

Pillbug Lab/AP Biology

Abstract:

This experiment tested whether pillbugs preferred a light or dark environment. We believed the pillbugs would prefer a dark environment, as this is where they tend to be found in nature. We took 8 pillbugs and set up a comparative study in a closed tray, covering half of the tray with construction paper to create a dark area and light area of equal size on the tray. We then recorded how many pillbugs were in each area of the tray every minute for ten consecutive minutes.

Problem:

Do pillbugs prefer a dark environment or lighted environment when given a choice of either environment?

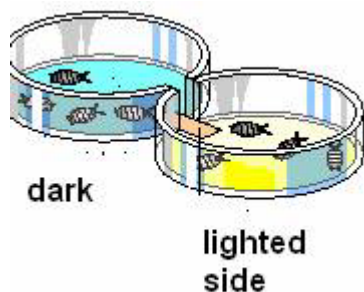
Hypothesis:

If pillbugs are given a light and dark environment, then they will prefer the dark environment.

Materials: 8 pillbugs, construction paper, enclosed tray, tape, and timing device

Procedure:

- 1.) Obtain a tray and cover half of the top of the tray with construction paper by taping the construction paper to the tray.
- 2.) Place 8 pillbugs in the tray and allow them to acclimate to the environment for ten minutes.



- 3.) Then collect data as to the area (light or dark) the pillbugs are in every consecutive minute for ten minutes.
- 4.) Return the pillbugs to their original container where you obtained them as directed by your instructor.

The lab could be modified to improve the results if more pillbugs of similar size had been provided. Choice trays with higher, slipperier sides to prevent the pillbugs from escaping would have been helpful as well. Allowing more time for data collection, as well as having more pillbugs would have provided for more experimental trials, which would have led to more acceptable and valid results.

Pillbugs live outside are able to get the necessary amount energy from organic matter by living outside, where water and organic matter is plentiful. They can, however, be found indoors in dark, damp places, such as basements or houseplants. Living in moist places is important for pillbugs so they can take in enough water, and if water is not available, they group together to prevent water loss. Pillbugs most often live in dark places because they have a negative phototaxis. Darker places also tend to be cooler and damper, which could be another reason pillbugs prefer darkness. Pillbugs probably prefer the darkness because dark environments are more moist, so therefore, they are able to take in more water to keep up with their rapid diffusion of gases for respiration. (McKenzie, 1999).

Literature Cited

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