



NAME OF THE PROJECT: Localization system of Xylella Fastidiosa bacteria via satellite

SHORT NAME: XYLELLA

PROGRAM: AGRICULTURAL DEVELOPMENT PROGRAM (RAP) 2014-2020, Sub-Measure 16.1 - 16.2 – “Establishment and operation of operational teams of the PES for agricultural productivity and sustainability”, Action 2 - Implementation of the Operational Plan (project) of the ESK Operational Groups for the productivity and sustainability of agriculture”

WEBSITE: xylella-satdetect.eu

STARTED AT: 3/05/2023

DURATION: 24 MONTHS

SUMMARY: The project aims to detect the pre-visual stages of infection of olive trees affected by the bacterium Xylella fastidiosa (Xf) using satellite data and Remote Sensing technics. With the use of the abovementioned, it can be monitoring the possible infection of olive orchards by Xf and also can be exploited as a tool to study and understand the spread of the bacterium Xf.

GSH is involved in the project as a project coordinator. In parallel, GSH participates in all Work Packages (WP), either as the responsible organization of the WP, or as in charge of an individual deliverable. In more detail, participates in the sections: EE1 "Literature review", EE2 "System architectural design and collection of necessary data for the detection of the Xf bacterium in olive trees, Specifications for the web application", EE3 "Development of remote sensing methods for the detection of infection by the phytopathogenic bacterium Xf in olive trees", in EE4 "Development of an integrated system - Pilot test - Laboratory control of plant samples and insect vectors of the bacterium" and EE5 "Dissemination of project results". The first WP focuses on the literature review regarding to Remote Sensing methods for identifying olive orchards affected by Xf bacterium. In the second section, GSH will design the system architecture and collect the necessary data for the project, such as satellite and UAV data. In section EE3, machine learning algorithms will be applied to imagery, that are located in regions outside of Greece (mainly in Mediterranean region) and have been affected by Xf bacterium. Afterwards, the algorithm will be optimized, at this point it is need to be mentioned that the results of this WP is essential for the next step; the pilot test, the implementation of the above-mentioned methods to the land fields of the Agricultural Cooperatives. Finally, in the last section GSH is responsible for the creation of the website of the project, social media accounts in order to disseminate the results in the optimal way.

The main activity of GSH is associated with detection of olive trees affected by the Xf bacterium by applying Remote Sensing methods and Artificial Intelligence algorithms. It will be studied the spectral response of healthy olive trees, but also those affected by the Xf bacterium (mainly in the wider area of Mediterranean region), in order to develop a system for detecting Xf infection.

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CONSORTIUM:

