

Abstract

Hydroponics is a system where plants are grown using water media without using other growing media such as soil. In hydroponics, the conditions needed by plants are controlled directly by the system, independent of the elements contained. This is what happens with conventional farming, so it requires great care. To control the level of these conditions, the proposed hydroponic system uses special sensors that can be monitored in real-time. The sensor used in this study is the VegTrug sensor. The values generated on the sensor are temperature, light, humidity, and EC (Electrical Conductivity). The content of TDS (Total Dissolved Solid) is very influential on the plant growth process; there is an ideal amount for plants to grow optimally. Therefore it is essential to know the TDS value; the estimated value is obtained based on the EC value. PH values for hydroponics around 5,5 – 6,5 PH, EC, and TDS are determined based on the nutrients needed by plants by mixing AB Mix nutrients. The main objectives of the research are related to deepening indoor hydroponic systems, monitoring the quality of nutrients in indoor hydroponic environments, so that plant growth becomes more optimal, and obtaining estimated values of PH and TDS based on EC values. The hydroponic method used is the wick system, and to process the data using the quantitative correlational method to measure the effect between two or more variables. If the EC value increases, the TDS value will also increase. Meanwhile, if the EC value drops, then the TDS value can also decrease.

Keywords: Hydroponics, Nutrition, EC (Electrical Conductivity), TDS (Total Dissolve Solid), and PH