

A close-up, low-angle shot of a dense field of bright green grass. The blades are long, narrow, and pointed, creating a textured, vertical pattern. The background is a solid, bright white, which makes the green grass stand out prominently.

Emilie Moe

5th Grade Science Fair



Question and Prediction

Question: Does caffeine affect growth?

Prediction: Yes, caffeine does affect growth. Caffeine will make organisms growth slower.

Materials

- Planter Boxes / Seed Starter Containers
- Soil
- Caffeine Pills (200mg per pill, 18 pills)
- Water
- Assorted Grass Seed
- (200mL) Syringe
- Three Cup-Sized Cups
- 2 Spoons
- Knife or Other Sharp Object (to Crush Caffeine Pills)
- Cutting Board

Procedure

1. Fill planter boxes halfway with soil.
2. Gently push a teaspoon worth of grass seeds into soil.
3. Cover the grass seeds with a layer of soil until planter box is $\frac{3}{4}$ full.
4. Fill the 3 cups with water until each has one cup of water in it.
5. For the most caffeine water, crush 4 caffeine pills (800mg).
6. Scrape the crushed caffeine pills into one of the three cups of water.
7. Mix until mostly dissolved.
8. Using the syringe, squirt 67mL into each of the chosen most caff plants.
9. For the less caffeine water, crush 2 caffeine pills (400mg).
10. Scrape the crushed caffeine pills into one of the two remaining cups of water.

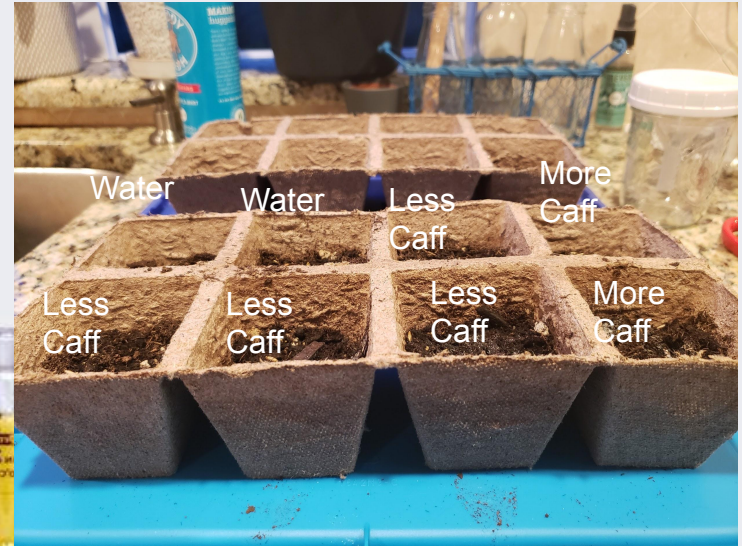
Procedure (Continued)

11. Mix until mostly dissolved

12. Using the syringe, squirt 67mL into each of the chosen less caff plants

13. For the no caff water, simply use the syringe to squirt 67mL into each of the remaining 3 plants.

Experiment May 7th 2020



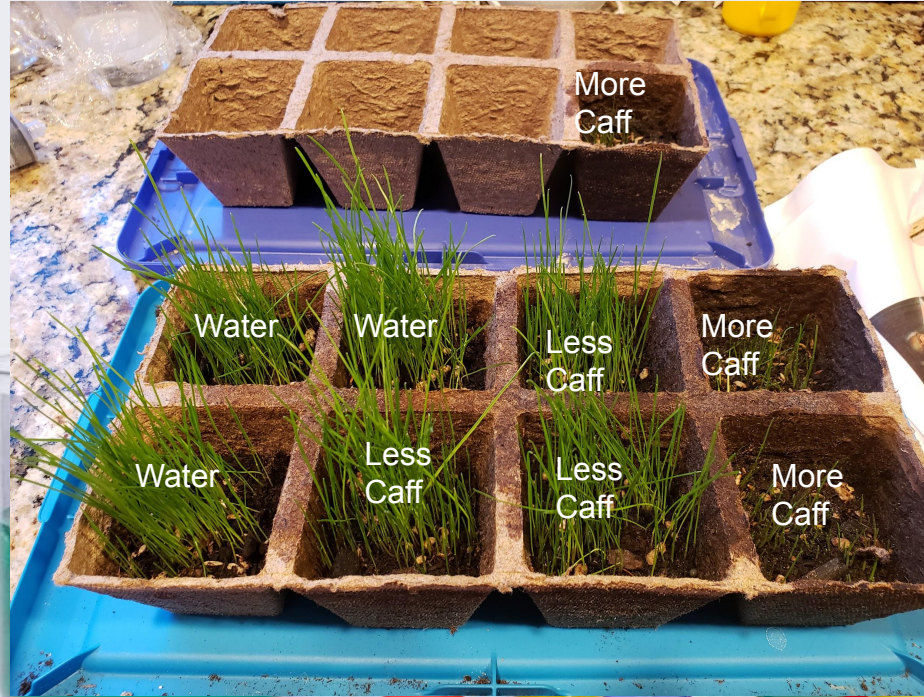
Experiment May 14th 2020



Experiment May 16th 2020



Experiment May 18th 2020



Conclusion

At the end of this experiment, I found that my prediction was correct.

Caffeine does affect an organism's growth. The plants that were watered with only water grew faster, the plants that had 2 tablets of caffeine in their water grew slightly slower, and the plants with 4 tablets of caffeine sprouted days after the others. So from this experiment I found that caffeine does affect an organism's growth.