

USE OF GIS (GEOGRAPHICAL INFORMATION SYSTEM) FOR DATA MANAGEMENT AND ANALYSIS IN A *Rhynchophorus ferrugineus* ERADICATION PROGRAM

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After the first detection of *Rhynchophorus ferrugineus* in the Canary Islands in 2005, the General Direction of Agriculture implemented the Red Palm Weevil (RPW) eradication regional program. In order to manage the data (collection, transmission, management, analysis and outputs) a GIS was developed. This GIS included: Database, mobile application, web application, and web viewer.

Data Collection of the designed parameters (palm trees registered and infested, traps, locations...) was done across a specific application installed in PDAs. Further, the reporting was done through GPRS systems to a geodatabase, located at a SQL Server Data Base, which had a high capacity of storage.

In order to improve access to spatial information, a web viewer was developed with the help of various GIS tools (ArGIS 9.2, ArcSDE on SQL Server and ArcGIS Server), on which, in addition to the Georeferenced data (Locations, lots, palm trees, traps) it was also possible to represent other queries that were necessary for decision-making.

In May 2016 the Canary Islands were declared a RPW free area. The GIS is considered an essential tool for the planning and effective coordination of the eradication pest program and has allowed:

- Data and spatial analysis for optimal decision-making
- Efficient planning
- Efficient use of resources, a critical factor for success when these are limited
- Assessment of the program (results, achievement of objectives) from readily available quality information
- Assessment of workers
- Improvement of the program's internal and external communication

Keywords: GIS, *Rhynchophorus ferrugineus*, Red Palm Weevil, Palm Trees, Canary Island decision-making, eradication program