

ABSTRACT

Indonesia is dubbed as an agrarian country because most of the livelihoods of the Indonesian population are farmers. However, currently the area of agricultural land is very worrying due to the decline in the area of agricultural land, namely increasing development in the form of housing and also companies. Therefore, the Central Statistics Agency (BPS) states that the area of agricultural land continues to decline by around 16.906 Ha/year. The solution used to increase the productivity of farmers and to increase interest in farming among young people is by innovating a portable hydroponic prototype based on artificial lighting for indoor plant cultivation. The sensor used is BH-1750 as a light intensity sensor with an average error value on the sensor calibration results using LED lights, namely at a distance of 10 cm is 2%, at a distance of 12 cm is 2% and at a distance of 14 cm is 2% . So that the BH-1750 sensor can work well and the soil moisture sensor used to measure the humidity of the planting media used has an average error value at 50% measurement, namely 1%, at 30% measurement, namely 1.34%, at 10% measurement that is 4%. So that the soil moisture sensor can work well and is quite accurate. And the ratio that is suitable for portable devices, namely with red led lights 50% and 50% blue with an average growth value on the second day is 1.19 cm, on the fourth day is 8.07 cm, on the sixth day is 10, 77 cm, on the eighth day that is 11.05 cm, on the tenth day that is 12.74 cm. The results obtained in this study will be sent via the Antares platform.

Keywords: *Artificial lighting, BH-1750, farmer , soil moisture, antares.*