

Second Research Paper

Implementing Sentinel-2 Data and Machine Learning to Detect Plant Stress in Olive Groves

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Challenges in Greek Olive Cultivation

- Overview of challenges: diseases, pests, and environmental stressors.
- Mention of specific diseases affecting crop productivity.

Importance of Plant Stress Identification

- Definition of plant stress and its impact on metabolism, growth, and development.
- Importance of quick identification to mitigate effects.

Sentinel-2 and Machine Learning Approach

- Introduction to Sentinel-2 satellite data and its advantages.
- Challenges with traditional stress detection methods.
- Use of machine learning algorithms for large-scale monitoring.

Role of Satellite-Based Remote Sensing

- Cost-effectiveness and wide coverage of satellite-based remote sensing.
- Sentinel-2 applications in identifying coffee leaf rust and assessing hail damage.
- Vegetation indices for stress-induced crop damage identification.

Study Goals and Conclusion

- Overview of machine learning algorithms (SVM and Random Forest).
- Addressing the lack of a large-scale olive orchard stress assessment tool.
- Goals: finding the best classifier, optimal stress thresholds, and stress source.