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Title: Green House Effect

Question: What is the effect of high CO2, combined with higher temperature and humidity on plants?

Hypothesis: I predict that high CO2 levels, when combined with higher temperature and humidity could retard plant growth, because, green house effect refers to the changes in the steady state in the environment and is making our planet unhealthy.

Materials:

1. Two potted small plants of the same size and type
2. A big box
3. Small bowl
4. Baking soda
5. Vinegar
6. Table lamp or small heater
7. Thermometer
8. Bottle spray with water

Procedure:

1. Place one plant inside the box
2. Place the other plant outside the box
3. Keep the small bowl inside the tank with some baking soda
4. Pour some vinegar into the bowl. It produces CO2. It's this carbon dioxide gas that you see bubbling and foaming as soon as you mix baking soda and vinegar together.
5. Close the box for some time (about 5 to 10 minutes), so the CO2 stays inside the box.
6. Repeat steps 3, 4 and 5 twice a day with fresh baking soda and vinegar.
7. Keep the table lamp or heater close to the box, so the temperature gets slightly higher inside the box.
8. Make sure the temperature inside the box is only about 2 or 4 degrees higher than the outside temperature.
9. Spray some water inside the walls of the box to increase humidity level.
10. Take pictures of the plants' growth every few days, and measure the height of the plants and count the number of leaves. Record the results.


Honeywell
20
10
0
-10
-20
-30
-40
80
60
40
20
0
-20
-40

Results:

(I used two sets of plants - tomato plants and bean plants, to test for best results)

Day One:

Tomato plants:

Bean plants:

After One Week:

Tomato plants:

Bean Plants:

After Two Weeks:

Tomato plants:

Bean Plants:

After Three Weeks:

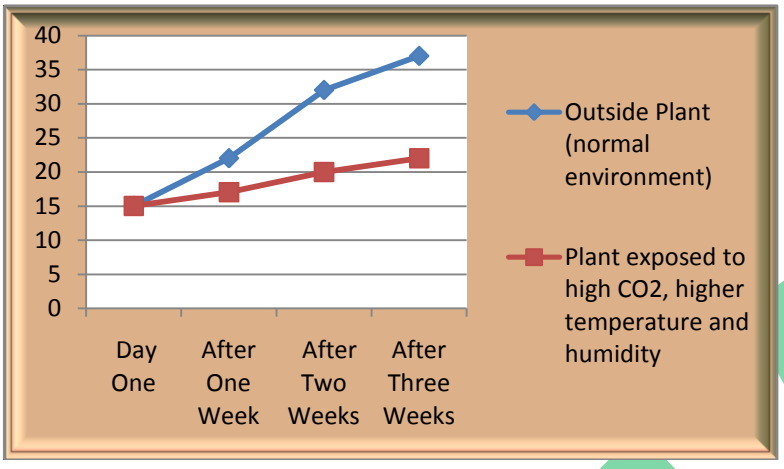
Tomato plants:

Bean Plants:

Recorded results for height measurements and number of leaves:

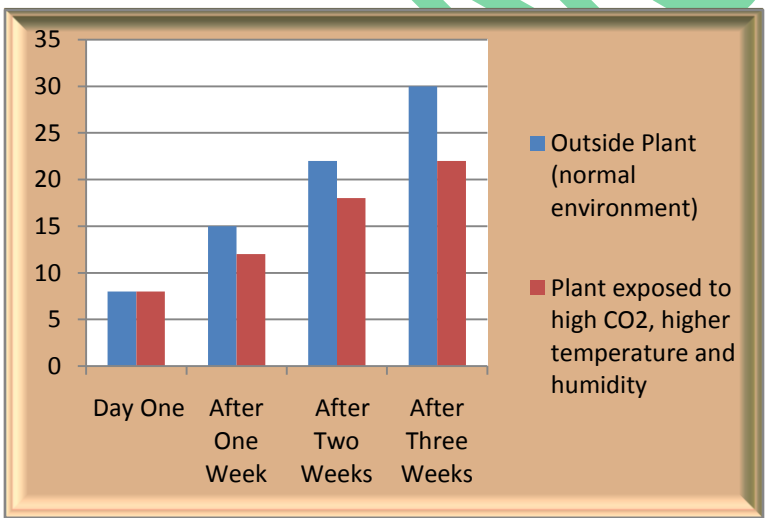
Tomato plants:

Height measurements:



	Outside Plant (normal environment)	Plant exposed to high CO2, higher temperature and humidity
Day One	12 cms	12 cms
After One Week	22 cms	15 cms
After Two Weeks	35 cms	17.5 cms
After Three Weeks	45 cms	23 cms

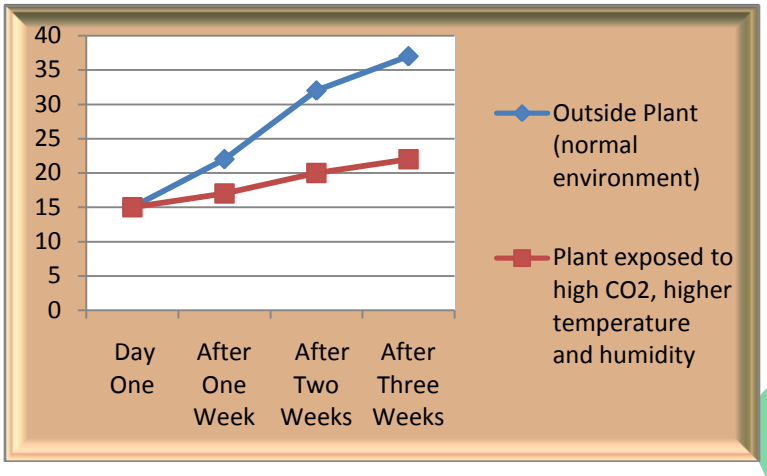
Number of leaves:



	Outside Plant (normal environment)	Plant exposed to high CO2, higher temperature and humidity
Day One	6 leaves	5 leaves
After One Week	8 leaves	5 leaves
After Two Weeks	9 leaves	7 leaves
After Three Weeks	11 leaves	8 leaves

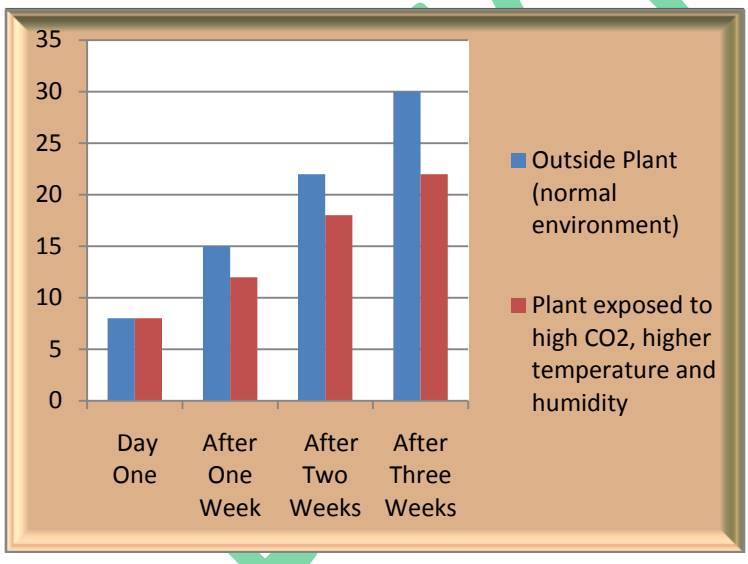
Bean plants:

Height measurements:



	Outside Plant (normal environment)	Plant exposed to high CO2, higher temperature and humidity
Day One	15 cms	15 cms
After One Week	22 cms	17 cms
After Two Weeks	32 cms	20 cms
After Three Weeks	37 cms	22 cms

Number of leaves:



	Outside Plant (normal environment)	Plant exposed to high CO2, higher temperature and humidity
Day One	8 leaves	8 leaves
After One Week	15 leaves	12 leaves
After Two Weeks	22 leaves	18 leaves
After Three Weeks	30 leaves	22 leaves

Conclusion:

The greenhouse effect refers to the change in the steady state temperature of the planet. Greenhouse gases include water vapor, carbon dioxide, nitrous oxide, and methane, which warm the atmosphere. Extreme greenhouse effect is unhealthy for our planet.

In this experiment, a plant was grown in a normal steady state environment and another plant was grown in extreme conditions of high CO2 levels, higher temperature and humidity.

The results clearly show that the plants grown under extreme conditions did not grow as healthy as the outside plants.

Therefore, high CO2, increased temperature and humidity, clearly causes retardation in plants.