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Dr. Minkoff

Fast Plants Lab

15 November 2013

Fast Plants

Fast plants are a type of mustard plant that grows easily under lab conditions. The lab's purpose directed the group to design and test an experiment on how to grow fast plants, either by enhancing the growth or by stunting its growth. Changing one variable, or a different dosage would influence the plant's rate of growth. The group experiments how sugar (sucrose) can strengthen a plant's structure and growth efficiency. Plants need sucrose to survive. Based of off Nicole J. LeBoeuf's predictions, the group preformed how sugar water affects plants. The group tests fast plants by watering with a diluted solution of sucrose to enhance the growing process. (LeBoeuf, 2010)

We first construct the site where we planted twenty-eight mustard seeds. Built out of Styrofoam quadrants, shreds of cloth, a tub of water, a long piece of felt half submerged in water, and soil, the group begins the experiment. The group decided to add eight droplets of water to each plant. Using two beakers, one with sugar water and the other with regular water, the group adds different dosages with a pipette following the respected amounts. The two groups of quadrants represent the control group. The eight standard plants will receive eight drops of regular water each. Within the experimental groups, sugar and water mixed together would dilute the sucrose, making sugar water. The group believes the sugar solution would increase the plants

production by absorbing the excess electrolytes from the sucrose. The group predicts the plant receiving 6 drops of sugar water and 2 drops of regular water will grow the strongest and quickest out of all the experimental groups.

The concentration of the sugar solution equals .0004225M using 6g of sugar for every 100mL of water, four experimental groups that received two droplets of sugar water and six of regular, four experimental groups with four drops of sugar water and four of regular, another four experimental groups with six drops of sugar water and two of regular water. Then there was one final experimental group that received only eight drops of sugar water and only eight control plants that were given eight drops of regular water. Each day a member of the group would water the plants Necessary materials to perform this experiment were: plant seeds, Styrofoam quads, potting soil, sucrose sugar, water, and a beaker.

After a month of watering the plants, only two successfully grew. One individual plant that received the six drops of sugar water and two of regular grew and so did one plant that received two drops of sugar water and six of regular water. The plant that received the six drops of sugar water was much greener and had two flowers, while the one that received two drops, had none.

The plant with the two flowers absorbed three times as many electrolytes than the plant that grew none. The six drops of sugar water excited the plant, which influenced more efficient growth, while the two regular water droplets dilute the substance for easier absorption. The opposing two drops of sugar and six drops of regular water helped the plant grow more efficiently but with no budding. The plant still grew but without flowers. Sadly, all the other plants failed to grow. The probable causes are insufficient planting, too large of light intensity,

indirect contact with the seed, or the seeds are dead. Overall, the group's hypothesis proved to be correct. Growing a plant with two flowers using six drops of sugar water and two of regular. (American Society of Plant Biologists; 2001)

Bibliography:

LeBoeuf, Nicole J. "What Are the Effects of Sugar Water on Plants?" *GardenGuides*. Demand Media, Mar. 2010.

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