

ABSTRACT

Chili plants are plants that are easily attacked by pests and viruses. Efforts to overcome these attacks need to be monitored regularly. The monitoring process that is carried out directly at the plantation requires time to get to the location, so the monitoring method is less efficient in the use of time. This study aims to make the monitoring process time efficient and eliminate the need to go to the location. This study also aims to assist in identifying the health conditions of these plants. This study can only classify plant health based on leaf color. This research can monitor plants on a small scale.

The monitoring system in this study takes plant images as input using the ESP32 Cam module. The captured image will be sent to the cloud platform. The image will be carried out in the identification process of plant health. The identification process is carried out using a convolutional neural network (CNN) algorithm. The results of image capture and the results of plant health detection will be displayed on the website. Users can monitor this by accessing the website.

The result of this research is the creation of a monitoring system for chili plants and the detection of chili plant health. In testing the CNN algorithm, there are five test scenarios. tests using 470 (80%) training data and 118 (20%) test data. The results of the test get a 100% accuracy value and a loss value of 0.0001434. Testing the classification accuracy level with the CNN algorithm and using images from ESP32 Cam, gets a value of 63% and a precision value of 43%.

Keywords: *chili monitoring, smart monitoring, smart farming, convolution neural network.*