

ABSTRACT

Stunting is a form of malnutrition or an unbalanced nutritional condition in children under 5 years of age. Stunting is influenced by poor food both in terms of quantity and quality of nutrition. To complete nutritional improvements, you need vegetables that are high in nutrition with optimal quality and quantity. Kale contains many nutrients such as vitamins A, C which are high in calcium, potassium, manganese, and iron. Kale also contains the highest sulforaphane, lutein, flavonoids, beta-carotene and zeaxanthin compared to other vegetables. The nutritional content of microgreens is more abundant and higher than that of mature vegetables in general. Microgreens are plants that can be ready to harvest when they are quite young, around 7-21 days. Research was carried out to create an artificial lighting system for indoor microgreen cultivation. Artificial lighting uses WS2812B LEDs as a source of light energy with an ESP8266 type microcontroller and RTC as an automatic timer. The exposure time is divided into 6 hours, 8 hours, and 12 hours with red and blue color compositions of 1:1, 1:4, and 4:1. The results of the research stated that the ratio that most affects the height of kale microgreens is 4:1 or 75% red: 25% blue, but this ratio does not produce healthy kale microgreens. Meanwhile, for the growth of the number of leaves on kale microgreens, all ratios have the same effect, resulting in 2 leaves of stem.

Keyword: Artificial Lighting, Hidroponic, Kale, Microgreens.