

PARREL, an aragonese wine-producing variety of the Ebro depression. Adaptation to a semi-arid terroir of cultivation.

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Interreg POCTEFA VALOVITIS

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 will be prospected, identified through a participatory approach and its sanitary status will be assessed. Their safeguard will be ensured 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, nurseries 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

Start date: 1. May 2016

End date: 30. April 2019

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EC contribution: 65%

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PARREL



1 The grape

PARREL is a minority variety located mostly in Aragon. Its grape is characterised by a tender skins and a dark color.

2 Where has it been found?

This variety is included in the Germplasm Bank managed by the Centre for Agri-food Transfer (CTA) of the Government of Aragón since 1989.

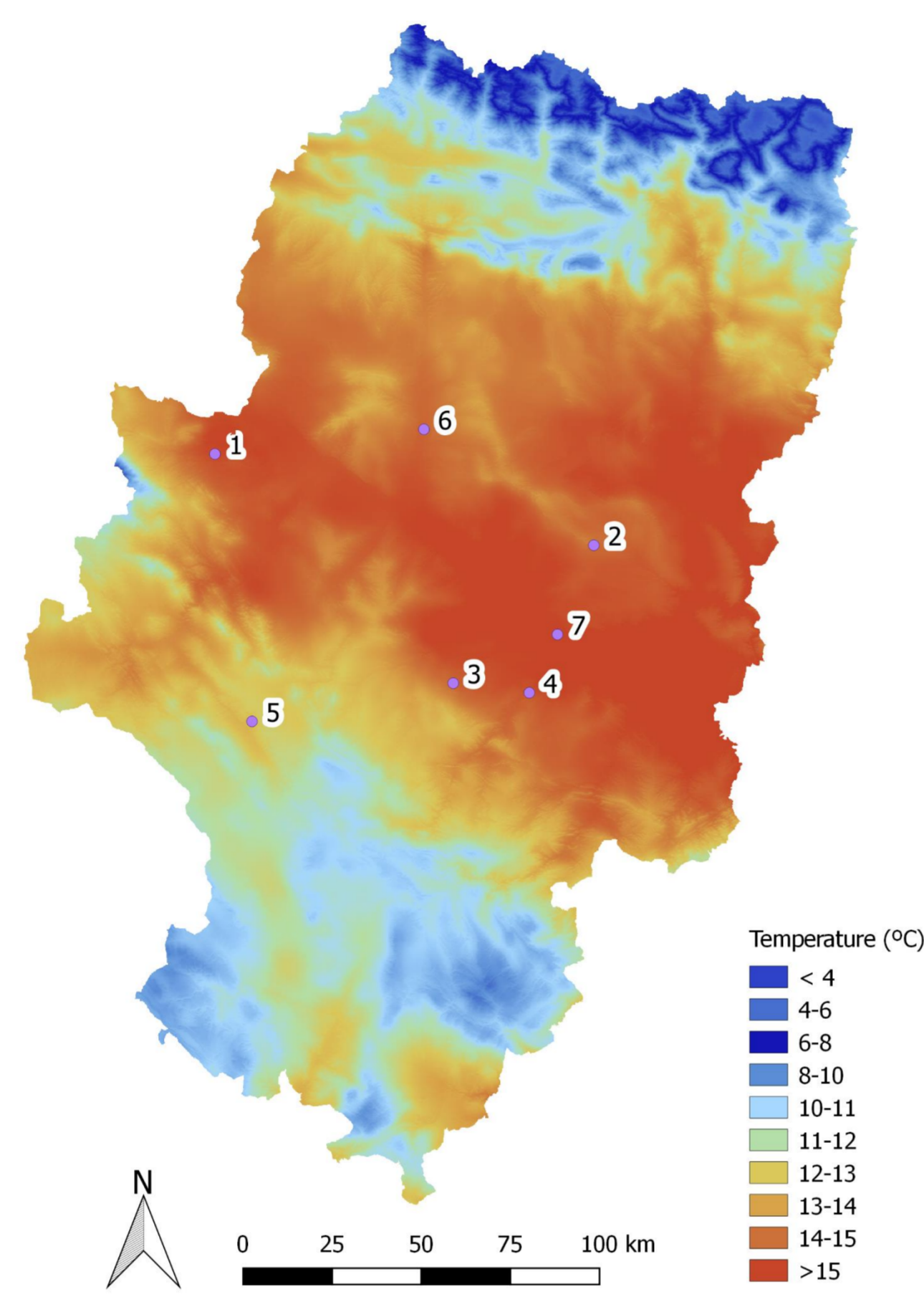
Plant material source: Aragón basin of the Ebro river, mostly in the province of Zaragoza.

Climate: semi-arid.

Location	H (m)	P (mm)	ET ₀ (mm)	T (°C)	Tw (°C)	Ts (°C)
1 Ainzón	489	421	1133	14.5	7.3	22.5
2 La Almolda	355	329	1277	14.3	5.9	23.4
3 Lécera	541	361	1090	13.8	6.4	14.5
4 Híjar	268	335	1208	14.6	6.6	23.4
5 Daroca	894	429	1102	12.2	4.5	20.9
6 Zuera	310	419	1361	14.1	5.8	23.3
7 Sástago	287	339	1324	14.9	6.7	23.9

H: altitude; P: annual rainfall; ET₀: Potential evapotranspiration; T: annual average temperature; Tw: average temperature in winter; Ts: average temperature in summer.

Source: Atlas Climático de Aragón, 2007.



Source: IDEAragón. Atlas climático de Aragón, 2007.

The wide range of extreme climatic values where this variety has been found, leads to think that it has great capacity to adapt to different climatic conditions and terroir.

3 Molecular characterization

The molecular profile of PARREL described previously with six SSRs was not included in any database (Buhner *et al.*, 2010). More recently, the molecular profile of this variety obtained with eight SSRs is recorded in the IMIDRA database as GEN 0905.

T. Buhner-Zaharieva, S. Moussaoui, M. Lorente, J. Andreu, R. Núñez, J.M. Ortiz, Y. Gogorcena. *Am J Enol Vitic*, 61, 557-562 (2010).

VMC4F3-1	VVIN16	VVIV37	VVIV67	VVMD27	VVIP31	VVS2	ZAG79
179	179	153	159	165	171	364	366
179	189	180	196	131	151	243	261

Source: RF2012-00027-C5-02 Project.

→ The molecular profile obtained with eight SSRs was identical regardless of the origin of the accessions (see above).

4 Agronomic properties and phenology

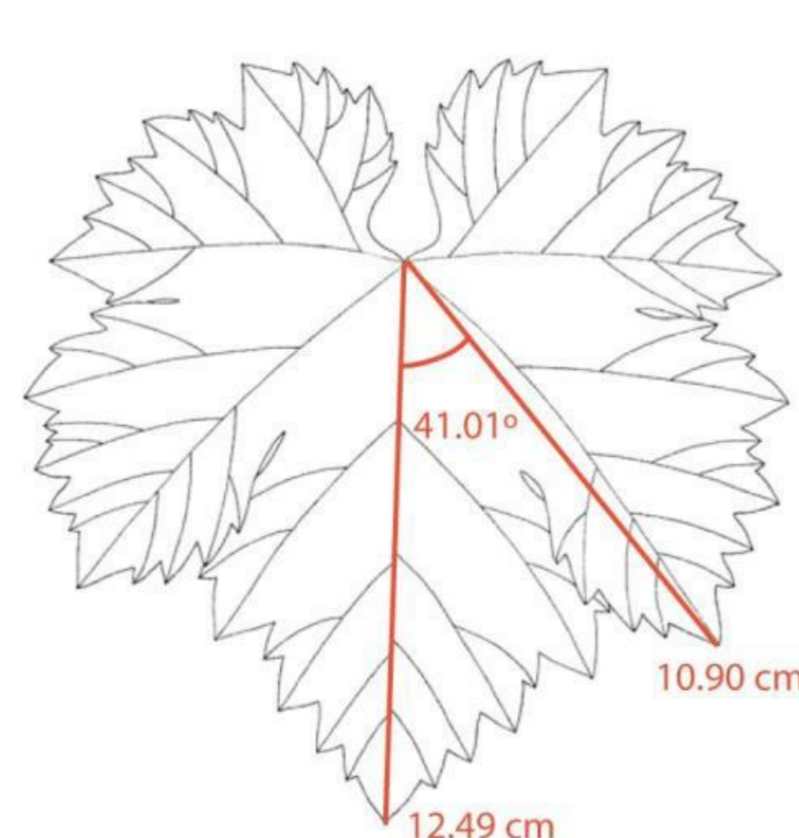
→ Distribution of anthocyanin pigmentation in **young pompano** not trimmed and of medium intensity.

→ Pentagonal limb in the **adult leaf** with five lobes and rectilinear teeth.

→ Medium size and low compact **bunch**.

→ Medium-sized spherical **berry** with a blue-black epidermis.

→ **Pulp** without coloration and with nuggets.



Source: Misión Biológica de Galicia-CSIC



→ It is observed that climatic conditions have a great influence on the setting of the bunch.

→ The weight of the berries and the number of bunches per vine tend to be more constant values than the number of berries per bunch.

High agronomic production, maintained over time and good resistance to powdery mildew.

Demonstration field trials - VALOVITIS



GROWING AND HARVEST

WINE MAKING

CHEMICAL LAB ANALYSIS

WINE TASTE

A. Agronomic assessment

- 2 campaigns in the Germplasm Bank of the Aragón Government in Pastriz (Zaragoza SP): 2016 and 2017.
- Vinyards in espaliers with drip irrigation.
- Long cycle and late maturity.
- High production due to the large number of bunches per vine and the average size of the berry.

	Rosé		Red	
	2016	2017	2016	2017
Date of harvest	4/10	16/10	26/9	22/9
Yield per vine kg	8.1	5.2	11.7	8.2
Weight – bunch g	396	310	586	395
Weight - 100 berries g	266	205	171	168
Nr. Berries per bunch	148	151	342	235
Nr. Bunches per vine	20.5	16.9	20.0	20.8

B. Chemical analysis

- Results in accordance with the wine characteristics in the Protected Designation of Origin (PDO) of Aragón.
- Moderate alcohol content and adequate color intensity.

	Rosé		Red	
	2016	2017	2016	2017
Reducing sugar g/l	0.991	0.994	0.992	0.993
Alcohol %v/v	12.95	10.79	13.29	13.11
Dry matter	21.50	23.00	24.00	26.40
Total acid g/l	5.90	5.40	5.90	5.80
Volatil acid g/l	0.36	0.20	0.32	0.41
pH	3.57	3.48	3.60	3.64
Malic acid g/l	1.40	1.50	1.30	1.70
Total sulphur dioxide mg/l	17.0	44.0	33.0	102.0
Free sulphur dioxide mg/l	5.00	5.00	5.00	7.00
Colour	2.50	1.55	12.43	8.26
Polyphenols	12.20	10.40	39.60	30.00

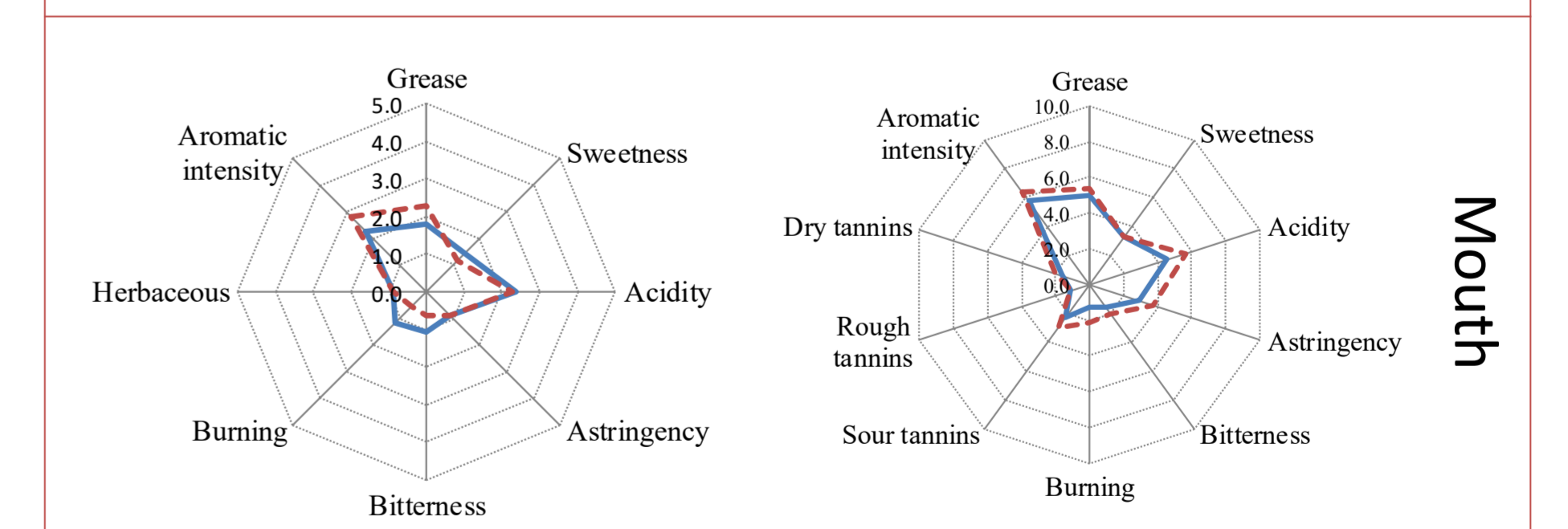
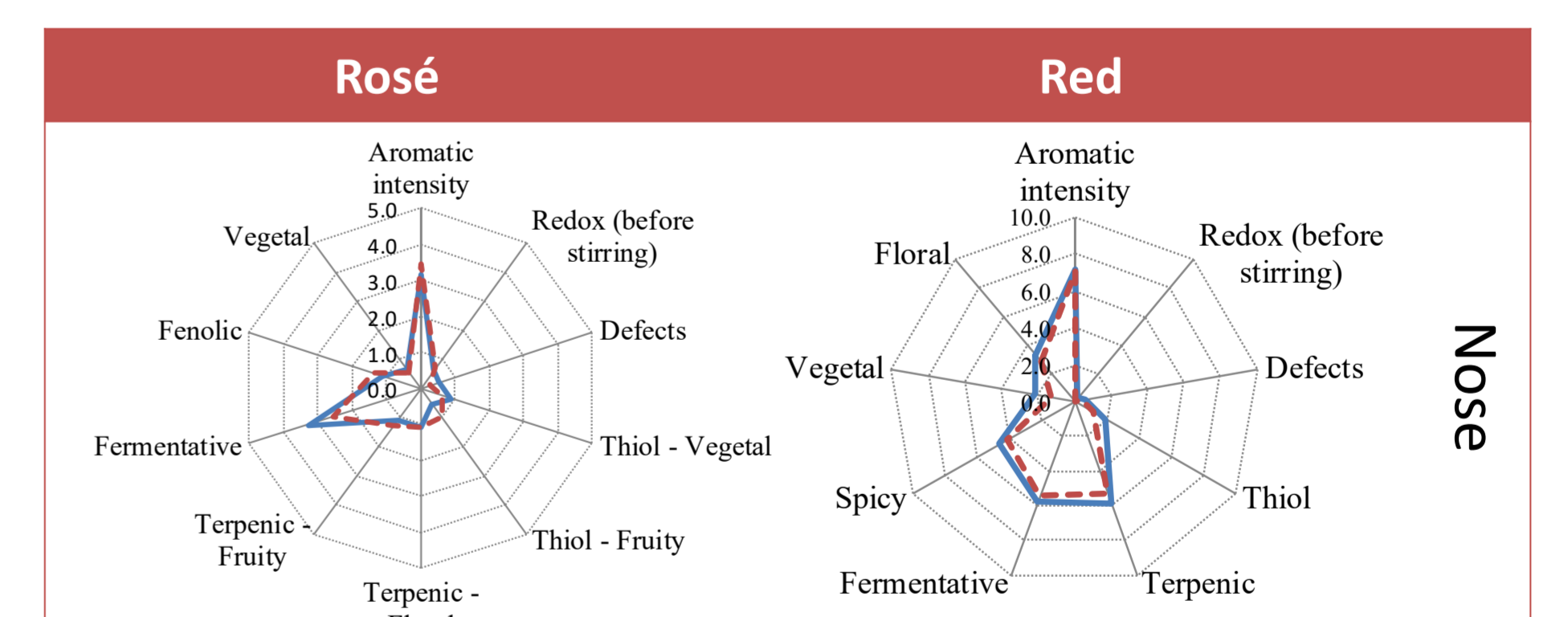
Source: Laboratorio agroambiental del Gobierno de Aragón.

C. Wine sensory analysis – 11 wine tasters - 2 wines



Rosé High average intensity, highlighting the aromas of fermentative character, while in the taste the aromatic intensity and the acidity stand out.

Red Medium-high terpene, spicy and fermentative character. In taste, aromatic intensity and acidity stand out. Absence of tannic descriptors.



— 2016 — 2017

5 Conclusions and future prospects

- The terroir has shown less effect than the varietal characterization in the production data.
- According to the results obtained from the chemical and sensory analysis, the variety is suitable to produce both red and rosé quality wines, the latter with a predominance of terpenic aromas.
- The red wines present sufficient alcoholic strength.
- The PARREL variety, according to its agronomic and oenological characteristics, deserves an in-depth study of its potential.