

# LITERATURE SURVEY:

## **1]APPLICATION OF MACHINE LEARNING IN DETECTION OF BLAST DISEASE IN SOUTH INDIAN RICE CROPS:**

It is a well-known fact that the quality and quantity of the rice crop is reduced due to plant disease. This paper proposes rice blast disease detection mechanism using Machine learning algorithm, to identify the disease in the early stage of the crop cultivation. The proposed method would find the blast disease and reduce the crop loss and hence increase the rice agriculture production in an effective manner. The images of the paddy field are captured and eight features are extracted to distinguish the healthy and the disease affected leaves. The proposed machine learning based classification methodology includes KNN and ANN. The performance of these two classification techniques is compared using an appropriate confusion matrix. The simulation results show that KNN based classification method provides an accuracy of 85% for the blast affected leaf images and 86% for the normal leaf images. The accuracy is improved to 99% and 100% respectively for the ANN based classification mechanisms.

## **2] Deep Transfer Learning Based Rice Plant Disease Detection Model**

R. Narmadha, N. Sengottaiyan, R. J. Kavitha

Published 2022

Computer Science

Intelligent Automation & Soft Computing

In agriculture, plant diseases are mainly accountable for reduction in productivity and leads to huge economic loss. Rice is the essential food crop in Asian countries and it gets easily affected by different kinds of diseases. Because of the advent of computer vision and deep learning (DL) techniques, the rice plant diseases can be detected and reduce the burden of the farmers to save the crops. a new DL based rice plant disease diagnosis is developed using Densely Convolution

### **3]An Improved Deep Residual Convolutional Neural Network for Plant Leaf Disease Detection**

Arun Pandian J., K. K., +1 author G Arulkumaran

Published 14 September 2022

Medicine

Computational Intelligence and Neuroscience

In this research, we proposed a novel deep residual convolutional neural network with 197 layers (ResNet197) for the detection of various plant leaf diseases. Six blocks of layers were used to develop ResNet197. ResNet197 was trained and tested using a combined plant leaf disease image dataset. Scaling, cropping, flipping, padding, rotation, affine transformation, saturation, and hue transformation techniques were used to create the augmentation data of the plant leaf disease image dataset.

### **4] A Survey of Deep Convolutional Neural Networks Applied for Prediction of Plant Leaf Diseases**

- [V. Dhaka](#), [Sangeeta Vaibhav Meena](#), +4 authors [M. Woźniak](#)
- Published 1 July 2021
- Computer Science
- Sensors (Basel, Switzerland)

In the modern era, deep learning techniques have emerged as powerful tools in image recognition. Convolutional Neural Networks, one of the deep learning tools, have attained an impressive outcome in this area. Applications such as identifying objects, faces, bones, handwritten digits, and traffic signs signify the importance of Convolutional Neural Networks in the real world. The effectiveness of Convolutional Neural Networks in image recognition motivates the researchers to extend its applications in the field of agriculture for recognition of plant species, yield management, weed detection, soil, and water management, fruit counting, diseases, and pest detection, evaluating the nutrient status of plants, and much more

## **5] Convolutional Neural Networks in Detection of Plant Leaf Diseases:**

Bulent Tugrul, Elhoucine Elfatimi, Recep Eryigit

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Computer Science

Agriculture

Rapid improvements in deep learning (DL) techniques have made it possible to detect and recognize objects from images. DL approaches have recently entered various agricultural and farming applications after being successfully employed in various fields. Automatic identification of plant diseases can help farmers manage their crops more effectively, resulting in higher yields. Detecting plant disease in crops using images is an intrinsically difficult task