

# 420 A Millardet et de Grasset



## Genetic origin

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

## Name of the variety in France (and usual name)

420 A MGt

## Breeder/breeder and year obtained

Alexis Millardet and Charles de Grasset, 1887.

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

13 000 ha . Aquitaine, Rhône-Alpes, Languedoc-Roussillon, Midi-Pyrénées, Bourgogne Franche-Comté, Provence-Alpes-Côte d'Azur.

## Elements of ampelographic description

The identification is based on:

- the tip of the young shoot that is half open or closed, with a medium density of prostrate hairs,
- the slightly bronzed young leaves,
- the elongated shootd, with an elliptic section, a ribbed surface, red internodes and nodes on the dorsal side, and on the ventral side, green internodes and red nodes up to the tip, and no erect hairs,
- the wedge-shaped, shiny, dark green adult leaves, entire or with sometimes three or five lobes on the leaves at the base, with an open U-shaped petiole sinus, a moderate anthocyanin coloration of veins, and on the lower side of the leaves, a low density of erect hairs,
- the male flowers,
- the yellow or reddish brown woody shoots.

## Evolution of mother vine surfaces

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| Year | 1945 | 1955 | 1965 | 1975 | 1985 | 1995 | 2005 | 2015 |
|------|------|------|------|------|------|------|------|------|
| ha   | 68   | 100  | 107  | 71   | 39   | 25   | 49   | 25   |

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## Genetic profile

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| Microsatellite | VVS2 | VVMD5 | VVMD7 | VVMD27 | VRZAG62 | VRZAG79 | VVMD25 | VVMD28 | VVMD32 |
|----------------|------|-------|-------|--------|---------|---------|--------|--------|--------|
| Allele 1       | 124  | 236   | 231   | 238    | 191     | 256     | 238    | 243    | 263    |
| Allele 2       | 135  | 261   | 262   | 270    | 196     | 256     | 270    | 245    | 263    |

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### Resistance to soil pests

420 A MGt is highly tolerant to the root form of phylloxera. Its resistance to *Meloidogyne incognita* and *Meloidogyne arenaria* nematodes is also good.

### Aptitudes for vegetative multiplication

420 A wood production is moderate (30 000 to 60 000 m/ha) with canes that easily lignify, but the internodes diameter is sometimes thin. The growth of lateral shoot buds is significant. 420 A MGt has a low cutting capacity and a moderate grafting aptitude. In order to improve the percentage of cuttings rooting, a slightly more substantial hormoning may be applied.

### Clonal selection in France

In France, the 5 certified 420 A MGt clones carry the numbers 10, 11, 169, 241 et 758. Among those, the clones multiplied are:

- clone No. 10: 4 ha 91 ares of mother vines producing certified material, in 2017,
- clone No. 11: 2 ha 69 ares of mother vines producing certified material, in 2017,
- clone No. 169: 98 ares of mother vines producing certified material, in 2017,
- clone No. 241: 6 ha of mother vines producing certified material, in 2017,
- clone No. 758: 10 ha 77 ares of mother vines producing certified material, in 2017.

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

### 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.

### Adaptation to the environment

420 A MGt resists up to 35% of "total" limestone, 20% of "active" limestone and an ICP of 40. Its resistance to iron chlorosis is moderate to good. This rootstock seems well adapted to fertile conditions and to fairly deep clay-limestone soils with a sufficient water input. However, it is poorly adapted to compact soils and excessive spring humidity. 420 A MGt does not absorb well potassium in the soil. The varieties grafted, particularly the most sensitive, can frequently show signs of potassium deficiency with this rootstock.

### Interaction with the graft and production objectives

420 A MGt confers a low vigor to the grafts and the vegetative development of the vines is limited. It does however tend to delay maturity. 420 A MGt promotes floral initiation. Given the low conferred vigor, yields must be limited, particularly during the first years of production, to avoid unbalanced vines. 420 A MGt works well with Cabernet franc, Merlot and Tannat.



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