

**SISTEM PENYIRAMAN OTOMATIS TANAMAN ANGGREK
DENDROBIUM BERBASIS IOT MENGGUNAKAN METODE DECISION
TREE**

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ABSTRACT

In the cultivation of *Dendrobium* orchids, special care is required, particularly in watering, which must be adjusted based on temperature and humidity conditions. The main issue is the inconsistency of manual watering, which can affect plant growth. This study aims to design an automatic irrigation system based on the Internet of Things (IoT) using the Decision Tree method to determine watering needs based on temperature, air humidity, and soil moisture data. The system utilizes a DHT11 sensor and a capacitive moisture sensor, processed by NodeMCU ESP8266, and sends real-time data to a monitoring website. Test results show that the system can automatically irrigate according to environmental conditions and display real-time data, improving cultivation efficiency. This system has the potential for further development to support smart, technology-based agriculture.

Keywords : Automatic irrigation, Decision Tree, Website Monitoring, *Dendrobium* Orchid Cultivation, IoT, DHT11 sensor, Soil Moisture, NodeMCU ESP8266.