



MegaGro Experiment



The Effect of Gibberellic Acid of the Growth of Dwarf Peas

Problem:

How does the plant hormone Gibberellic Acid affect the growth rate of dwarf peas?

Hypothesis:

Gibberellic Acid will increase the growth rate of genetically dwarfed peas.

Equipment:

- 2 gallons potting soil
- 3 flats with segmented inserts
- Package of dwarf peas (or other dwarf variety like dwarf beans, dwarf corn or dwarf tomatoes)
- Package of tall pea seeds (or other tall variety of beans, corn or tomatoes)
- MegaGro Concentrate
- 2 Sprayers
- 2 quarts distilled water
- Centimeter ruler
- 3 clear plastic lids or cellophane

Methods/Procedures

1. Prepare soil by mixing 2 gallons of soil with 8 cups water and let mixture sit overnight.
2. Place the tall and dwarf seeds in 2 labeled containers of distilled water and let the seeds soak overnight.
3. Make a 500 parts per million solution of Gibberellic Acid with the MegaGro Concentrate: Mix 4 oz. of MegaGro Concentrate with 8 oz. distilled water. Pour solution into sprayer and set aside. Fill the second sprayer with distilled water and set aside. Label each sprayer.
4. Label the first flat "Control dwarf peas", label the second flat "gibberellic acid dwarf peas". And label the third "Control tall peas".
5. Fill each segment with soil, and place 2 seeds at least 2 centimeters (cm) apart and 5 millimeters (mm) deep in the soil of each segment.
6. Cover the flats with clear lids or cellophane.
7. After the seeds germinate, remove covers from flats
8. Select 1 seed from each segment – select ones that appear healthy and most similar in height to the others in the flat. Discard the other seedlings.
9. Measure each seedling and record its height to the nearest 0.5 centimeter (cm).
10. Spray the seedlings marked "gibberellic dwarf peas" with MegaGro solution..
11. Mist all seedlings with water until soil is moist throughout each flat.
12. Place flats under fluorescent or grow lights.
13. Measure the plants every second or third day. Measure each plant and record the date and height of each plant. Note any changes in appearance of the plants (color, branching, etc.) Water the plants before replacing under the lights.

NOTE: This experiment can be performed using multiple concentrations of Gibberellic Acid solution to determine the effect of the varying levels of Gibberellic Acid on plant growth . Simply add 1 flat of seeds for each additional concentrate level you would like to include in the experiment. You can easily create different solutions to spray on each flat by adding one capful to 32 oz. of water per 10 ppm of solution. Thus to make a 20 ppm solution, either add 2 capfuls or use ½ the water (16 oz.).