ABSTRACT

In the process of making leaf compost, fertilizers are often too ripe or undercooked, so that leaf compost cannot be harvested and used for plants. Make leaf compost unused and become garbage again. This can be caused by a lack of monitoring during the fermentation period in the manufacture of leaf compost. From these problems, a tool is needed that can display pH data for monitoring, during the fermentation process of leaf compost. So that the stability of the pH in the manufacture of leaf compost during fermentation is maintained.

This final project research focuses on designing a system that can monitor the pH of leaf compost during the fermentation period, either directly or remotely using the concept of IoT (Intenet Of Things). From a system designed to use a soil pH sensor to detect the pH content of the compost. The input from the sensor will be processed by Arduino Uno and converted into pH data. The pH data will be sent to the Thingspeak IoT platform via the Esp8266 wifi module. Then the stored data will be displayed on the application created. The data will also be displayed on the 16x2 LCD built into the device. From the designed tool, it can display and show the development of pH data during fermentation. Judging from the tests that have been carried out for 30 days, it shows the development of pH data every day. For the accuracy of each sensor is more than 90% and the sensor reading error rate is less than 10%. In addition, the application that has been made can make it easier for users to monitor the progress of pH data remotely. With the results of this study, it is hoped that it will make it easier for users to monitor pH during the compost fermentation period directly or remotely. In order to produce compost that is mature and good for plants.

Keywords*: Leaf compost, Internet Of Things, Arduino Uno, Esp8266 Wifi Module.*