

ABSTRAK

Rata-rata penduduk Indonesia memperoleh sumber karbohidrat dari tanaman padi. Pada proses penanaman padi biasanya dihadapkan dengan berbagai kendala baik dari luar (hama) maupun kendala dari dalam (penyakit). Kendala dari luar ini biasanya disebabkan oleh hama seperti tikus, wareng coklat, keong mas, dsb. Sedangkan kendala dari dalam biasanya disebabkan oleh penyakit pada tanaman padi itu sendiri seperti, hawar daun bakteri, bercak coklat, noda palsu, busuk batang, bakteri daun bergaris, dan beberapa penyakit virus seperti kerdil rumput, kerdil hampa, tungro, dsb. Kedua kendala di atas sangat penting untuk diketahui dan di amati karena penyebarannya yang sangat luas diberbagai wilayah dan sangat umum terjadi di ekosistem tropika seperti Indonesia ini yang mengakibatkan penurunan hasil produksi yang sangat besar.

Penelitian ini menggunakan citra data set berupa gambar sebagai citra awal untuk dilakukan klasifikasi. Terdapat beberapa proses dalam penelitian ini yang pertama proses preprocessing. Proses preprocessing terdapat beberapa tahap antara lain tahap *Labeling* dan *grayscale*,. Proses yang kedua adalah proses ekstraksi fitur, proses ini menggunakan ekstraksi fitur *Local Binary Pattern (LBP)* dan proses yang terakhir adalah klasifikasi dengan algoritma *K- Nearest Neighbor (KNN)*.

Kombinasi ekstraksi fitur *Local Binary Pattern (LBP)* dengan algoritma *K- Nearest Neighbor (KNN)*. menghasilkan akurasi yang cukup baik. pengujian dilakukan dengan menggunakan *k-fold cross validation* dan didapatkan hasil akurasi sebesar 81.6666% untuk 160 data.

Kata Kunci: Penyakit tanaman padi, Ekstraksi Fitur *Local Binary Pattern (LBP)* Dengan Algoritma *K- Nearest Neighbor (KNN)*.

ABSTRACT

On average, the Indonesian population obtains its carbohydrate source from rice. In the process of planting rice, it is usually faced with various obstacles both from outside (pests) and constraints from within (diseases). External constraints are usually caused by pests such as rats, brown wareng, snails, etc. While internal constraints are usually caused by diseases of the rice plant itself such as rats, brown wareng, snails, etc. While internal constraints are usually caused by diseases of the rice plant itself such as bacterial leaf blight, brown spot, false stain, stem rot, striped leaf bacteria, and several viral diseases such as grass dwarfism, hollow dwarfism, tungro, etc. The two obstacles above are very important to know and observe because of their wide distribution in various regions and are very common in tropical ecosystems such as Indonesia, which results in a very large reduction in production yields.

This research uses image data sets in the form of images as the initial image for classification. There are several processes in this research, the first is the preprocessing process. The preprocessing process has several stages including labeling and grayscale stages. The second process is the feature extraction process, this process uses Local Binary Pattern (LBP) feature extraction and the last process is classification with the K-Nearest Neighbor (KNN) algorithm.

The combination of Local Binary Pattern (LBP) feature extraction with the K- Nearest Neighbor (KNN) algorithm. produces quite good accuracy. testing was carried out using k-fold cross validation and obtained an accuracy of 81.6666% for 160 data.

Keywords: Rice plant disease, Local Binary Pattern (LBP) Feature Extraction with K- Nearest Neighbor (KNN) Algorithm.