

## Bioelectric Potential of Pothos under Light-Emitting Diode

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Plant bioelectric potential changes according to environmental factors such as temperature, humidity, light intensity, and atmospheric pressure. Light is the fundamental factor for plant photosynthesis. In this paper, the relationship between bioelectric potential and the wavelength of emitted light (light-emitting diodes (LEDs): blue, green, red, and white) was examined. The bioelectric potential in darkness was adopted as a control and it was compared with those at various wavelengths. The bioelectric potential was measured as a function of time. Data were recorded every 0.1 s and summed over 1 h. The summation value was adopted as a representative value. The correlation between the bioelectric potential under light emission and that of the control was determined. The correlation coefficient reached a maximum as the bioelectric potential under emission was shifted from 1–3 h of light exposure. The coefficient became lower as the wavelength of emitted light became higher. A coefficient of 0.84 under red light (660 nm) at a shifted time of 3 h was obtained, and 0.7 for green light (525 nm) at a shifted time of 1 h, 0.5 for blue (475 nm) without a shift. A coefficient of over 0.5 was obtained under white light at a shifted time of 1–2 h. The obtained result contributes to our understanding of plant physiology. In addition, it contributes to the development of a plant environmental sensor and a plant factory.

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