

TEMPERATURE AND HUMIDITY MONITORING SYSTEM OF UD PUTRA JEMBER DUCK EGG INCUBATOR BASED ON INTERNET OF THINGS

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ABSTRACT

Poultry is one type of livestock business that has great potential and is widely developed in Indonesia. This is due to the high level of productivity, both in producing meat and eggs, so that it can meet people's needs for animal protein. The determining factor for success in duck farming is the quality of the seeds. A partner engaged in duck farming in Jember Regency is UD Putra Jember, located in Mojomulyo Village, Puger District, East Java. The duck egg hatching process at UD Putra Jember still uses manual hatching tools, which only rely on ordinary thermometers in monitoring the temperature. The hatching tool used to hatch duck eggs has decreased in yield, causing less than optimal hatching efficiency and having an impact on difficulties in increasing yields. The application of the Internet of Things-based Monitoring System aims to simplify the process of monitoring the egg hatching incubator and increase the percentage of success in the egg hatching process. The methods used include literature study, design and assembly of components, design of monitoring applications, implementation and testing of tools. The implementation of the Internet of Things system uses the main components of the ESP32-S3, DHT-22 sensor to read temperature and humidity and will be displayed on a mobile-based application. The IoT-based monitoring system shows significant changes to the monitoring process of duck egg incubators so that it can play a direct role in the process of increasing the success of duck egg hatching.

Keywords: *Egg incubator, ESP32-S3, Firebase, DHT-22, Internet of Things*