

OFIVO – Optimization of irrigation & fertigation on Occitan vineyards

Short description of the OG

The gradual change in rainfall patterns experienced in the vineyards of southern France, especially around the Mediterranean Sea, means that the vines are increasingly subject to summer drought.

The objectives of the OFIVO operational group are to study **different irrigation systems** to see which is best suited to vines, as well as **the implementation of fertigation** and its use in viticulture.

OFIVO was implemented by 5 partners (winegrowers, technical institutes, negociants, cooperatives), and 40 winegrowers were involved throughout the project. The trials were mainly located on two plots, in Gascony and the Mediterranean area.

To compare irrigation systems, capacitive probes were used to explore the profiles of wet bulbs in the soil. More than 10,000 pieces of data were collected during the project. The impacts of fertigation were assessed through yield measurement and quality analysis of the harvest.

Benefits

The main added ecological value for the farmer addressed by the OG: water use efficiency in vineyards, precision of water and fertiliser inputs, better mobilisation of fertilising units by the vines.

Stage of implementation

OFIVO has ended (2019–2022).

Key Data Box

Theme

Climate change adaptation, water-use efficiency, fertilization

Context

South of France, 2 main regions concerned (near Toulouse = Gascony and near Montpellier = Mediterranean context). Irrigation is already highly developed in the area near Montpellier, which is not yet the case in Gascony. Fertigation is not yet widely used in viticulture.

Duration

3 years (2019-2022)

Partners involved

Independent winegrowers, cooperatives, negociants, technical institute (IFV)

Budget

204 000,00€

Particularity

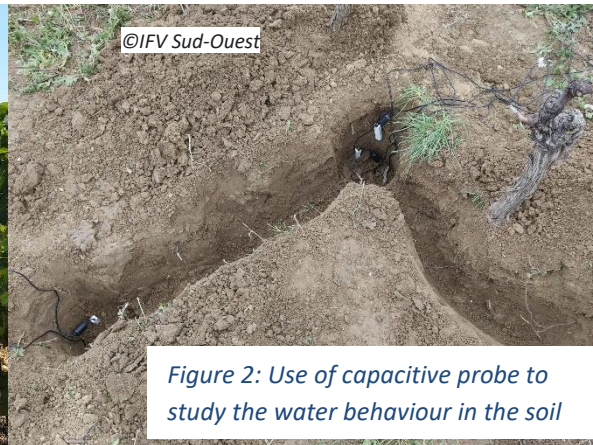
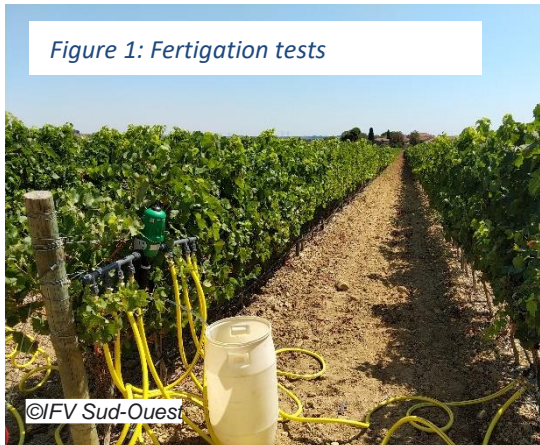
Organisation of a study trip at the request of winegrowers to get technical feedback from existing system

Main achieved or expected results

The results focus on the positioning of the irrigation system in the vine row (aerial or buried in the middle of the inter-row or under the row) and the impact of the use of fertigation on vines and especially on grape maturity. Expected results are:

- **To secure annual production** in terms of quantity and quality
- **To optimize water use** according to its availability
- **Reduced fertilisation inputs** thanks to defining differences in requirements between plots

- **Improved farm competitiveness** thanks to better control of yield factors and better grape quality management in line with market expectations
- **Improved vine longevity** thanks to better nutritional balance



Related materials

Videos

OG presentation :

https://www.youtube.com/watch?v=DqghjMEjyGmw&t=930s&ab_channel=CLIMED-FRUIT

Web links

Project presentation : <https://www.vignevin-occitanie.com/nos-recherches-2/viticulture-de-precision/ofivo/>

Further reading

To better understand soil wet bulb formation with subsurface or aerial drip irrigation in viticulture : <https://ives-openscience.eu/12943/>

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

Project website:

<https://climed-fruit.eu/> (no OFIVO website)

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