**ABSTRACT**

**IEEE BASE PAPER ABSTRACT:**

Agriculture accepts a basic part by virtue of the quick improvement of the general population and extended interest in food in India. Hence, it is required to increase harvest yield. One serious cause of low collect yield is an infection brought about by microorganisms, infection, and organisms. Plant disease investigation is one of the major and essential tasks in the part of cultivating. It tends to be forestalled by utilizing plant disease detection techniques. To monitor, observe or take care of plant diseases manually is a very complex task. It requires gigantic proportions of work, and moreover needs outrageous planning time; consequently, image processing is utilized to distinguish diseases of plants. Plant disease classification can be done by using machine learning algorithms which include steps like dataset creation, load pictures, pre-preparing, segmentation, feature extraction, training classifier, and classification. The main objective of this research is to construct one model, which classifies the healthy and diseased harvest leaves and predicts diseases of plants. In this paper, the researchers have trained a model to recognize some unique harvests and 26 diseases from the public dataset which contains 54,306 images of the diseases and healthy plant leaves that are collected under controlled conditions. This paper worked on the ResNets algorithm. A residual neural network (ResNet) is a subpart of the artificial neural network (ANN). ResNet algorithm contains a residual block that can be used to solve the problem of vanishing/exploding gradient. ResNet algorithm is also used for creating Residual Network. For the image classification, ResNets achieve a much well result. The ResNets techniques applied some of the parameters like scheduling learning rate, gradient clipping, and weight decay. Using the ResNet algorithm, the researchers expect high accuracy results and detecting more diseases from the various harvests.

**OUR PROPOSED ABSTRACT:**

The level of agricultural production is crucial to a nation's economic growth. The biggest obstacle to the production and quality of food, though, is plant disease. Early detection of plant diseases is essential for maintaining global health and welfare. The standard method of diagnosis entails a pathologist visiting the location and visually evaluating each plant. However, due to lower accuracy and limited accessibility of human resources, manual examination for various plant diseases is limited. To address these problems, it is necessary to develop automated methods that can quickly identify and classify a wide range of plant diseases. The presence of low-intensity information in the image background and foreground, the extreme colour similarity between healthy and diseased plant areas, the presence of noise in the samples, and changes in the position, chrominance, structure, and size of plant leaves make it difficult to accurately identify and classify plant diseases. We have developed a reliable plant disease classification system using an InceptionV3 Architecture to address the aforementioned issues. In this research, we suggested a deep learning strategy based on InceptionV3 Architecture to identify leaf diseases in a variety of plants. Finding the plant disease and its classification is our aim. The referenced dataset is taken from the well-known public source kaggle. The dataset consists of 70,295 Plant images of Apple, Blueberry, Cherry, Corn (maize), Grape, Orange, Peach, Pepper bell, Potato, Raspberry, Soybean, Strawberry and Tomato. The suggested method has the capacity to handle complex situations from a plants area and can successfully identify various forms of diseases.