

Automatic Pesticide Spray Based on Digital Image Processing in Chili Plants by Classification Backpropagation Neural Network Method

Penyemprot Pestisida Otomatis Berbasis Pengolahan Citra Digital pada Tanaman Cabai dengan Metode Klasifikasi

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In Indonesia demand for chili still quite high and as if it has become a basic necessity for the community. Along with the world in the food processing industry, there has been an increase in the need for chillies, in addition to the high demand and the selling price of chilli peppers, it has encouraged the interest of the community to cultivate chili plants. However, biotic disorders that cause obstacles in efforts to increase chili production. On the leaves and fruit of the chili plant is a part of body the plant that allows the identification process of disease in the chili plant, because there will be changes in color and texture. The process of disease detection in chili plants through digital image processing using the feature extraction method, which has previously been done pre-processing. Then at the segmentation stage a thresholding operation is carried out to separate the healthy / diseased leaves / chili. For the classification of diseases using BPNN (Backpropagation Neural Network) method. The identification process will results five types of diseases, namely fusarium wilt, bacterial wilt, leaf foliage, curly leaves, and anthracnose. From this data will be sent by smartphone via IoT to the automatic sprayer to spray the type of pesticide in accordance with the dose and type of disease identified. Based on the results of testing using 150 samples of leaf and fruit images on chili plants obtained a success percentage of 43% in the leaves and 83.33% in the chilli fruit.

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