

ABSTRACT

Problems in the field of agribusiness are common in Indonesia. There is a problem sector that occurs in this field, namely the orchid farming sector. The problem that occurs in orchid farmers is that the technique of cultivating hybrid vanda orchids is still less than optimal and the market demand is very high. Because hybrid vanda orchids do not have planting media like other types of orchids. Therefore hybrid vanda orchids need to be watered every day to meet the needs of the photosynthesis process. Many hybrid vanda orchid cultivators on a home scale to a greenhouse scale have experienced failure in cultivating hybrid vanda orchids because they need intensive care.

With the care problem of hybrid vanda orchids. We provide an innovative device that can water hybrid vanda orchids automatically. And also, this tool can perform watering depending on the temperature of the plant and the humidity of the greenhouse. In this system, orchid farmers can control or monitor plant temperature and greenhouse humidity via smartphone. This system can help farmers or orchid cultivators to make it easier to care for hybrid vanda orchids.

This research is a qualitative study with a grounded analysis method which is how to obtain problem data in this project in the form of results from direct interviews. This study focuses on several specifications of the hybrid vanda orchid watering system. There are four testing processes in this system, including testing automatic watering through the website, watering with temperature and humidity intensity, the limitations of the hybrid vanda orchid watering system, and the last testing from user experience or orchid farmers.

In this study there are 3 sensors that are tested and there are investment costs that must be incurred, namely the DHT22 sensor on the main microcontroller, the GY906 sensor on the first microcontroller, and the GY906 sensor on the second microcontroller. This test was carried out 10 times, on the DHT22 sensor getting a humidity accuracy of 90.14%, on the first microcontroller GY906 sensor getting an average %error of 0.711%, and on the second microcontroller GY906 sensor getting an average %error of 1.161%. The total investment cost that must be incurred for 8 plant watering points is Rp. 1,896,600, the total of these costs includes the cost of tools and component costs..

Keywords: Orchid, Care, Watering, GreenHouse, %error, sensor, investment