Effects of Different Frequencies of Electromagnetic Radiation on the Growth Rates of the Cyanobacteria Spirulina platensis

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Spirulina platensis is a type of cyanobacteria that is often used as a protein dietary supplement as well as a whole food. It contains a high concentration of protein and essential vitamins and minerals. In this experiment, the influence of electromagnetic radiation on the growth rates of the cyanobacteria Spirulina platensis is examined. The growth rates were determined by measuring the turbidity of each water sample using a turbidity meter. The higher the turbidity means the more growth of the Spirulina platensis. From the experimental results, the Spirulina platensis under the lamp emitting red light exhibited the highest growth rate, reaching an average of 781 NTU (Nephelometric Turbidity Unit) over the course of 8 days. The Spirulina platensis under the lamp emitting blue light displayed a steady growth rate, reaching an average turbidity of 585 NTU over the course of 8 days. Spirulina platensis is frequently used in cosmetics, fish foods, and skin care products. It is also used by the food and beverage industries as a natural coloring agent. Spirulina platensis is highly valued in parts of West and Central Africa as it has been cultivated for decades as a means to treat malnutrition, starvation, and soil deficiency. Thus, this data yields valuable information for large companies, manufacturers, small farmers, or regular citizens as a means to increase the growth rates of their Spirulina platensis cultures. This would increase the availability of Spirulina platensis and allow more people to reap its many benefits.

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