ABSTRACT

Climate and weather greatly affect all human activities and affect humans in making decisions for all sectors, one of which is the agricultural sector.Weather information in agriculture is very important to identify the right commodity and planting time in an area. Because weather changes are difficult to predict at this time, it is necessary to monitor the weather periodically and in real time. For that we need a weather station that can predict the climate / weather accurately, to make it easier to make decisions in the agricultural sector.

This study aims to design an IoT-based weather station monitoring tool with parameters tested, namely temperature and humidity, light intensity, wind speed, air pressure, wind direction, and rainfall using the MODUL SIM 900A module as data communication from the weather station to the IoT platform. . In addition, data from sensors located on the weather station can also be monitored on the Thingspeak platform and the ThingView application as an interface with the user and Thingspeak also functions to record data logging.

The results of testing the data in this study are the sensors used in this study have an average accuracy value of 99.57% and an average error value of 0.43% which means that the sensors in the weather station are running well. And the wind direction sensor only detects changes in the wind at degrees 0° , 45°, 90°, 135°, 180°, 225°, 270°, and 315°. This test also succeeded in implementing data communication using a MODUL SIM 900A module that can transmit data from sensors to the Thingspeak platform and display data in the form of values and graphs. And recommend soybean plants for agriculture in the Telkom University area.

***Keywords**: **Weather station, Weather, Agriculture, Internet of Things, Thingspeak**.*