VALOVITIS, the value of minority or endangered vine varieties in the Pyrenean foothill

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The VALOVITIS project aims at improving competitiveness of the wineries from the Pyrenean Piedemonte area in a global market through innovation and differentiation. The grapevine genetic resources of endangered varieties in these territories are prospected and assessed, ensuring their safeguard by their introduction in existing repositories and vinyards studies.

A demonstration project. The assessment through field demonstration trials of the agronomic, technological and aromatic values of these minority varieties let transfer the knowledge to wineries and professionals of the vine selection. These innovative varieties will provide a competitive advantage to SMEs of the local wine industry, keeping economic and social dynamism in the rural areas covered by the project.

INTERREG POCTEFA Programme

Priority Axis: Enhance innovation and competitiveness

Date: 1. May 2016 - 30. April 2019

Total budget: 736 m€

EC contribution: 65%

This work has been funded by the European Regional Development Fund ERDF

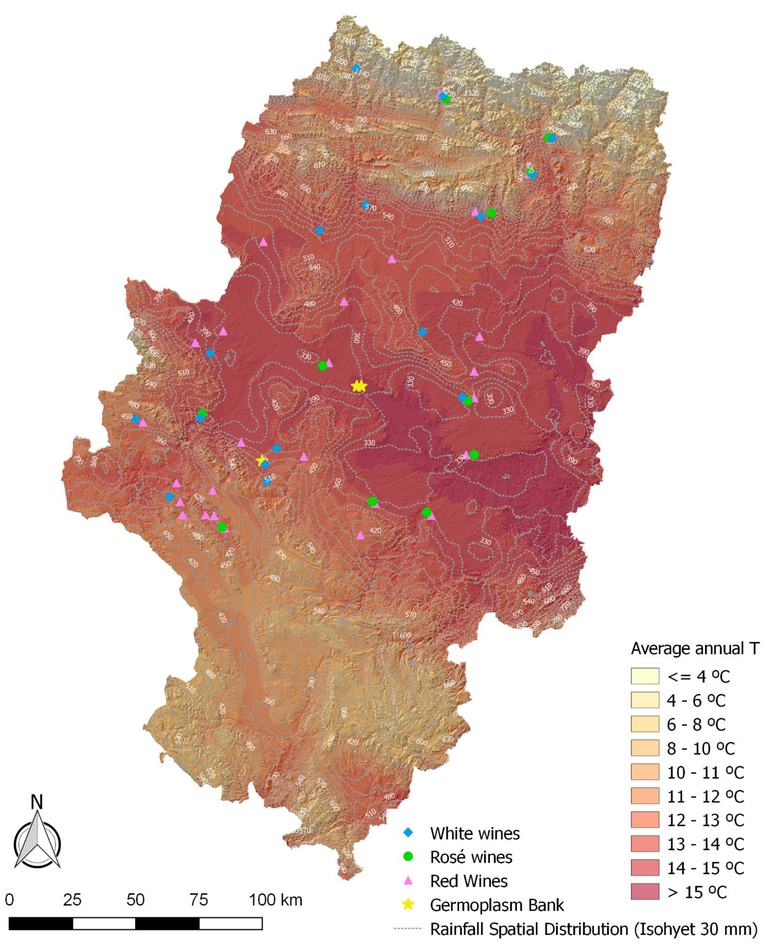

Fig. 1. Location of the plant material assessed in VALOVITIS project.
Sources: Atlas Agroclimático de Aragón, 2007. IDEAragón.

Step 1 Identification of singular varieties

3 different techniques:

1. **Experts visual identification** (pictures) ➔ participatory approach available in the VALOVITIS project website: www.valovitis.eu
2. **Prospections** ➔ Field work – Sampling and record
3. **Molecular characterization** ➔ Sampling and lab analysis in IFV facilities (Montpellier).

+ Sanitary analysis of the plant material tested

This project was based on the preservation work developed in the Germoplasm Bank managed by the CTA (Aragon Government) and on the molecular characterization carried out by Aula Dei –CSIC. Both of them associated partners in the VALOVITIS project.

Desired characteristics: Long cycle and late maturity varieties.

Climate: in Aragon predominates the continental Mediterranean climate, cold winters and hot, dry summers. However, the patterns of this climate are modified by the topography, ranging from the aridity of the Ebro valley to the permanent snow areas of the Pyrenees, through the succession of areas characterized by their altitude, orientation or relief. *Atlas Agroclimático de Aragón, 2007.*

Step 2. Agronomic assessment – demonstration field trials

Sanitary analysis of the plant material tested.

3 campaigns: 2016, 2017 and 2018.

Test of **120 plant material inputs** from **45 different locations.**

Assessment of the agronomic production:

- kg grape/vine
- Nr. grapes/bunch
- Nr. bunches/vine
- Weight of 100 grapes
- Total acidity, brix and pH of the grape must entering to the winery

All the varieties were tested in the Germoplasm Bank plots managed by the Agrifood Transfer Centre of the Aragon Government.

La Alfranca I	La Alfranca II	Cariñena
0.4 has - Flood irrigation	1.2 has - Drip irrigation	2.9 has - Rainfed irrigation

Step 3. Wine making

Step 4. Chemical and sensory wine analysis

Statistic analysis of the chemical parameters measured in the must entering the winery

Statistic results show how the varietal effect preveils over the growth conditions of every harvest.

Chemical analysis were carried out by the Agrifood Laboratory of the Aragon Government.

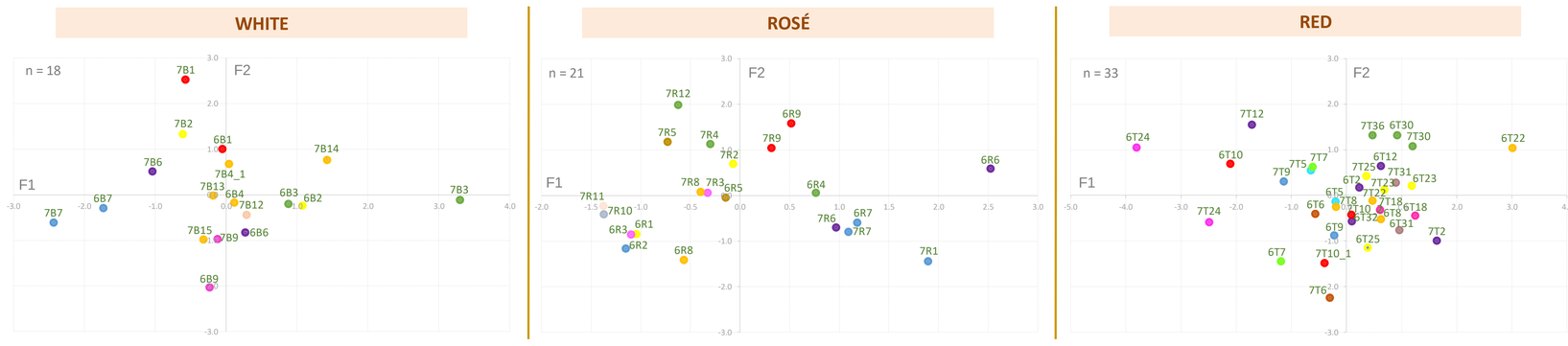

Fig. 2. Principal Component Analysis (PCA) on the basis of **production**, **brix** and **total acidity** records (only La Alfranca I y II plots – irrigated and same location) in the harvests of 2016 and 2017. Varieties clasified by color. **Code:** year (6:2016 or 7:2017) – type of wine (B: White; R:Rosé; T:Red) – Nr. wine.

Sensory analysis - 11 testers

The varietal component determines the agronomic and sensory patterns and their singularity.

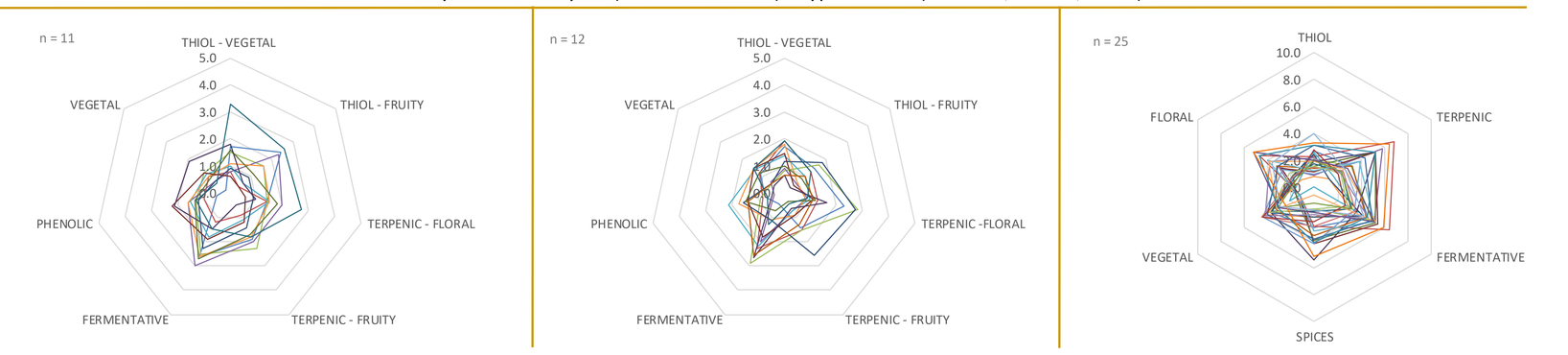

Fig. 3 Sensory assessment of the wines tasted in 2017.

Table 1. Vinifications and varieties assessed.

	Varieties tested*	White		Rosé		Red	
		🍷	🍇	🍷	🍇	🍷	🍇
2016	39	11	12	9	7	33	23
2017	32	12	8	12	9	25	18
TOTAL in VALOVITIS	**43***	**28**	**13***	**21**	**9***	**76**	**25***

🍷 Vinifications 🍇 Varieties

* Some varieties were tested in several wines and in several years.

Conclusions and future prospects

- ➔ Data obtained in the 2 harvests monitored in the VALOVITIS project show the strength of the varietal component. It influences in the must quality in higher extent than the specific conditions of every harvest.
- ➔ Plant material coming from Ebro valley showed a better adaptation capacity to their replicability in warmer and drier conditions. Varieties obtained from northern areas (wetter and colder regions) find more difficulties in their introduction to controlled semi-arid conditions.
- ➔ 3 of the varieties assessed will be introduced in larger plots moving a step forward towards their commercial development.
- ➔ Aragón possesses a valuable varietal heritage. It is worth to continue working on its preservation and provide valuable tools to the local wine sector offering uniqueness and differentiation in the markets.