Green Bell Peppers or Pollution?

SERC Project

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Question

What is the Effect of Pollution on a Green Bell Pepper Plant ?

Background Research

Green bell peppers are native to Mexico,Central America,and Northern South America. It takes 3 months to fully grow Green Bell Pepper plants. Water pollution can harm or kill plants. It can change the plants growing circumstances because of the acidity in the water. It can also change the environments acidity. Water pollution causes a fluctuation in acidity and damages or kills the plant. Soil pollution such as waste disposal can take away the nutritional content. The chemicals from the waste can seep into the soil and fill the soil with chemicals that harm plant cells and prevent plants from gaining nutrients. Plants can be poisoned by the toxic materials stored in the contaminated soil. Sodium hypochlorite is the active ingredient in bleach, this is the ingredient that is responsible for the bleaching.

Hypothesis

If you add bleach or trash to the plants, then the growth of the plants will decrease because pollution (the bleach and trash) is unhealthy for the plants.

Variables

IV: Type of Pollution

DV: Growth of Plant (in cm)

Control Group: Clean Plant

Experimental Group: Chemical Plant (distilled bleach), Trashy Plant

Constants: Amount of Liquid, Amount of Soil, Pots, Type of Plant

Materials

1) 3 Bonnie Green Bell Pepper Plants (not seeds)
2) Garbage (candy wrappers and chip bags)
3) Soil
4) Water
5) 3 Plant Pots
6) Distilled Bleached
7) Ruler
8) 2 Bottles
9) 2 Cups

Procedures

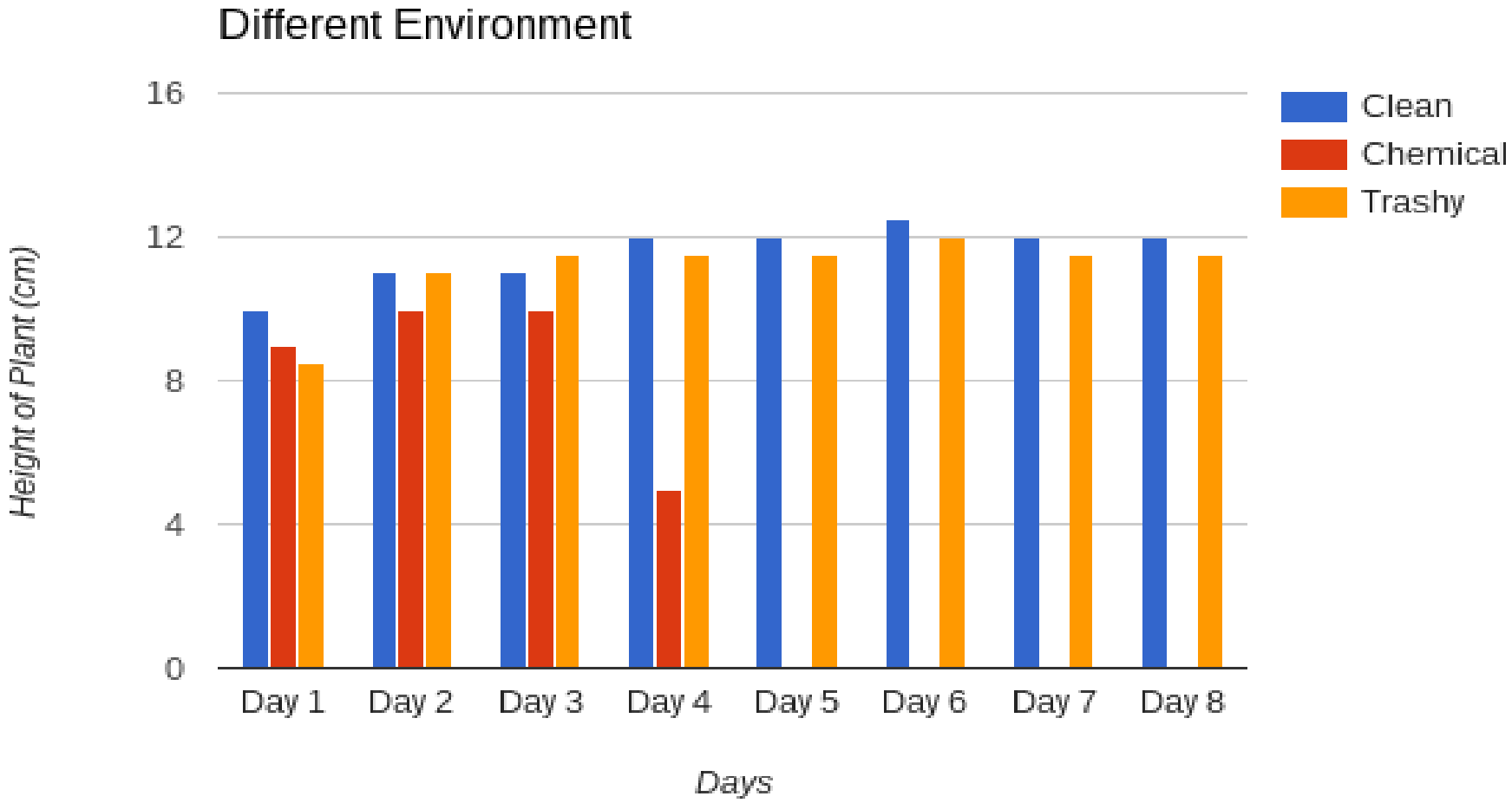
1. Replant the green bell peppers in a pot
2. Add more soil to the pot
3. Label the 1st pot “Bleach”
4. Label the 2nd pot “Trash”
5. Label the 3rd pot “Water”
6. Put cut-up candy wrappers & chip bags in the 2nd pot
7. Give 100 mL water to the “Water” and “Trash” pot

Procedures

8.Give 100 mL distilled bleach to the “Bleach” pot

9.Water the plants with distilled bleach and regular water every other day

10.Measure the plant growth every day


Different Environment
16
12
8
4
0
Height of Plant (cm)
Clean
Chemical
Trashy
Day 1
Day 2
Day 3
Day 4
Day 5
Day 6
Day 7
Day 8
Days

Results

The Clean Plant given water grew the tallest at a height of 12 cm. It also survived the longest of all 10 days. The Bleach Plant lasted until day 5. The tallest height was 9.5 cm before it died. Right before the Bleach Plant died, it was 5 cm. It didn't last long. The Trashy Plant started to die at the end and grew up to 11.5 cm.

Conclusion

Our hypothesis stated that if “you add bleach or trash to the plants, then the growth of the plants will decrease because pollution (the bleach and the trash) is unhealthy for the plants.” The outcome of our experiment proved that our hypothesis is mostly correct. The polluted plant started to die first (just a little bit). Then, the bleach plant died first on day 5. The tallest the bleach plant became was 9.5 cm before it withered and died. The tallest the trash plant grew was 12 cm. The tallest the clean plant grew was 12.5 cm. We think the bleach plant died because bleach is a harmful chemical to plants. Although we do not like to admit it, we are surrounded by trash everywhere so plants have some what adapted to a trashy environment.

Pictures


Trash
2nd Mod-Group 5


Bell Pepper
Nothing
2nd Mod-Group 5


2nd Mod-Group 5

Bibliography

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1. Bell pepper - Wikipedia https://en.wikipedia.org/wiki/Bell_pepper Feedback

1. http://greentumble.com/effect-of-pollution-on-plants/


Trash
2nd Mod Group 5
Enora Tandem;


2nd Mod-Group 5


Bell Pepper
Nothing
Bell
Trash
2nd Mod-Group 5