Sample Biogas Digester Experiment

Experimental Design for Burping Bottles: This is an example of a possible experiment.

Hypothesis: Increasing the amount of paper in a bottle with manure will increase the rate at which the paper decomposes.

# Methods:

* Mix 210 grams of manure with 100 mL of water
* Pour mixture into an empty water bottle
* Repeat these steps to set up a second bottle
* Place 0.5 grams of shredded paper in bottle one
* Place 1.5 grams of shredded paper in bottle two
* Place caps back on bottles and tighten the caps
* Measure the weight of each bottle and record
* Leave both bottles in the same location
* Unscrew the caps on each of the bottles once a week
* Weight the bottles once a week and record data

# Data Collection:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Week | Weight of  Bottle 1(g) | Bottle Observations | Weight of  Bottle 1(g) | Bottle Observations |
| 0 | 310.2 |  | 312.5 |  |
| 1 | 310.1 | Unscrewing the cap released a strong odor | 312.4 | Unscrewing the cap made a loud noise |
| 2 | 310.3 |  | 312.1 |  |
| 3 | 310.0 | The bottle swelled | 312.0 |  |
| 4 | 309.8 |  | 311.6 |  |
| 5 | 309.7 |  | 311.2 |  |

Data Analysis: Graph data from table above

Conclusion: In this section students can decide if they reject or accept their hypothesis based on the data they collected through the experiment.