

Effects of Zinc Oxide on Pea Plants

Question: How does Zinc Oxide affect the edibility of Pea Plants?

Overview: Zinc oxide is a chemical compound commonly found in plant fertilizer. Although Zinc occurs naturally as the mineral zincite, it is extremely rare. Most companies manufacture Zinc Oxide synthetically. It is infused in many plant fertilizers to exhilarate the germination process. Zinc helps create chlorophyll in plants but in areas where the soil is highly contaminated with zinc only some plants can grow. Zinc is also found in humans however consuming unhealthy amounts of manufactured zinc can lead to many diseases, it can also cause low copper levels and low immunity. By adding an unhealthy amount of zinc oxide can cause negative effects in the human body. People with plant based diets are more likely to develop anemia because of the excess use of zinc oxide in plants. We can determine the edibility of the plant grown with zinc by its size and color compared to the plant without zinc oxide.

Materials:

- Soil - from Nim
- 3 pea plant seeds - from Ms. Roston
- Water - Anywhere
- 3 plastic cups - from Ms. Roston
- Zinc Oxide - from amazon or Maham's mom

Procedure:

Pea plant: high concentration of zinc oxide

1. Acquire a cup
2. Fill $\frac{3}{4}$ of the cup with soil
3. Add 10 mg of zinc oxide powder in the soil
4. Mix together
5. Plant one pea plant seed one inch below the soil
6. Water $\frac{1}{2}$ an inch per week until the pea plant starts to bloom, then add 1 inch of water
7. Record height and colour of plant every week

Pea plant: low concentration of zinc oxide

1. Acquire a cup
2. Fill $\frac{3}{4}$ of the cup with soil
3. Add 5 mg of zinc in the soil
4. Mix together
5. Plant one pea plant seed one inch below the soil
6. Water $\frac{1}{2}$ an inch per week until the pea plant starts to bloom, then add 1 inch of water

7. Record height and colour of plant every week

Pea plant: no zinc oxide

1. Acquire a cup
2. Fill $\frac{3}{4}$ of the cup with soil
3. Plant one pea plant seed one inch below the soil
4. Water $\frac{1}{2}$ an inch per week until the pea plant starts to bloom, then add 1 inch of water
5. Record height and colour of plant every week

Variables:

Controlled- amount of seeds, water, soil, sunlight, zinc oxide

Independent- the amount of water and sunlight provided to the plant

Dependent- the height and colour of the plant depends on the water and sunlight provided

Contributions:

Nim provides the soil and Maham provides plastic cups and maybe zinc. The pea plant seeds are being provided by Ms. Roston.