

**DEVELOPMENT OF SMART FARMING FOR THE LOWLAND
STRAWBERRY (*Fragaria ananass*) PRODUCTION**

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ABSTRACT

The developed system in this paper monitors the humidity levels, moisture content of the soil and surrounding temperature. Furthermore, parameter values such as maximum and minimum temperature, maximum and minimum humidity values can be monitored accordingly by sending an SMS to the system. This system was developed by using Arduino microcontroller, GSM module, moisture sensor and DHT11 temperature/humidity sensor. This design can be used for monitoring and controlling temperature and humidity value via SMS.

The developed smart greenhouse farming used an Arduino system that will monitor the monitor and control the water content of the soil using a moisture sensor which runs under the control of a microcontroller, a DHT 11 sensor to control and monitor the greenhouse humidity and proper temperature and a Short Messaging System (SMS) to notify the caretaker/ owner on the moisture level content and temperature/humidity of the greenhouse.

The system was successfully implemented in the greenhouse. The system is working properly that is to get temperature, humidity and soil moisture. The communication is properly done between temperature, humidity and soil moisture, and Arduino Mega 2560.

The system monitored and maintain the proper temperature, humidity and soil moisture content inside the greenhouse. The device has been successfully tested under

simulated conditions and showed the ability of controlling temperature, humidity and soil moisture.

The System notified the caretaker/farmer via Short Messaging System (SMS) for the notification status (information) and triggering the water pump. The device showed the capability of sending SMS holding the latest temperature and humidity information and also the status of the greenhouse.