Development of control program for plant growth parameter analysis in lowland tropical greenhouse.

Abstract

The purpose of this project is to develop control system for environment parameter in the lowland tropical greenhouse using Microcontroller. The plant growth analysis covered both inside and outside greenhouse was presented. The controller was used to monitor the temperature, relative humidity and Vapor Pressure Deficit (VPD) in the planting of chili. The study of VPD is to show air moisture conditions for plant production while taking into account different temperature levels. The controller is used to maintain the ideal VPD inside the greenhouse where it has been done for an experimental greenhouse. The higher temperature inside greenhouse, during the day time, further proves the greenhouse effect. The ideal VPD is about to achieve at midnight where the temperature ranged between 19 and 23°C at relative humidity of 54 to 57%. PIC controller was successfully being used and interfacing with computer (read data). The ability of controlling the environment parameter such as temperature, relative humidity and VPD give great potential for the application of the greenhouse in agriculture plantation.

Keyword: Relative humidity; Temperature; Plant growth; Greenhouse; Controller; Vapor pressure deficit.