

**SAARABOOMI: UPDATABLE PLANT DISEASE DETECTION  
TOOL BASED ON DEEP LEARNING STRATEGIES**

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## Abstract

The Agricultural sector has a very long history from the time of the ancient kingdoms of Sri Lanka. At present, Sri Lanka's agricultural industry is spread over four areas: plantations, fisheries, livestock, and forestry. In Sri Lanka out of whole population 31.8% involved with agricultural sector, and out of this population employed in primary production got 28.5% as Cultivated extent 3.53 mil Ha according to FAO (Food and Agriculture Organization of the United Nations).

The Ministry of Agriculture itself has identified some common issues in Sri Lanka's present agricultural landscape such as natural disasters, plant diseases, failure of food safety and less production of crops. Among those Fruit Research and Development Institute (FRDI) mentions "Pests, diseases and bad climate mainly caused the decline of the production in 2017".

Existing systems for detecting plant diseases are not updatable with new diseases and often do not give accurate results for Sri Lankan crops. For example, two or three years ago, an infection called "Piti Makuna" spread to many crops throughout Sri Lanka. At that point, the thing is, most of the methods and systems currently available in the world for the diagnosis of crop diseases such as "CropDiagnosis", "Plant Disease Doctor", "Plentix" weren't able to correctly diagnose the diseases in the leaves of Sri Lankan Crops. This is most often due to the changing climate, rainfall, soil conditions, and specific terrain near the equator, which are different from other countries in Sri Lanka. In this system there is some technique to occur a new disease and if the system recognizes this is a new disease, it will go to the validation layer and request to the user that image publish the system. Afterwards anyone can come and see that disease and give their opinion or solution to it as a comment. So, it will be more usable for users to get an accurate name of the disease and relevant solutions.

**Key Words:** Convolutional neural network, image pre-processing, Deep Learning, Machine Learnin