

ABSTRACT

Soil as a planting medium has an important role to increase agricultural yields. Various contents in the soil become a benchmark for a land that can be planted with certain commodities. Soil constituent materials also play an important role in determining soil fertility. Many parameters need to be measured to determine soil fertility. Parameters that really determine if a soil is said to be fertile are the parameters Potential Hydrogen (pH) and Electric Conductivity (EC). pH and EC measurements are generally carried out in soil laboratories. Measurement through a soil laboratory has various obstacles including the long measurement time and the price is quite expensive. This thesis aims to make devices for measuring pH and EC in the soil by utilizing sensors so that farmers can measure pH and EC in real time and easily. The results of the tool test showed that the average accuracy of the sensor on the pH parameter compared to measurements at the Bandung SIG soil laboratory was 96.32%. While the average accuracy of the EC measurement tool compared to measurements in the Bandung SIG laboratory is 95.01%. The test results show that the device works well and can be used to measure pH and EC in soil.

Keyword: *Soil Fertility, Potential Hydrogen (pH), Electric Conductivity (EC), Sensor Accuracy.*