ABSTRAK

SISTEM MONITORING DAN KONTROLING SUHU DAN KELEMBABAN IDEAL TANAMAN STROBERI PADA GREEN HOUSE BERBASI INTERNET OF THINGS (IOT)

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Perkembangan Teknologi yang begitu pesat pada bidang pertanian menggunakan smart farming sebagai sistem pertanian mutakhir didukung teknologi untuk menunjang produktivitas hasil pertanian. Green House merupakan bagian dari salah satu pemanfaantan smart farming bertujan untuk merekayasa lingkungan yang dapat memonitoring dan kontroling berbasis IoT (Internet of Things). Stroberi (Fragaria) salah satu buah buahan yang termasuk dalam komoditas yang mempunyai nilai ekonomi tinggi. Stroberi dibudidayakan pada dataran tinggi lingkungan tumbuh bersuhu dingin antara 17°C sampai 20°C, dengan kelembaban 80% sampai 90%. Alat monitoring dan kontroling suhu dan kelembaban ideal tanaman stroberi dibuat untuk membantu budidaya tanaman stroberi di dataran rendah yang memiliki suhu dan kelembaban yang kurang ideal. Kontroling menggunakan NodeMCU ESP8266 sebagai mikrokontroler, DHT11, Soil Moisture sensor, Kipas Blower dan Pompa DC. Sensor DHT11 digunakan untuk menguhukur suhu dan kelembaban udara dan Soil Moisture digunakan untuk mengukur kelembaban tanah dimana hasil diproses oleh NodeMCU yang kemudian ditampilkan melalui halaman website. Monitoring sistem suhu dan kelembaban ideal tamanan stroberi yang dapat memantau suhu udara, kelembaban udara dan kelembaban tanah ideal pada budidaya tanaman stroberi di green house.

Kata Kunci : Stroberi, Monitoring, Kontroling, Green House, IoT, NodeMCU, DHT11, Soil Moisture, Website.

ABSTRACT

MONITORING AND CONTROL SYSTEM OF IDEAL TEMPERATURE AND HUMIDITY OF STRAWBERRY PLANTS IN GREEN HOUSE BASED ON INTERNET OF THINGS (IOT)

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The rapid development of technology in agriculture utilizes smart farming as the latest agricultural system supported by technology to support the productivity of agricultural products. Green House is part of one of the utilization of smart farming which aims to engineer an environment that can monitor and control based on IoT (Internet of Things). Strawberry (Fragaria) is one of the fruits included in commodities that have high economic value. Strawberries are cultivated in highland growing environments with cool temperatures between 17°C to 20°C, with humidity of 80% to 90%. A monitoring and control tool for the ideal temperature and humidity of strawberry plants is made to help the cultivation of strawberry plants in lowlands that have less than ideal temperature and humidity. The control uses NodeMCU ESP8266 as a microcontroller, DHT11, Soil Moisture sensor, Blower Fan and DC Pump. The DHT11 sensor is used to measure air temperature and humidity and Soil Moisture is used to measure soil moisture where the results are processed by NodeMCU which is then displayed via a web page. The ideal temperature and humidity monitoring system for strawberry plants that can monitor the ideal air temperature, air humidity and soil moisture in the cultivation of strawberry plants in the green house.

Keywords : Strawberry, Monitoring, Controlling, Green House, IoT, NodeMCU, DHT11, Soil Moisture, Website.