

Table S1. Cumulative and average values of meteorological parameters recorded in the experimental farm from the starting to the end of the breeding program (1997-2021).

Year	PREC (mm)	PRECMAX (mm)	TMAX (° C)	TMAX _{ABS} (° C)	TMED (° C)	TMIN (° C)	TMIN _{ABS} (° C)
1997	207.3	42.9	23.2	30.0	13.3	3.5	1.1
1998	151.6	52.7	28.7	41.2	18.1	2.2	-6.0
1999	294.2	47.0	28.5	40.5	15.6	0.3	-8.0
2000	248.2	88.3	29.8	44.5	15.7	1.3	-6.5
2001	336.5	27.1	29.1	41.9	16.3	0.4	-6.3
2002	295.0	34.0	27.4	38.5	15.8	4.9	-4.7
2003	308.8	31.3	29.6	42.1	16.1	0.6	-7.7
2004	459.2	50.3	31.0	43.1	15.5	1.9	-7.2
2005	233.9	32.1	30.1	40.0	15.1	-2.6	-12.2
2006	402.4	61.1	29.2	41.1	16.1	-3.6	-10.5
2007	342.8	41.1	27.3	39.1	14.7	1.4	-8.3
2008	392.8	69.3	27.6	39.3	14.8	1.1	-6.0
2009	409.8	48.4	30.7	43.0	15.3	-2.6	-8.6
2010	478.6	67.4	27.7	40.6	14.5	-1.3	-8.9
2011	365.6	37.4	28.1	38.6	15.2	-2.6	-10.7
2012	395.1	107.7	30.8	43.7	14.9	-2.1	-11.1
2013	244.3	23.0	26.9	37.7	14.7	0.7	-6.6
2014	133.2	15.8	27.6	38.2	15.9	-1.0	-8.5
2015	354.2	51.4	30.0	41.3	15.5	0.0	-7.9
2016	385.5	72.1	29.4	40.8	15.6	2.7	-7.2
2017	183.2	37.0	29.4	39.7	15.4	-2.5	-10.1
2018	392.6	48.9	28.9	38.0	15.0	1.5	-7.2
2019	426.6	78.2	31.6	40.2	15.1	-1.4	-9.4
2020	393.0	108.1	29.1	41.1	15.3	0.2	-8.1
2021	320.5	34.1	31.0	43.4	15.4	0.1	-6.6
Average	326.2	52.3	28.9	40.3	15.4	0.1	-7.7

Cumulative values of precipitation (PREC) and maximum precipitation (PRECMAX). Average values of maximum temperature (TMAX), absolute maximum temperature (TMAX_{ABS}), average daily air temperature (TMED), minimum temperature (TMIN), and absolute minimum temperature (TMIN_{ABS}).

Table S2. Cumulative and average values of meteorological parameters recorded in the experimental farm during the evaluation period (2017-2021).

Period (2017-2021)	PREC (mm)	PRECMAX (mm)	TMAX (° C)	TMAX _{ABS} (° C)	TMED (° C)	TMIN (° C)	TMIN _{ABS} (° C)
January	51.3	25.9	12.7	22.1	5.8	-0.1	-7.2
February	4.1	1.69	13.8	22.6	8.6	4.6	-4.5
March	43.8	22.1	14.9	26.6	10.7	6.2	-2.6
April	54.4	30.0	16.8	27.5	13.0	9.0	0.3
May	20.8	13.7	21.4	31.9	17.6	12.8	2.7
June	14.8	10.2	25.4	35.8	21.9	17.5	7.8
July	5.6	5.3	29.3	39.7	25.2	21.3	11.0
August	14.1	8.4	29.3	40.4	25.0	20.6	11.1
September	45.0	21.7	24.0	33.6	20.9	16.7	7.3
October	15.4	11.3	20.1	30.4	15.6	10.6	1.0
November	57.2	32.9	16.7	24.8	10.1	4.8	-4.0
December	16.7	9.1	13.9	22.8	7.3	1.8	-5.8
Average	343.2	192.2	19.9	29.9	15.1	10.5	1.4
Year							
2017	183.2	107.9	20.0	30.0	15.3	10.2	1.2
2018	392.6	181.2	19.0	28.6	14.9	10.3	1.5
2019	426.6	247.3	20.3	29.9	15.0	10.3	1.3
2020	393.0	228.8	19.6	30.3	15.3	10.6	1.2
2021	320.5	196.0	20.4	30.5	15.2	11.1	2.1

Cumulative mean values of precipitation (PREC) and maximum precipitation (PRECMAX). Average values of maximum temperature (TMAX), absolute maximum temperature (TMAX_{ABS}), average daily air temperature (TMED), minimum temperature (TMIN), and absolute minimum temperature (TMIN_{ABS}).

Table S3. Ampelographic characteristics of the parental and new varieties indicated with the UPOV descriptors (2008) and the CPVO technical protocol (CPVO-TP/050/2) for distinctness, uniformity and stability tests.

Characteristic		descriptor UPOV N°	Monastrell	Cabernet S.	Syrah	Calblanque	Calnegre	Gebas	Myrtia
Young shoot:	Openness of tip	2	Fully open (5)	Fully open (5)	Fully open (5)	Fully open (5)	Fully open (5)	Fully open (5)	Fully open (5)
Flower:	Sexual organs	16	Fully developed stamens and fully developed gynoecium (3)	Fully developed stamens and fully developed gynoecium (3)	Fully developed stamens and fully developed gynoecium (3)	Fully developed stamens and fully developed gynoecium (3)	Fully developed stamens and fully developed gynoecium (3)	Fully developed stamens and fully developed gynoecium (3)	Reflexed stamens and fully developed gynoecium (4)
Mature leaf:	Shape of blade	18	Pentagonal (3)	Circular (4)	Pentagonal (3)	Pentagonal (3)	Circular (4)	Pentagonal (3)	Pentagonal (3)
	Number of lobes	20	Three (2)	Seven (4)	Five (3)	Five (3)	Seven (4)	Three (2)	Five (3)
	Length of teeth	24	Medium (5)	Medium (5)	Medium (5)	Medium (5)	Medium (5)	Medium (5)	Short (3)
	Ratio length/width of teeth	25	Medium (5)	Medium (5)	Small to medium (4)	Medium (5)	Medium (5)	Large (7)	Small (3)
	Shape of teeth	26	Both sides straight (2)	Both sides convex (3)	Both sides convex (3)	Mixture of both sides straight and both sides convex (5)	Mixture of both sides straight and both sides convex (5)	Both sides straight (2)	Mixture of both sides straight and both sides convex (5)
	Proportion of main veins on upper side of blade with anthocyanin coloration	27	Low (3)	Absent or very low (1)	Absent or very low (1)	Absent or very low (1)	Medium (5)	Absent or very low (1)	Absent or very low (1)
	Postrate hairs between main veins on lower side of blade	28	Dense (7)	Medium (5)	Medium (5)	Medium (5)	Sparse (3)	Sparse (3)	Medium (5)
Bunch:	Size (peduncle excluded)	32	Small to medium (4)	Small (3)	Medium (5)	Medium (5)	Small (3)	Medium (5)	Medium (5)
	Density	33	Dense (7)	Medium to dense (6)	Medium (5)	Lax to medium (4)	Medium (5)	Lax to medium (4)	Lax (3)
Berry:	Size	35	Small to medium (4)	Small (3)	Small to medium (4)	Small to medium (4)	Small (3)	Small (3)	Small (3)
	Shape	36	Globose (2)	Globose (2)	Broad ellipsoid (3)	Globose (2)	Globose (2)	Globose (2)	Globose (2)
	Colour of skin	37	Blue black (9)	Blue black (9)	Blue black (9)	Yellow green (2)	Blue black (9)	Blue black (9)	Blue black (9)
	Particular flavour	42	None (1)	Herbaceous (4)	None (1)	None (1)	Other than muscat, foxy or herbaceous (5)	Other than muscat, foxy or herbaceous (5)	Other than muscat, foxy or herbaceous (5)
	Formation of seeds	43	Complete (3)	Complete (3)	Complete (3)	Complete (3)	Complete (3)	Complete (3)	Complete (3)
Woody shoot:	Main colour	44	Dark brown (3)	Yellowish brown (1)	Yellowish brown-dark brown (1-3)	Yellowish brown (1)	Yellowish brown (1)	Orange brown (2)	Dark brown (3)

The note assigned within each descriptor to each variety is indicated in parentheses.