

Pomegranate Fruit and Leaf Disease Prediction using Machine Learning

Sakshi Sanjay Gaje¹, Shital Suresh Pawar²,
Vishakha Santosh Gaysamudre³, Aishwarya Rajendra Tidke⁴
Department of Artificial Intelligence & Data Science^{1,2,3,4}
Pune Vidyarthi Griha's College of Engineering, Nashik, India

Abstract: *The impact of agricultural plant diseases on farmers' economic losses is significant. These diseases can harm various parts of the plant, including the roots, fruits, leaves, and stems. Early detection of these diseases is crucial for improving agricultural productivity. In traditional agricultural systems, disease recognition relies on the expertise of agricultural professionals and experienced farmers, but this often results in lower accuracy, leading to losses for farmers. To address this issue, numerous researchers have been exploring the use of soft computing and expert systems for more accurate plant disease recognition.*

Visual identification of plant diseases is less reliable, as some diseases may not exhibit visible symptoms, or their symptoms may only become apparent late in the growing season, near the time of harvest. Fortunately, modern technology has the potential to significantly enhance agricultural production and sustainability. This paper offers a comprehensive review of techniques for detecting diseases in pomegranate plants. The study covers various stages of the disease detection process, including pre-processing, segmentation, feature extraction, and classification. Additionally, the paper provides a comparison of existing methods and highlights their limitations..

Keywords: Pomegranate, Leaf diseases, Fruit diseases, Disease prediction, ML, Disease classification, Segmentation