

Integrated Treatment of Olive Fruit Fly (*Bactrocera oleae*), Utilization of New Technologies, Pesticide Resistance Management, Suggestions for Improving the Pesticide Program

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The control program of olive fruit fly (*Bactrocera oleae*) needs improvement from the current one. Improvement is required in its implementation, by incorporating new scientific data and new technologies into it. The use of these technologies will allow easy and real-time monitoring of bait spraying with smart devices and sensors, of the flow of spray liquid, will help organize information and will lead to the use of an automated GIS model. The automated model will help in the visualization of the fields that were sprayed and the total area, of possible overlaps and the spraying of organic products, while finally it will visualize the percentage and extent of unsprayed areas so that the required actions can be taken. In the context of the above, the NT4D program is being implemented, which aims at the optimal planning and control of spraying for the most effective implementation of the olive fruit fly control program, integrating modern technologies, means and tools. Through this program, traps and baits are checked with mobile, and GPS and a geospatial database is created with the data that is extracted. Data monitoring is done with simple Google maps and in this way, it is possible to monitor possible olive fruit fly's outbreaks, correlate density with climatic parameters, leading to better decision-making. At the same time, the course of the tractor for spraying is checked. With this method, possible overlaps, unsprayed areas and excessive speed are identified. All the above is reflected on the program's website, where videos and instructions for users are posted. From all the above, a geospatial database system has been created with the aim of storing and managing all the data (geospatial and descriptive) required to achieve the objectives of this system. Through the geographic information system (desktop GIS), the data stored in the geospatial database will be imported and processed and risk maps will be created for each pilot area.

Keywords: Olive fruit fly; pest control; smart spraying / GIS monitoring; NT4D program.