

ABSTRACT

Hydroponic cultivation is a method of planting using water mixed with nutrients as an intermediary for plant growth. Hydroponic cultivation is in demand by public because it does not use soil media and extensive land for planting media. The concentration of nutrient solution greatly affects the growth of plants, so a measuring instrument is needed to determine the concentration of the solution. The concentration of the solution can be monitored from its electrical conductivity value (electrical conductivity). In this study, an electrical conductivity meter or EC meter based on microcontroller was made using two parallel plates as the sensor. The designed measuring instrument has a reading error value of 1.54%. The device has the precision percentage of 90.10% with accuracy percentage of 88.15%. A method used is soaking the EC probe continuously in a gradually changing value of solution concentration. From this method, the device reading error is found to be 5.38%.

Keywords: Hydroponics, Electrical Conductivity, Probe EC, Microcontroller.