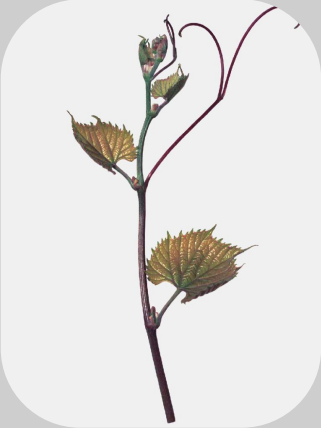
161-49 Couderc



Genetic origin

This variety results from the crossbreeding of *Vitis riparia* and *Vitis berlandieri*.

Name of the variety in France (and usual name)

161-49 C

Breeder\/breeder and year obtained

Georges Couderc, 1888.

Estimated surface area of the French vineyard grafted with this rootstock and main regions of use

22 000 ha . Bourgogne Franche-Comté, Champagne, Alsace, Charentes, Languedoc-Roussillon, Rhône-Alpes, Aquitaine, Provence-Alpes-Côte d'Azur, Val de Loire, Midi-Pyrénées.

Elements of ampelographic description

The identification is based on:
- the tip of the young shoot that is half open, with a medium density of prostrate hairs and a piping anthocyanin coloration,
- the slightly bronzed young leaves,
- the elongated shoots with an elliptic section, a ribbed surface, red internodes and nodes on the dorsal side, green internodes and red nodes on the ventral side, with a very low density of erect hairs on the internodes and a low to medium density of erect hairs on the nodes,
- the wedge-shaped, dark green adult leaves, with an undulate leaf blade between the veins, an open U-shaped petiole sinus with often naked petiole veins (at least on one side), a weak to moderate anthocyanin coloration of veins, teeth with straight sides (the tooth of the center vein is the longest with one side concave and one side convex), and on the lower side of the leaves and on the petiole a medium to high density of erect hairs,
- the female flowers,
- the very small, round-shaped berries, with a blue black skin,
- the light to dark brown woody shoots.

Evolution of mother vine surfaces

Year	1945	1955	1965	1975	1985	1995	2005	2015
ha	143	392	381	251	68	68	111	48

Genetic profile

Microsatellite	**VVS2**	**VVMD5**	**VVMD7**	**VVMD27**	**VRZAG62**	**VRZAG79**	**VVMD25**	**VVMD28**	**VVMD32**
Allele 1	135	225	231	236	192	256	236	214	265
Allele 2	139	263	251	269	196	260	269	241	265

Plantgrape, all rights reserved,
plantgrape.fr, UMT Géno-Vigne®
INRAE - IFV - L'Institut Agro Montpellier

Resistance to soil pests

161-49 C is highly tolerant to the root form of phylloxera, but is moderately resistant to *Meloidogyne incognita* nematodes. It is susceptible to *Meloidogyne arenaria* nematodes.

Aptitudes for vegetative multiplication

161-49 C wood production is moderate (30 000 to 60 000 m/ha) with sometimes a certain proportion of damaged wood. The cleaning and disbudding is difficult due to a large number of tendrils. The cutting and grafting capacities of 161-49 C is only moderate. Canes must be maintained under good conditions. This rootstock requires a special care during the stratification phase (duration, hormoning) up until the planting in the nursery.

Clonal selection in France

In France, the 10 certified 161-49 C clones carry the numbers 170, 171, 176, 177, 190, 197, 198, 199, 225 et 239. Among those, the clones multiplied are:
- clone No. 170: 4 ha 18 ares of mother vines producing certified material in 2017,
- clone No. 171: 81 ares of mother vines producing certified material in 2017,
- clone No. 176: 10 ha 08 ares of mother vines producing certified material certified in 2017,
- clone No. 197: 1 ha 50 ares of mother vines producing certified material certified in 2017,
- clone No. 198: 30 ha 94 ares of mother vines producing certified material certified in 2017.

Datas are extracted from: Les chiffres de la pépinière viticole, 2017, Datas and assesment of FranceAgriMer, may 2018.

Adaptation to the environment

161-49 C resists up to 40% of total limestone, 25% of "active" limestone and an IPC of 50. 161-49 C drought resistance is moderate to high. This rootstock is very sensitive to tylosis, particularly when the plants are young, which may increase sereve case of apoplexy. This rootstock is also susceptible to temporary water excess during the spring. 161-49 C is well adapted to limestone or clay-limestone, not very compact, light and fairly deep soils. Too compact soils should be avoided. Over the past few years, cases of declining young vines grafted on 161-49 C have been reported. Southern regions seem to be the most affected, even if plots presenting problems have also been noticed in other regions. Initial symptoms (a significant decrease of vigor) most often occur from the third year after being planted. Cambium failure is generally observed on the plants affected by an abnormal trunk and root thickening. Research is currently in progress to better understand this phenomon, which has appeared under certain soil and climatic conditions. Until the real causes of this syndrome are understood, great care is recommended when selecting this rootstock.

Interaction with the graft and production objectives

The growth and fruiting speed given by 161-49 C is quite slow. In addition, the limited yields during the first years reduces the risks of tylosis. This rootstock confers a moderate vigor and balances the vegetative growth. The varieties grafted onto 161-49 C produce quality fruits and the blends made with Chardonnay, Colombard, Merlot, Pinot and Ugni blanc are particularly appreciated. It also shows good results with hybrid grapes. However, some joining problems have sometimes been reported, particularly with Carignan, Gamay and Servant.

Bibliographic references

- Catalogue des variétés et clones de vigne cultivés en France. Collectif, 2007, Ed. IFV, Le Grau-du-Roi, France.
- Documentary collections of the Centre de Ressources Biologiques de la Vigne de Vassal-Montpellier, INRAE - Montpellier SupAgro, Marseillan, France.
- Cépages et vignobles de France, tome 1. P. Galet, 1988, Ed. Dehan, Montpellier, France.