment (25 ml), amount of pill bugs (15), choice plate, temperature, and time of trials.

Controlling Variables-

The first variable that needed to be controlled was the amount of environment in each section of the choice plate, ultimately creating a

necessity to make the choice plate a controlled variable. To control the environment, specific measurements of each type was used in the certain place of the choice plate. Next the amount of pill bugs as controlled by using the same 15 pill bugs each time. The temperature remained at room temperature the entire time, not once was it changed. This was important because if the temperature changed then the pill bugs may react in a different way. Last controlled variable is the time of the trials. Each trial is two minutes long, after the two minutes the data was collected. (The trials began after giving the bugs a two-minute grave period)

Procedure-

1. Pour 25 ml of environment of the 4 types of environment (rocks, soils, pine shavings, and moss) into each individual place of the choice plate.
2. Place the 15 pill bugs into the center of the choice plate and let them feel around, while placing a cover over the choice plate.
3. After two minutes of exploration the timer is started, and a two-minute interval is timed.
4. After two minutes the bugs are counted in each environment and the data is recorded.
5. Collect pill bugs
6. Repeat steps 3 and 4 five times. Record data.

Diagram-

Data Collection:

The Effect of Environment on Pill Bugs

Types of Environment

(+/- 1)

(bugs)

Trial

Soil

Rock

Wood Chips

Moss

N/A or Dead

Observations during the Experiment:

One Pill bug died after trial one and was always counted as in the N/A section. Two bugs during the experiment curled up into balls and remained for two minutes. Most of the bugs tried to escape at least once. The protective barrier kept them in. Some of the bugs were different shapes and sizes; this could mean different genders or maybe different species.

Example Calculations-

* Averaging-adding all the numbers in a type of soil and dividing by how many there are.

$$4+3+6+4+5= 22. 22/5= 4.4$$

* Then the numbers were rounded to whole numbers

$$4.4= 4$$

Graph-

Conclusion-

The end result of the experiment yielded that one environment does not in fact attract more pill bugs than the other or at least not on a grand scale. My hypothesis was slightly wrong in saying that the pill bugs would be attracted more to the soil because it is similar in stature than the other four environments that the bugs were introduced to in this experiment. The data shows that the pill bugs liked each of the environments almost equally. As evident by the graph and the table the an average of 4 bugs liked soil, 3 liked rocks, 2 liked wood chips, 3 liked the moss and an average of 3 were in the center or the N/A section. The biggest average is in fact the soil however by only a small margin.

However, all data has uncertainty and errors. The uncertainty of the amount of bugs counted was always 1 bug. The error varied from 2 to 3 bugs of error. The error that occurred was do to the fact that the bugs are living organisms and can not stand still enough for us to count them properly. However, the numbers are mostly accurate because the data was recorded

so fast that it counter acted the bugs moving. Other than that the experiment went smoothly and without fault. The only big issue that called for a lot of error was the bugs moving when the data was being recorded. Although in the background information it was stated that they lived in moist places, they took a liking to the environments set before them. However, they would not last without constant moisture surrounding them. The weakness of the experiment was the collection of the bugs each time. That took a long to time to wrangle the bugs up after each trial.

If the experiment were to be redone or perfected the experiment would need to account for the nature of the bugs. They are prone to escaping or rolling up. Pill bugs are also hard to wrangle up when needed. In between trials when it was time to collect them, it took time to fix that. A new and quicker system should be developed to collect the bugs. Also when doing the experiment when it comes time to record how many bugs are in which type of environment and block needs to be placed at the entrance of the environment so more accurate data can be collected. It will stop the bugs from leaving when you are trying to account for what environment they were in after two minutes. All of these improvements would benefit and help to fix the human error and the weaknesses of the experiment. In all the experiment was conducted to the best ability yielding the results that although the pill bugs went to the soil more often, it was such a small margin that it can be said that they were not attracted to one environment over another.