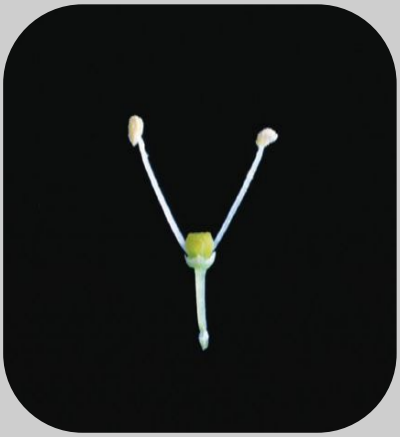
420 A Millardet et de Grasset



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

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

Genetic profile

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 aresof 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.

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 confered 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.

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.