THE CUARENTAGRI PROJECT AND ITS ACTIONS REGARDING THE CREATION OF A PHYTOSANITARY ALERT NETWORK SYSTEM ON AGRICULTURAL PRODUCTION, IN AZORES.

David Horta Lopes[1], Elisa Tarantino[1]

[1] Azorean Biodiversity Group (GBA, CITA-A) and Platform for Enhancing Ecological Research & Sustainability (PEERS), Universidade dos Açores, Faculdade de Ciências Agrárias e Ambiente, Departamento de Ciências e Engenharia do Ambiente, Rua Capitão João D'Ávila, 9700-042 Angra do Heroísmo, Terceira, Azores, Portugal

Problem

The introduction of pests and harmful organisms in the Macaronesian area (Azores, Madeira, Canary Islands), Cape Verde and Senegal (Fig. 1).

The lack of knowledge about the risk associated to:

- high territory highly fragmentated;
- high trading exchange and touristic activities increase the vulnerability of the study area to the introduction of new organisms;
- plant movement and plant product importation in the study area

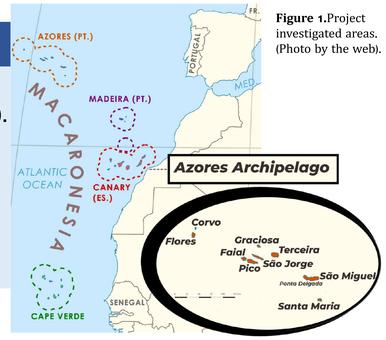

Figure 1. Project investigated areas. (Photo by the web).

Ongoing activities

Here, are presented the ongoing activities of the project specifically for the the archipelago of Azores in which, 3 different islands were investigated: São Miguel, Terceira e S.Jorge.

Monitoring sites were chosen by the Agricultural Development Services of each island and the FRUTER Producers Cooperative of Terceira island.

Traps baited with pheromones were placed starting from April 2020 in different cultures concordant with ripening period of the fruits, and different attractants were compared for *Ceratitis capitata* (Wieldmann) and *Drosophila suzukii* (Matsumura); the first a well-known pest in the island and the second, new in the archipelago. Every two weeks, phytosanitary sheets (Fig. 2) were made available to inform technicians and farmers about the population dynamics of each pest. The amount of adults captures in each trap was divided for the number of day of activation in order to normalize the data collected. When possible, the sex ratio was reported as well (Fig.3).

Monitored pests

Banana: *Cosmopolites sordidus* (German), banana thrips, *Bactrocera dorsalis* (Hendel)

Olive: *Bactrocera oleae* (Gmelin).

Apple: *Cydia pomonella* (L.), *Cydia molesta* (Busck).

Chestnut: *Cydia splendana* (Hübner).

Pastures: *Mythimna unipuncta* (Haworth), *Spodoptera littoralis* (Boisduval).

Citrus, apple, strawberry, grapewine: *Drosophila suzukii* (Matsumura),

Coffee, citrus, apple, plums: *Ceratitis capitata* (Wieldmann).

Potato: *Tecia solanivora* (Povolny), *Phthorimaea operculella* (Zeller).

Visual observations were made to detect the presence of *Dryocosmus kuriphilus* (Yasumatsu) on chestnut, *Euphyllura olivina* (Costa) on olives, *Phyllocnistis citrella* (Staiton) and *Xylella fastidiosa* on citrus.

Additional data on *Popillia japonica* (Newman) spread on the analysed islands were provided by the Agricultural Services of each island.

Project aim

CUARENTAGRI project (MAC2/1.1a/231) involves the outermost regions of the European Union of Azores, Madeira, Canary Islands, and Cape Verde and Senegal as third countries. The climatic conditions allow the cultivation of plants not present in the rest of Europe and the biodiversity of these countries are not comparable with mainland. The risk associated with the introduction of pests into the study area is not already valuated so the aim of the project is to:

- recognize the quarantine pests or non-regulated quarantine pest that affect cultures;
- detect the best phytosanitary measures in order to create a phytosanitary alert network system on agricultural production and reduce pest's introduction and spread
- guarantee knowledge transfer and professional skill development of technicians.

Figure 2- Examples of Cuarentagri project Phytosanitary sheets.

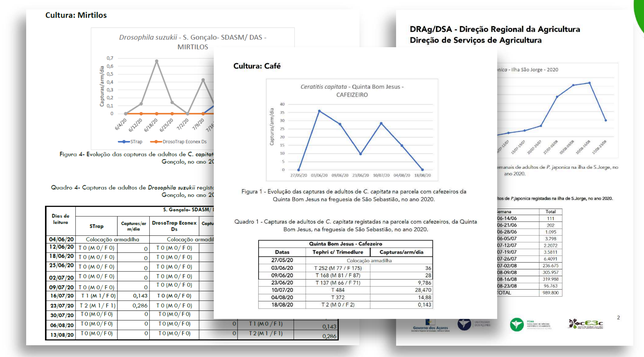

Figure 3. Graphics and tables provided by the Cuarentagri project to farmers and technicians.

Future prospections

- Comparation of different traps and attractants for *C. capitata* and *D. suzukii*.
- Establish monitoring devices in those crops that allow knowing their evolution and allow the prediction of their appearance and the creation of an regional phytosanitary warning system to farmer's.
- Create a automatic detection trap to capture the *P. japonica* adults.
- Pest's database creation supplied with photos and general information.

References

- Pimentel, R. & Horta Lopes, D.J.H. 2018. Evaluation of kits of traps and lures for monitoring Ceratitis capitata Wiedemann (Diptera: Tephritidae) in Terceira Island, Azores. IOBC/wprs Bulletin, Vol 132: 166-176
- Lopes; D.J.H.L., Ornelas, M. L., Filipe, M.C.C., Pimentel, R., Martins, J.T.O., Aguiar, M.H., Ventura, L., Correia, A. & Mexia, A.M.M. 2012. Banana weevil (Cosmopolites sordidus Germar) (Coleoptera: Dryophthoridae) population dynamics in Terceira Island (Azores) banana orchards, Acta Horticulturae, 928:199-204.
- Melo, M., Carvalho, C., Pimentel, R. & Lopes, D.J.H. 2018. A presença de Drosophila suzukii (Diptera: Drosophilidae) Matsumura na ilha Terceira, Açores, Revista de Ciências Agrárias, 41(SPE): 152-155.