The Effects of Increasing Iron Concentration on the Biomass and Fluorescence of Chlorella sp.

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This research applies to the role of Chlorella sp. as a second-generation biofuel which is a possible alternative to fossil fuels. Its biodiversity allows the algae to be sustainable as well as an effective energy supplier due to its influence on the biodiversity in the environment. The investigation was to determine what would happen to the dry weight of Chlorella sp. if the amount of iron concentration in the solution was increased. It was hypothesized that the dry weight would also increase because the iron would constitute a change in growth as iron fertilization stimulates the algae's growth. A lab was designed with six different increments of Iron 3+ Nitrate Concentration. The mean, standard deviation, and Pearson were all taken. Moreover, each trial had 14.5 ml of the algal culture with varying Iron concentrates. After five days each algae solution was filtered and dehydrated using a desiccator. The results were conclusive as the evidence supports the hypothesis; there was a substantial link between the outcomes. Iron 3+ Nitrate has a considerable impact on both the growth and fluorescence of Chlorella sp. The rate at which it grew was optimal at the 6.5 µl group as the Pearson correlation for the final mass of Chlorophyll was 0.88803, indicating a high positive correlation between both Chlorophyll mass and Iron concentration. In addition, the mean and standard deviation increased in parallel with the Iron concentration, similarly hitting its highest peak at the 6.5µl group. However, although not seen in the data I would predict that the algae would continue to grow but would eventually decline due to the natural organic decomposition.

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