

ABSTRACT

Environmental management in quail still uses manually. This manual method causes breeders to be less aware of the environment around the quails. The house temperature should be kept normal at 22–27.5 ° C and for a relative humidity of $\leq 79\%$. Ammonia content in quail cages ≤ 6 PPM.

In this final project, a tool is designed to monitor and control the environment in the quail cage. The input of this system is the value of temperature, humidity and ammonia levels. The sensor used to detect temperature and humidity values is the DHT22 sensor, while the sensor used to detect ammonia levels is the MQ 135 gas sensor. For cooling output in the form of a DC fan, the heating output is in the form of an incandescent lamp, the ammonia waster output is in the form of a DC fan, and a lowering output. humidity in the form of a dehumidifier.

This test is done by manually testing each component and testing the entire system. Manual testing of each component is carried out for 300 seconds for data reception is carried out per 10 seconds. The accuracy rate for S1 is 99.11%; K1 is 99.12%; S2 is 99.96%; K2 is 97.3%. The fan runs for 20-30 seconds for the temperature to return to normal (≤ 27.5 ° C). The incandescent lamp lights up for 40-60 seconds for the temperature to return to normal (≥ 22 ° C). The dehumidifier runs for 40-50 seconds for humidity to return to normal ($\leq 79\%$). The vacuum fan runs for 20 seconds for ammonia to return to normal (≤ 6 PPM). The reading of the MQ-135 sensor is below 10 PPM due to environmental factors in the quail cage for ammonia values that have not reached a minimum of 10 PPM, and the factor of the component material of the MQ-135 gas sensor is SnO₂.

Keyword:

quail environment, temperature and humidity sensor. ammonia sensor