

Soils and climate of the satellite appellations of Saint-Emilion Château La Rose Perrière – Lussac Saint-Emilion

Cornelis van Leeuwen¹ and Laure de Rességuier¹

¹EGFV, Univ. Bordeaux, Bordeaux Sciences Agro, INRAE, ISVV, F-33882 Villenave d'Ornon, France

The appellations Saint-Emilion and Saint-Emilion Grand Cru (5450 ha) are surrounded by four satellite appellations: Montagne Saint-Emilion (1450 ha), Lussac Saint-Emilion (1450 ha), Puisseguin Saint-Emilion (730 ha) and Saint-Georges Saint-Emilion (200 ha). The geology of the satellite appellation is composed of Tertiary sediments, including soft limestone located on the slopes, called “molasses du Fronsadais” (Oligocene), hard limestone located on the plateaus, called “calcaire à Astéries” (Oligocene) and non-calcareous river sediments in the northern part of the area, called (sables du Périgord, Eocene). The topography is gently sloping and extends between 30 m above sea level (m.a.s.l.) and 106 m.a.s.l. Soils are calcareous on 34 % of the area and vary from shallow on the “calcaire à Astéries” to medium depth on the “molasses du Fronsadais”. The texture of the calcareous soils is silty clay. On 66 % of the area soils are non-calcareous and vary in texture from sandy silt to silty clay. The non-calcareous soils are deeper and have generally a greater water holding capacity.

The climate is, on average, cooler in the satellite appellation compared to Saint-Emilion, but temperatures do vary locally. The highest average temperatures are recorded on the limestone plateaus, while temperatures are lower in the northeastern part of the area.

The wines from the satellite appellations used to be not as famous as the wines from Saint-Emilion. Because of the cooler climatic conditions, maturity was more difficult to achieve. With climate change, this handicap is progressively turning into an advantage and wine quality is steadily increasing in this area.

One of the soil types of the château La Rose Perrière (Lussac Saint-Emilion) is a shallow calcareous soil on hard limestone (“calcaire à Astéries”). This soil is highly suitable for growing Cabernet franc, but fine wines are also produced with Merlot. Wines are not naturally very concentrated, but they display lots of finesse and complexity. Tannin structure is refined and wines have a great aging potential.

Keywords : Soil, Climate, Saint-Emilion, satellite appellation, château la Rose Perrière, Lussac Saint-Emilion

Soils and climate of the satellite appellations of Saint-Emilion Château La Rose Perrière – Lussac Saint-Emilion

Cornelis (Kees) van Leeuwen and Laure de Rességuier

EGFV, Univ. Bordeaux, Bordeaux Sciences Agro, INRAE, ISVV, F-33882 Villenave d'Ornon, France



The Saint-Elites
 Clos Albertus
 Château La Couronne

Château Corbin
 Château De La Grenière
 Château Guibot La Fourvielle
 Château Rigaud
 Château La Rose Perrière
 Château Tour Bayard îlot 1
 Château Tour Bayard îlot 2
 Château Vieux Bonneau

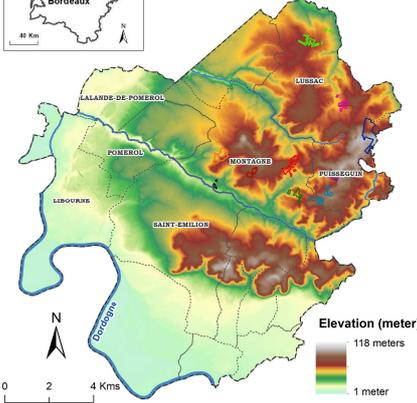


Additional information on the terroir of the Saint-Elites association

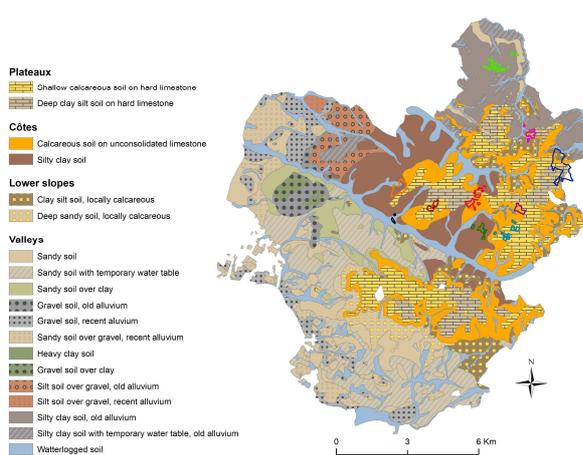


Additional information on the terroir of Saint-Emilion with multiple interactive maps (Advicim project)

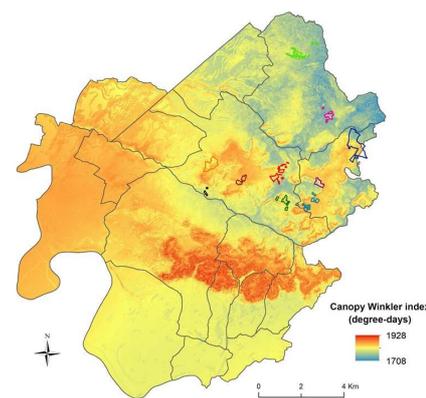
Topography map of Saint-Emilion, Pomerol and their Satellite appellations



Soil map of Saint-Emilion, Pomerol and their Satellite appellations



Canopy Winkler index map (average 2012-18) of Saint-Emilion, Pomerol and their Satellite appellations

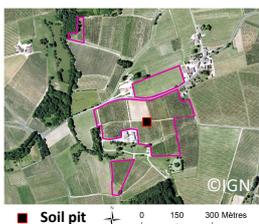


Geology, topographie and soils have a high degree of similarity between Saint-Emilion and its satellite appellations

The climate is cooler in the satellite appellations compared to Saint-Emilion and Pomerol

Château La Rose Perrière PDO Lussac Saint-Emilion

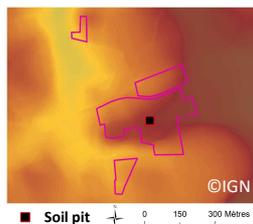
Parcels of château La Rose Perrière



Soil pit parcel informations:

- Plant material: Merlot/3309C
- Planting year: 1992

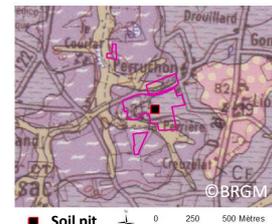
Digital Elevation Model



Topography:

Plateau
70 m.a.s.l.

Geology map



Geology:

Calcaire à Astéries (Oligocene)



Soil type (Fr):

CALCOSOL peu profond sur calcaire dur (*calcaire à Astéries*)

Soil type (En):

Shallow calcareous soil on hard limestone (*calcaire à Astéries*)

Parcel 4		Horizon 1	
DEPTH (cm)		0-25	
COURSE ELEMENTS (>2 mm) (%)		3%	
FINE EARTH (%)		97%	
Coarse sand		32%	
Fine sand		13%	
Coarse silt		15%	
Fine silt		20%	
Clay		21%	
TEXTURE		Silty-clay	
ORGANIC MATTER (%)		2.7	
ORGANIC CARBON (%)		1.6	
TOTAL NITROGEN (%)		0.156	
C/N ratio		10.1	
pH (water)		8.4	
pH (KCl)		7.8	
ADSORBANT COMPLEX			
K ⁺ cmol ⁺ /kg		0.94	
Mg ²⁺ cmol ⁺ /kg		1.25	
Ca ²⁺ cmol ⁺ /kg		++	
S (sum of cations)		++	
V (saturation rate)		Sat.	
C.E.C cmol ⁺ /kg		10.4	
Total Ca (%)		35.7	
Active Ca (%)		10.1	
IPC		>200	
P ₂ O ₅ g/kg Joret-Hébert		0.138	
TRACE ELEMENTS			
Cu exch. mg/kg		21.8	
Mn exch. mg/kg		2.9	



Soil description:

- Very shallow soil over hard limestone
- Silty-clay texture
- High rooting density at the contact of the *calcaire à Astéries*
- Migration of water from the bedrock to the roots in dry summers
- Moderately high OM and total nitrogen content
- Risk of chlorosis due to presence of CaCO₃ and bedrock close to the surface



Recommended plant material:

- Rootstocks: 41B or Fercal due to the risk of chlorosis
- Cabernet franc is the preferred option, Merlot is possible



Wine style:

- Very high potential for the production of quality wines
- Wines offering lots of finesse and complexity
- Good freshness
- Excellent aging potential