

ABSTRACT

Microgreens are small vegetables from various seed types of plants which are generally harvested at 7-14 days old. Because of this short age, light plays a very important role in the process of growing and developing plants. The problems are, Indonesia does have a high rainfall and erratic weather. Indonesia also has active production areas that continue to decrease every year. This research was conducted to create artificial lighting that supports indoor planters. The seeds used to test the lighting were radish and carrot seeds, both came from the Cruciferae family. Artificial lighting uses light from WS2812B LED programmed via ESP32. To detect the light produced by the LED, this study used sensor BH1750 and AS7262. The wavelengths of light used to grow microgreens are red (600 nm - 650 nm), blue (450 nm - 500 nm), and combination of both. The irradiation time divided into 12 hours and 18 hours for each light color. The results showed that radish microgreens grew better when given a combination of 50% red and 50% blue light for 18 hours, while carrot microgreens were better in 100% blue light for 12 hours.

Keywords: Microgreens, artificial lighting, wavelength, irradiation time.