

## Biodiversity of the vineyard environment and wine quality

### Summary

Elements of the landscape around vineyards, their aromatic components and their presence in wines produced in this environment are considered a worthwhile field of study.

A wine's uniqueness is influenced by several factors, including grape variety, terrain, microclimate and environment of the vineyard. The variety can be cultivated by other producers but the group of factors consisting of microclimate, terrain and environment form conditions that are virtually unique to each plot.

How the environment influences wine characteristics is still little known. In many wines, notes associated with floral, forest or aromatic plants can be recognised, but so far few associations have been established relating aromas in the environment to aromas in the wine, although they have been demonstrated in at least two cases: vineyards near eucalyptus, where eucalyptol increases in wines, and fire fumes, which can increase phenols such as guaiacol and cresol in the grape and wine.

### Objectives

The main objectives of the project are to:

- Identify the main elements in the botanical landscape around vineyards and their relation to wine aromas.
- Obtain aromatic profiles of various cultivated or spontaneous plants that live near the vineyards.
- Identify aromas in the wines of the studied plots by sensory and instrumental analysis.
- Improve the concentration of aromas through production techniques and by encouraging the planting of certain plant species.

### Description of the actions carried out in the project

1. Identify the most abundant and aromatic plant species in the environments of the studied vineyards.
2. Study the typical aromas of the wines obtained from the vineyards in the study.
3. Identify possible associations between aromas from the environment and aromas in wines.
4. Carry out vinification tests to favour the most characteristic aromas.
5. Provide knowledge on the plants surrounding the vineyards and identify aromas in the wines with the help of producers, restaurateurs and consumers.

### Final results and practical recommendations

- Provide knowledge to manufacturers and consumers regarding spontaneous aromatic plants and their aromas.
- Strengthen the uniqueness of the wines from each winery through this knowledge.
- Incorporate a differentiating feature of sustainability and authenticity in the products based on the use of plants native to the wine-growing area of each company and grown organically.

### Conclusions

The study of plants and crops surrounding the vineyards can allow us to show the relationship between landscape and wine and highlight aromas related to the various aromatic plants present in different designations of origin in Catalonia.

Some possible factors to assess are: nearby crops, the natural environment, landscape elements, structures such as margins, fallows, verges with vegetation, vegetation cover, cropping systems, fertiliser and

the influence of neighbouring elements. The project also plans to assess the flowering season of several characteristic species in each area studied.

Other factors to be assessed are the benefits or services that many plants bring to the agricultural ecosystem, such as nitrogen fixation by legumes, nutrient species for butterflies, conservation of pollinators and support for birds, among others.

### Leader of the Operational Group

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### Subject area(s) of application

- Agricultural production system
- Agricultural practice
- Agricultural equipment and machinery
- Livestock farming and animal welfare
- Vegetable production and horticulture
- Landscape / Territorial management
- Pest and disease control
- Fertilisation and nutrient management
- Soil management
- Genetic resources
- Forestry
- Water management

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

### Geographical area(s) of application

PROVINCE(S)	REGION(S)
Barcelona, Girona, Lleida and Tarragona	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.

### Project website

[www.innovi.cat/biodiversitat/](http://www.innovi.cat/biodiversitat/)

### More information on the project

PROJECT DATES	BUDGET APPROVED
Start date (month-year): July 2020	Total budget: €145,371.43
Completion date (month-year): August	DARP funding: €59,410.28
Current status: Underway	EU funding: €44,818.29
	Own funding: €41,1,142.86

### With funding from:

Project funded through Operation 16.01.01 (Cooperation for Innovation) through the Catalan Rural Development Programme 2014–2020.

*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/1531/2019, of 28 May, announcing the call for the grant.*



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