ABSTRACT

The surrounding environment is less supportive, such as during the rainy season causing plant conditions that do not experience the photosynthesis process perfectly due to lack of irradiation by sunlight. Artificial lighting can be implemented on plants using LEDs with AS7262 light spectrum sensor and BH1750 light intensity sensor error of 0.15 with a speed of 99.85%. The use of wavelengths or light intensity in different conditions requires readjustment to the system. Therefore, the research conducted will discuss a system that is expected to overcome these problems with fuzzy logic. Plant growth without artificial lighting begins to germinate on the 2nd day with a plant height of 0.6 – 1.2 cm. On the 3rd day it has formed roots where the height of the plant is 2.5 – 3 cm and the first leaves begin to appear, the number of leaves evenly distributed on the 6th day. Plant growth using artificial lighting alone begins to germinate on the 2nd day with a plant height of 1.7 – 2.2 cm and the first leaves have not yet appeared. On the 3rd day it has formed roots where the plant height is 3.2 – 3.5 cm and some plants begin to appear on their first leaves, the number of leaves evenly distributed on the 6th day. Plant growth using fuzzy begins to be significant when entering the 2nd day, where the plant height ranges from 1 – 2 cm, but the first leaves have not yet appeared. On day-3 the plant stems begin to germinate with a plant height of 2.5 – 3.2 cm and begin to appear their first leaves although unevenly. The number of leaves of plants using fuzzy is evenly distributed faster on day 5 than other plants.

Keywords : *Microgreen, Artificial lighting, Wavelength, Ligth Intensity, Fuzzy Logic*