

HIDROVINYA: Tool to determine the water status of the vineyard using meteorological and soil data.

Summary

Viticulture currently requires the creation and installation of a network to collect the meteorological and soil data needed to ascertain water availability in vineyards. The data obtained can be used to predict plant response to stress, as a basis for working to adapt wine-growing techniques to conditions caused by climate change.

Objectives

The main objectives of the project are to:

- Constantly assess the availability of water in the soil useable by the vineyard, based on meteorological and soil moisture data.
- Relate water availability data to levels of plant water stress, obtained by reading leaf water potential.
- Observe the response of the vineyards to different degrees of water stress they may be subjected to.
- Assess the performance of different vineyard soil and vegetation management actions, as measures for adapting to situations of increasing water stress.
- Create a network in order to monitor different climatic and soil conditions.
- Use the set of data obtained to design a model to predict the response of vines to water stress situations.
- Generate, implement and validate a decision support tool, both in irrigation and dry conditions, to improve wine growing.
- Assess the final impact on the vegetation and productive development of the vineyard and the effects on the quality of the must.
- Optimise vineyard water management with the data of the monitoring network in irrigation management (where available), soil management and vineyard vegetation management.

Description of the measures planned in the project

Action 1: Installation of meteorological observatories

Action 2: Installation of humidity and soil temperature sensors in each meteorological observatory.

Action 3: Adaptation of the vite.net platform to the project needs for collecting and viewing data and recommending agronomic improvement actions over the Internet.

Action 4: Classification of soils in plots

Action 5: Collecting and monitoring meteorological and soil moisture data

Action 6: Monitoring the plant water potential

Action 7: Vegetative and productive development of the vine

Action 8: Monitoring of the health of plots

Action 9: Must quality

Action 10: Collection of agronomic data

Action 11: Data analysis and discussion of results

Action 12: Reporting

Action 13: Dissemination of the results

Expected results and practical recommendations

These objectives address the issues listed in the application:

- Improving water management, including fertiliser and pesticide management.
- Achieving more efficient water use in agriculture.

The pilot test takes into account this focus on irrigated plots and also on dryland, where water management involves farm conditions and therefore soil management. This aspect is considered basic in adapting to new conditions caused by climate change, as a factor in the sustainability of the agricultural system

Subject area(s) of application

- | | |
|-------------------------------------|---------------------------------------|
| <input checked="" type="checkbox"/> | Agricultural production system |
| <input type="checkbox"/> | Agricultural practice |
| <input type="checkbox"/> | Agricultural equipment and machinery |
| <input type="checkbox"/> | Livestock farming and animal welfare |
| <input checked="" type="checkbox"/> | Vegetable production and horticulture |
| <input type="checkbox"/> | Landscape / Territorial management |
| <input type="checkbox"/> | Pest and disease control |
| <input type="checkbox"/> | Fertilisation and nutrient management |
| <input checked="" type="checkbox"/> | Soil management |
| <input checked="" type="checkbox"/> | Genetic resources |
| <input type="checkbox"/> | Forestry |
| <input checked="" type="checkbox"/> | Water management |
| <input checked="" type="checkbox"/> | Climate and Climate Change |
| <input type="checkbox"/> | Energy management |

<input type="checkbox"/>	Waste and by-product management
<input type="checkbox"/>	Biodiversity and environmental management
<input type="checkbox"/>	Food quality/processing and nutrition
<input type="checkbox"/>	Supply chain, marketing and consumption
<input type="checkbox"/>	Competitiveness and agricultural and forestry diversification
<input type="checkbox"/>	General

Geographical area(s) of application

PROVINCE(S)	REGION(S)
Catalonia	All

Dissemination of the project (publications, seminars, multimedia, etc.)

News on the progress of the project will be published on the INNOVI.cat website and posted on the social media of INNOVI and the Cluster members.

There will be an informative seminar at the beginning of 2021.

Project website

This will be opened soon at www.innovi.cat/projectes/hidrovinya

More information on the project

PROJECT DATES	TOTAL BUDGET
Starting date: July 2019	Total budget: €212,000.00
End date:	DARP funding: €86,639.98
Current status: Underway	EU funding: €65,360.02
	Own funding: €60,000.00

With funding from:

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Order ARP/133/2017 of 21 June, approving the regulatory bases for grants for cooperation for innovation by promoting the creation of European Association for Innovation operational groups in the areas of agricultural productivity and sustainability and the execution of innovative pilot projects by those groups, and Resolution ARP/1282/2018, of 8 June, announcing the call for the grant.

