ABSTRACT

CONTROL SYSTEM OF AIR TEMPERATURE AND SOIL MOISTURE USING ARDUINO MICROCONTROLLER ON CHILI PLANTS

In Indonesia, chili is considered as an important commodity because it's a common used spices to every meal and drugs. It made chili became a priority plant commodity nationally. In Indonesia, climate change is one of the determinant factors of crop production. Chili plants are one type of plant that has a dependence on climate conditions. Chili plants can survive up to an altitude of ± 2000 m above sea level. Air temperature and soil moisture can affect the growth of chili plants. The "plant factory" system is a technological innovation which allows plants to survive without being influenced by the outside environment. This system provided inspiration for design in making control system temperature and soil moisture. The system is made in the form of a simple prototype using Fuzzy Algorithm and Arduino microcontroller which have an important role in monitoring and controlling the stability of soil moisture and air temperature in chili plants. The purpose of this final project is to design and build a system that can control air temperature and soil moisture in chili plants thereby reducing dependence on climate. The method used in making this system is development and experimental. The result shows that the system can control temperature and humidity on chilli plants and keeping on the preset temperature range.

Keyword: Control system, Temperature, Humidity, Arduino, Fuzzy Algorithm