

## **ABSTRACT**

*The impact of the previous Covid-19 pandemic made activities outside the home limited to avoid the spread of the virus. Therefore, all activities, especially plant cultivation, are carried out indoors with the concept of urban agriculture. One of the indoor plant nursery cultivation that is the current trend of urban agriculture is microgreens. Microgreens are vegetables that can be harvested approximately 7-14 days after germination, which have a higher content of nutrients and vitamins than ordinary grown vegetables. This test was carried out with the aim of determining the work system of microgreens breeding hydroponically and designing for kale breeding and analyzing the growth results of the cultivated kale microgreens plant.. Cultivation of kale plant nurseries for 7 days hydroponically with rockwool planting media using artificial lighting irradiation based on Arduino Nano ATmega328. Irradiation uses the WS2812B type RGB LED light as an indicator with red and blue LED colors. Based on the tests that have been carried out, it can be concluded that the watering of AB mix fertilizer on kale plants makes plants grow high, sturdy, not pale and not etiolated and the leaves are not small and thin nor pale. Leaf growth begins on the fourth day and the growth of the highest number of leaves on the seventh day by 4 leaf blades, while the highest growth of the plant height on the seventh day was 10.3 cm.*

**Keywords :** *Microgreen, Hydroponics, Arduino Nano, LED, Artificial Lighting*