

ABSTRACT

In Indonesia, chili is a commodity that experiences fluctuations in supply and demand. Based on BPS data and the 2017 Horticultural Food Crop Outlook, it is known that the production rate of chili growth is not directly proportional to the projection of public consumption. This can be caused by unfavorable environmental conditions at the chili cultivation area. This research offers a solution in the form of making a greenhouse with an automatic watering system and a pump power monitoring system to control soil moisture. The irrigation concept used uses mist irrigation and drip irrigation. Meanwhile, the power monitoring system is based on the Internet of Things. The control used uses the on and off system. The system performance maintenance was carried out from 29 December 2020 to 5 January 2021. From the observations it was known that with stable soil moisture conditions due to system control, the growth of the test plants became relatively fast within a week with the average percentage of plant height growth reaching 77.73% and 40% of the number of test plants bearing fruit. The water and power consumption by the system during the observation reached 82Liters and 47kW. The success rate of sending data from the power monitoring system reached 81.67%. The weekly and daily patterns of soil moisture parameters became relatively stable due to the control carried out. The condition of the plants at the end of the observation period also showed quite good results.

Keywords: greenhouse, irrigation, control, chili, IoT