

# GO CITRICS – Citrus Irrigation and Fertilisation Precision Farming

## Short description of the OG

The OG aimed to carry out a pilot test in an irrigation community using thermographic cameras, drones, satellites and capacitance sensors to determine the areas with excesses or defects in irrigation to balance this aspect.

The water reality of the irrigation system is determined using the data obtained and, by applying the appropriate corrections, the knowledge acquired can be transferred to growers to be applied on their farms.

## Benefits

More efficient irrigation is achieved, both at the water level, in a context of limited water resources, and at the energy level, reducing associated costs.

## Stage of implementation

Finished in September 2021.

## Key Data Box

### Theme

Citrus; adaptive management; digital technologies; energy efficiency; water-use efficiency

### Context

Citrus production area, especially with a risk of water availability in the future

### Duration

2019-2021

### Partners

ASAJA Málaga, IVIA, Centro de Edafología y Biología Aplicada del Segura, Ignacio Puech Suanzes, Distribución de Maquinaria Agrícola y Agroquímicos, Hemav Technology S.L., Hemav Technology S.L.

### Budget

€ 123,762.57

### Particularity

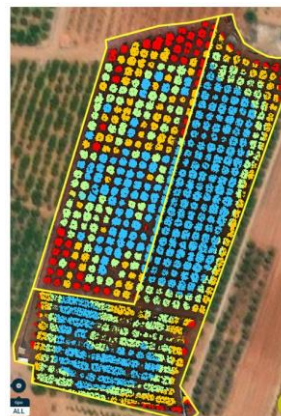
The OG studied the effectiveness in the application of new agricultural precision technics.

## Main achieved or expected results

- The installation of capacitance probes in the plot (see Picture 1) makes it possible to monitor soil humidity; thus, it is possible to know the optimal time of irrigation and the amount of water to provide, programming the irrigation based on this information.
- The data obtained from drone flights (prepared with a hyperspectral camera; see Picture 3) and satellite images makes it possible to detect failures in the irrigation systems, highlighting areas with both over- and under-irrigation. Detecting this problem, individualized in the area of the field, enables this aspect to be corrected, possible failures to be repaired and irrigation to be adapted to the needs of the crop and, consequently, production to be increased; see the information obtained displayed on a digital platform in Picture 2.
- Installing a mulching layer of rice straw in this case, because it is difficult to manage and because it is a crop present in the area generates benefits in terms of reducing irrigation needs.



Picture 1. Capacitance sensor



Picture 2. Digital platform with the hydrological results



Picture 3. Drone equipped with thermographic cameras

### Existing materials

#### Web links

Project website:

<https://gocitrus.eu/>

#### Further reading

Manual on maintenance of irrigation communities and installations on plots

[https://www.avaasaja.org/index.php/de-interes/proyectos/gos-citricos/item/download/2129\\_74252b506edaaeff5c9eee0f1819e62a](https://www.avaasaja.org/index.php/de-interes/proyectos/gos-citricos/item/download/2129_74252b506edaaeff5c9eee0f1819e62a)

Manual on precision agriculture in irrigation and fertilization

[https://www.avaasaja.org/index.php/de-interes/proyectos/gos-citricos/item/download/2128\\_13cea774bafebde26b06084f6f03e6a3](https://www.avaasaja.org/index.php/de-interes/proyectos/gos-citricos/item/download/2128_13cea774bafebde26b06084f6f03e6a3)

### Contact information

**Publisher:** Valencian Farmers' Association (AVA-ASAJA)  
C/ Guillem de Castro, 79. 46008 Valencia (Spain)

+34 96 380 46 06, [www.avaasaja.org](http://www.avaasaja.org)

**Author(s):** Carreras Peris, Bárbara

**Contact:** [info@avaasaja.org](mailto:info@avaasaja.org)

**Project partners:** AVA-ASAJA, IVIA, UPV, Asaja Málaga, HEMAV, Dimagro, Ignacio Puech

This practice abstract was elaborated in the CLIMED-FRUIT project.

**Project website:** <https://climed-fruit.eu/>

© 2023