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*Roots of Steel: Nutrient Absorption in Soil vs. Hydroponic Plants*

This project, Roots of Steel, was conducted to determine which growth medium, soil or hydroponics, would allow for better iron absorption in basil plants. Thirty-two grams of iron chelate were added each to the environments of 14 soil-grown plants and 14 hydroponically-grown plants. After sufficient time for the plants to absorb the iron had passed, a lysing buffer was used on leaf samples from the 10 fittest hydroponically-grown plants and a control, non-supplemented plant. This lysing allowed for the extraction and measurement of the iron using a test kit designed to measure iron in water. The soil plants died of over watering due to the dilution necessary for the iron supplement to be safe. This was because all the iron was added at once in each environment. The hydroponically-grown and supplemented plants had an average of .028 parts per million of iron more than the non-supplemented plant tested. The non-supplemented tap water used for the hydroponics had less iron than the plants, therefore they absorbed the additional iron. This supports my hypothesis that the hydroponically-grown plants would absorb more nutrients than the soil-grown plants.