

ABSTRACT

The decreasing amount of land and unpredictable weather are obstacles to get good quality crop. One alternative solution that can be used is to plant crops indoor. However, there is no sunlight which is the source of light. Therefore, the light source used is replaced with an LED lamp. The planting system is made up of 10 planting rooms that are given LED lights with varying intensity and color spectrum of light. The observation process will be carried out every day for 20 days with parameters measured are plant height and number of leaves. Data from each planting room will be compared with plants that are exposed to direct sunlight to find out how the effect of the intensity of LED lights in red, blue, white, and purple. In this reserach two experiments were carried out. In the first experiment, plants that had the highest average height was in outdoor, which had 4,3 cm because the sunlight has the wavelength needed by plants to photosynthesize. While plants in blue room had most number of leaves, which was 7 leaves because blue spectrum helped plants to grow better. The plants in the 32 Lux purple room had the highest average height, which was of 3.451 cm and the average number of leaves was 9.111 leaves. It happens because the purple LED lights are a mixture of red and blue spectrum so that the mustard green gets enough energy for the growth of the vegetative and generative phases.

Keywords: mustard green, intensity, LED, color spectrum