ABSTRACT

Soil is the main component needed by farmers in farming. Many people in Indonesia still use agriculture as their main source of livelihood. However, many farmers have a low knowledge how to know about take the value of the soil nutrient value properly, consisting of Nitrogen (N), Phosphorus (P), and Kalium (K). The problem is that many farmers do not know for sure which areas have good levels of nutrient availability and soil moisture and how to deal with soils that have low levels of nutrient availability in the soil.

To help increase crop yields, a system is designed that can simplify the process of measuring levels of Nitrogen (N), Phosphorus (P), Kalium (K) in the soil along with an information system in the form of a website that can receive data from hardware in real time using a programming language. HTML and Java script. The data that will be displayed on the website is taken from the cloud as a data distributor from the hardware. The cloud used in this work is Firebase.

The result of testing on this information system is that users can receive information from data from the software, namely the value and status of nitrogen, phosphorus, potassium, and soil moisture along with mapping the area based on the level of availability in real time through the website so as to control soil content, fertilization, and watering can be more effective. The time needed to access the website that has been created is 0.809 seconds and the accuracy of the marker category data on regional mapping is 100% with a radius of 50 m. Based on the questionnaire regarding the website needs survey, 93% of 43 respondents agreed that the regional mapping information system was made in the form of a honeycomb tile map with a radius of 50 m and 100% of respondents agreed that the website can run according to its function and make it easier to get information about regional mapping based on level. soil nutrients and moisture.

Keywords: *Information System, Nitrogen, Phosphorus, Kalium, Firebase, Website*