



## Cardinal Rg



### Name of the variety in France

Cardinal

### Origin

This variety was obtained by E. Snyder and F. Harmon in California. Based on genetic analyses carried out in Montpellier, this variety would be the result of the crossbreeding between Reine des vignes and Alphonse Lavallée.

### Synonyms

There is no officially recognized synonym in France nor in the other countries of the European Union, for this variety.

### Legal information

In France, Cardinal is officially listed in the "Catalogue of vine varieties" on the A list. It is classified as a wine grape variety only in some French department (see the regulations in force). This variety is also listed in the catalogues of other Member States of the European Union: Austria, Bulgaria, Hungary, Italy, Portugal and Spain.

### Use

Wine and table grape variety.

### Evolution of cultivated areas in France

	1958	1968	1979	1988	2000	2008	2018
ha	344	1483	1205	774	380	227	100

### Descriptive elements

The identification is based on:

- the tip of the young shoot with no or very little prostate hairs,
- the young leaves are reddish or green with bronze spots,
- the shoots have very long internodes and very long tendrils,
- the wedge-shaped adult leaves, with five lobes, an open U-shaped or brace-shaped petiole sinus, medium teeth compared to their width at the base with straight or convex sides, slight or moderate anthocyanin coloration of veins, a smooth shiny leaf blade, and on the lower side of the leaves, no or a very low density of erect and prostate hairs,
- the round-shaped or slightly bumpy berries, often containing 6 pips.

## Genetic profile

Microsatellite	VVS2	VVMD5	VVMD7	VVMD27	VRZAG62	VRZAG79	VVMD25	VVMD28	VVMD32
Allel 1	133	223	249	176	186	252	254	243	251
Allel 2	133	234	249	182	186	256	254	267	271

## Phenology

Bud burst: 9 days after Chasselas.

Grape maturity: very early season, 1 week before Chasselas.

## Suitability for cultivation and agronomic production

Cardinal has a strong vigor and a horizontal bearing. It can be pruned short and must be trained. It is susceptible to millerandage and coulure. Its berries are susceptible to bursting.

## Susceptibility to diseases and pests

Cardinal is susceptible to the phomopsis and to downy mildew.

## Technological potentiality

Cardinal's bunches are large, loose with a long and not very lignified peduncle. The berries are very large but irregular in color. The skin is moderately thick and the pulp is firm. This simple-flavored variety displays interesting gustatory qualities. The grapes have moderate storage and a fairly good transport capacity.




## Clonal selection in France

The eight certified Cardinal clones carry the numbers 80, 81, 82, 83, 84, 85, 86 and 87. These different clones are mainly used for the production of table grapes.

## 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.
- Dictionnaire encyclopédique des cépages et de leurs synonymes. P. Galet, 2015, Ed. Libre&Solidaire, France.

## Description of clones certified in France

Clone no.	Identity and availability		Agronomic data		Technological data	
	Origin	Selection	Fertility	Production level	Sugar level	Color potential
	Year of certification	Agronomic references	Bunch weight	Vigor	Titriable acidity	Tannic structure
	Surface area used for propagation (year)		Berry size	Susceptibility to grey rot	Aromatic intensity	Oenological suitability
80	Gard	ENTAV				
	1971					
ENTAV  INRA®						
Clone not widely distributed, few references available.						
81	Gard	ENTAV				
	1971					
ENTAV  INRA®						
Clone not widely distributed, few references available.						
82	Gard	ENTAV				
	1971					
ENTAV  INRA®						
Clone not widely distributed, few references available.						
83	Gard	ENTAV				
	1971					

Clone no.	Identity and availability		Agronomic data		Technological data	
	<i>Origin</i>	<i>Selection</i>	<i>Fertility</i>	<i>Production level</i>	<i>Sugar level</i>	<i>Color potential</i>
	<i>Year of certification</i>	<i>Agronomic references</i>	<i>Bunch weight</i>	<i>Vigor</i>	<i>Titrate acidity</i>	<i>Tannic structure</i>
	<i>Surface area used for propagation (year)</i>		<i>Berry size</i>	<i>Susceptibility to grey rot</i>	<i>Aromatic intensity</i>	<i>Oenological suitability</i>

ENTAV  INRA®

Clone not widely distributed, few references available.

84	Gard	ENTAV				
	1971					

ENTAV  INRA®

Clone not widely distributed, few references available.

85	Gard	ENTAV				
	1971					

ENTAV  INRA®

Clone not widely distributed, few references available.

86	Gard	ENTAV				
	1971					

ENTAV  INRA®

Clone not widely distributed, few references available.

87	Gard	ENTAV				
	1971					

ENTAV  INRA®

Clone not widely distributed, few references available.



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