

## Investigating the Factors Affecting Generalization of Deep Learning Models for Plant Disease Detection

**Authors :** Praveen S. Muthukumarana, Achala C. Aponso

**Abstract :** A large percentage of global crop harvest is lost due to crop diseases. Timely identification and treatment of crop diseases is difficult in many developing nations due to insufficient trained professionals in the field of agriculture. Many crop diseases can be accurately diagnosed by visual symptoms. In the past decade, deep learning has been successfully utilized in domains such as healthcare but adoption in agriculture for plant disease detection is rare. The literature shows that models trained with popular datasets such as PlantVillage does not generalize well on real world images. This paper attempts to find out how to make plant disease identification models that generalize well with real world images.

**Keywords :** agriculture, convolutional neural network, deep learning, plant disease classification, plant disease detection, plant disease diagnosis

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