The Effect of Gibberellic Acid on Stem Growth

In this activity, you will treat plants with a hormone and compare their growth to that of untreated plants.

Materials

ruler
safety goggles
gibberellic acid solution
2 bean seedlings
2 plant misters
potting mixture
2 plastic foam cups

Procedure

3. Obtain two cups. Write your name on both cups. On one cup, write "treated." On the other cup, write "control." Fill each cup about 314 full of potting mixture. Place a bean seedling in each cup and cover its base with more mixture. Place the plants out of direct sunlight and keep them moist.
5. After three days, measure the height of each plant in centimeters and record the data.
6. Separate the two plants by several meters. Spray the plant in the cup labelled "treated" with the plant mister labelled "gibberellic acid." Continue to spray the stem and leaves until they are moist but do not spray the soil. Repeat the procedure with the control plant, using the plant mister labelled "water."
8. For each of the next four days, measure each plant and record the data in your table. At the end of four days, determine how much each plant has grown since treatment with gibberellic acid. For each plant, divide the amount of growth in centimeters by the original height in centimeters to obtain the percentage of increase.
9. Select a classmate who will collect percentage- increase data for the entire class. When all data have been collected, the data keeper should calculate the class averages for the group of plants treated with gibberellic acid and for the control group.

	Height (cm)						
	Day 1	Day 2	Day 3	Day 4	Day 5	Day 5 - Day1	$\frac{\text{Day 5 - Day 1}}{\text{Day 1}}$
Treated							
Control							

Questions

1. Why did you separate the two plants when you applied gibberellic acid to one of them?
2. Which of your plants showed the greatest percentage increase in growth?
3. What factor was responsible for the faster rate of growth?
4. What is the advantage of pooling all the class data? Did your results agree with those of the class.