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Affects of Hydroponic Gardening

The purpose of this project was to determine if growing vegetables hydroponically is more effective than using soil. I hypothesized that if plants are grown hydroponically versus soil or soil + nutrient then the plants will have a larger stem diameter, longer roots, be taller, and have more leaves and bigger leaves.

The experiment involved growing 12 plants three different ways: hydroponically, in potting soil watered with distilled water, and in potting soil watered with the same nutrient mixture used in the hydroponics. Plants were watered every three days. Stem height, number of leaves and leaf size were measured daily. The root length was measured at the end.

The results confirmed the hypothesis that the hydroponic plants grew taller, had more leaves, and longer leaf length. The data collected supported the hypothesis. The hydroponics plants had the tallest average stem length with 14.5 cm, longest average root length measuring 12.75 cm and the average most number of leaves with 3.5 leaves.

The findings lead me to believe hydroponics plants grow faster, larger and healthier than other methods of growing tested. This is because they were constantly absorbing nutrients from the circulating water-nutrient mix. The hydroponic system also has an airstone, which helps add oxygen to the water. By getting more oxygen to the roots, the roots absorb nutrients faster and can increase a plant's growth rate.