





## Mavrodaphne

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### In a nutshell

**Mavrodaphne** (ma – vro – DHA – fni) is a red Greek wine grape variety noted for sweet wines from **Cephalonia** and **Patra**. It has been traditionally used to make fortified sweet red wines but is now experiencing a rebirth due to the interest both by producers and consumers in its dry wines. Current numbers show that it is planted in 520 hectares which is almost the same as the plantings of white Malagousia grape (*national statistics*).

It is a variety with a long tradition in the southern part of the country, producing balanced, textural, and highly perfumed wines. Its classic aromas include an array of mostly black fruit and Asian spices, laurel and sage. Structurally it delivers moderate acid and tannin load leading the way to a refined result that can be enjoyed in its youth but can also age.

### Origins and history

According to most sources, Mavrodaphne originates from the Greek island of Cephalonia. Lambert – Gocs writes

that the variety arrived in Achaia from the Ionian islands in recent centuries, most likely through the numerous Ionian merchants and nobles who came to reside at the once cosmopolitan metropolis of the Morea (Lambert-Gocs, *The Wines of Greece*, p193).

From there, it started its journey and spread to Patra and Achaia in the Peloponnese, where it became prevalent. Its name means "Black Laurel". The word "*mavro*" is commonly found in the names of Greek varieties either as a prefix (Mavrotragano, Mavrokoundoura) or on its own, often denoting a family of unidentified red black varieties.

The grape's popularity in Achaia is attributed to Gustav Clauss, founder of the historical **Achaia Clauss Winery**. Clauss came to Patras in the mid-nineteenth century and made his first Mavrodaphne wine in 1861. Then, inspired by Port winemaking, he created a **sweet fortified Mavrodaphne** boosting sugar and alcohol content. As a result, popularity quickly surged in the domestic and export markets.

Lambert-Gocs states that an apocryphal story promoted by Achaia Clauss claims that Clauss named his wine after a sweetheart named Daphne. **Still, the name of Mavrodaphne was already used in the production of naturally sweetish red wines.**

For many years now, demand for fortified wines has declined but Mavrodaphne plantings are showing an upward trend due to winemakers' high interest in using the grape for red wine production.

## Viticultural Characteristics

### Grapegrowing

Mavrodaphne is primarily found in the western part of Greece, mainly grown close to the Ionian Sea in Patra (and the broader Achaia prefecture) and Cephalonia. The region's climate is the Mediterranean, with reduced rainfall in the summer months (Cephalonia sees more rainfall). Mavrodaphne, however, seems to be struggling with the sporadic rains of the growing season, as **it shows sensitivity to downy mildew**. Even so, as a variety, it is not susceptible to botrytis since it has loose bunches and thick skins.

When grown in drier conditions, like in the high elevations of Aigialeia in Achaia, disease pressure is reduced, but another issue emerges; **sensitivity to drought**, says Theodora Rouvali, winemaker at Rouvalis wines winery. Mavrodaphne's drought strategy depends on ABA signals (Absciscic Acid) from the roots once the water in the soil is reduced. It is a less effective strategy than Savatiano, which closes the leaf stomata early in the season. (<https://doi.org/10.1071/FP09034> [1]).

Vineyards in low-lying, fertile areas are generally used to produce sweet fortified wines. Due to the intensity of the wine style itself, grape concentration is not of crucial importance. Therefore producers are often aiming to increase the yields of these vineyards. In spite of that, Mavrodaphne is a variety with medium productivity. Producers in higher elevations with less fertile soils report results of about 35 hl/ha.

The basal buds of Mavrodaphne are productive, so spur pruning is suitable. Budbreak occurs in the middle of April, and flowering follows in the first days of June. It is prone to *millerandage* (a condition of the berry bunch that contains berries different in size and maturity), which can contribute to medium productivity. *Véraison* occurs in the higher altitude vineyards in the first week of August, while the harvest is from middle September to early October. **It is a late-ripening variety, requiring more than 2000 heat units to achieve ripeness** (<https://doi.org/10.20870/oenone.2020.54.4.3129> [2]), (<https://www.karakasis.mw/future-greek-varieties> [3]). Harvest occurs earlier in the low altitude vineyards and moves towards early autumn with increasing altitude.

At harvest, the grapes can quickly accumulate sugar (13.5% potential alcohol at 650 m), 5.7 – 6.9 g/L total acidity and 3.4 – 3.7 pH, depending on vineyard and producer. However, sugar accumulation seems to be slow, after 13.5% potential alcohol. Hence, grapes benefit from extended hang time in the colder month of September, after *véraison*, to achieve the desired technological ripeness.

## Clones

There is an extensive discussion regarding the clones of the variety. A common belief is that there are two primary

clones, **Tsigello** and **Renio**. But, this has been disproved by Stavrakaki and Biniari. Furthermore, Renio is shown to be a different variety using genetic markers (<https://doi.org/10.3897/vdj.1.e37852> [4]).

Tsigello is believed to be the true, high-quality expression of Mavrodaphne and is found both in Aigialeia and Cephalonia. It seems Renio has been mistakenly replanted as Mavrodaphne after the phylloxera crisis, says Theodora Rouvali. The planted area of Renio gradually increased as it is less vigorous and more productive than Mavrodaphne, and therefore more profitable for the growers. The Tsigello clone, or, better said, true Mavrodaphne, has looser bunches with smaller berries, more concentrated colour and more refined aromas than Renio. It can also achieve higher alcoholic volume as it ripens more consistently.

In Cephalonia, Evriviadis Sklavos reports at least four different clones in their own-rooted old vineyards. Commercially, Bakasietas vine nursery has released one clone of Mavrodaphne, which has only recently been planted in larger scale, therefore more detailed data is not yet available. Despite this, the genetic material is highly infected, making clone selection more difficult.

## Terroirs

### Cephalonia

The home place of Mavrodaphne is Cephalonia. It is one of the rainiest places in Greece because the Pindos Mountain Range on the east forms a cloud barrier, causing rain to fall on their west. This brings average annual rainfall to approximately 800 mm on average per year (<https://www.weather-atlas.com/en/greece/cephalonia-climate> [5]).

Historically, the variety had previously seen significant growth with the Ernest Toole winery with considerable export activity in Europe, especially in Germany, where exports continued until the interwar period. Later, both G. Kaligas and the Komitopoulos brothers had notable productions. The English commissioner Charles Napier extensively describes the potential of Cephalonean Mavrodaphne. His views are covered in the pre-mentioned Lambert Gocs book.

Most of the Mavrodaphne is grown **in clay soils in Palliki Peninsula**, which hold water well and lower elevations, although older vineyards are found at higher altitudes. There are some patches though planted on limestone. **The PDO Mavrodaphne of Cephalonia is produced here as a sweet wine.** However, the current discussion is about dry wines to a great extent. There are small pockets outside of Palliki but of minor importance. Sklavos says that there are significant differences in quality. **These have to do with the more mountainous vineyards such as Havdaton and Skinea but also due to cultivation methods and desired yields.**

### Northern Peloponnese

Most of Mavrodaphne is grown in the Achaia region, around the city of Patra. It was brought to the area from the island of Cephalonia. The high marine traffic of Patra, the third biggest Greek city, facilitated exports, so plantings soon increased around three main grape growing areas which can produce the famous **PDO Mavrodaphne of Patra**; one around Rio, north of Patra, one to the west of the city, and the last one at slightly higher altitudes.

Rainfall is high but lower than Cephalonia, with an average of 667 mm per year. Given Mavrodaphne's drought sensitivity, it's no wonder it thrived in the region. In addition, the more fertile soils of Patra resulting in higher yields lead to lower alcohol levels in wine compared to Cephalonia.

### Other regions

Many ambitious producers have observed the potential of Mavrodaphne. There are plantings all over Greece, even in cooler climates such as Amyndeio. The wines there have higher acidity than in the coastal areas and slightly lower alcohol with more delicate, fresher flavours.

## Oenological Characteristics

### Sweet fortified wines

The main style produced from Mavrodaphne and the one described in the two appellations of Mavrodaphne of Cephalonia and Mavrodaphne of Patra is a sweet, fortified red wine.

Interestingly, regardless of the two appellations' names, the Mavrodaphne wines can contain up to 49% Korinthiaki grapes, the same type used for raisins. This second grape has higher yields and can also achieve higher sugar levels much easier than Mavrodaphne, so producers were using it to obtain the minimum potential alcohol of 17.5% abv. Unfortunately, the Korinthiaki producers can get higher prices for their crops if they sell their grapes for raisin production. Therefore, only the lower quality grapes that are unfit to turn into raisins are used for the wines, damaging wine quality.

According to the PDO Mavrodaphne of Patra regulation, fortification occurs before the natural alcohol must reach 4% vol. The spirit used is "neutral", with at least 96% abv. Wines must then be aged in oak casks for at least twelve months, no bigger than 1000 Lts. With more extended ageing, the terms Reserve, Vieille Reserve and Grand Reserve can be used to describe increasingly aged wines. 25 producers make at least 34 wines.

The PDO Mavrodaphne of Cephalonia has similar regulations; however, it is not being produced in commercially significant volumes, as producers on the island focus on producing dry red wines from this variety. 4 producers in total make a Mavrodaphne of Cephalonia (DiVino, Vasilakis, Sclavos, Foivos with two wines).

Mavrodaphne can produce high quality fortified red wines, which perhaps resemble better fortified Grenache over Port. This can be due to the gentler extraction techniques compared to Port, and the limited time of maceration before fortification. Colour and tannins are not encouraged to move to the wine, leading to wines with brick colour and soft tannins.

### Naturally sweet wines (that cannot be named though Mavrodaphne)

A style encouraged by warm climatic conditions involving sun-dried grapes and avoidance of fortification. A classic example is Mercouri Chortais with an alcohol of 15% abv.

### Dry red wines

Mavrodaphne is a thick-skinned variety, so tannin management is vital for red wines. Complete destemming is often practised to avoid the extraction of harsh tannins. Extraction time can vary with the producer but ranges from one week (Rouvali Tsiggelo) to a whole month (Sclavos)!

As is expected, there are many different styles of dry red wine produced. Lighter wines, usually coming from higher altitude vineyards that can reach 1000 meters above sea level, have approximately 13% abv. On the other hand, some producers prefer more voluminous wines and aim for higher alcohol and more concentration. The acidity of the variety is considered medium, and it doesn't crumble with high ripeness. In any case, the high quality of the variety shines through.

The vessels used play also an essential role in the variety's style. It's a variety sensitive to reduction, so it benefits from ageing in oxygen-permeable vessels, like oak and clay. When using oak, producers prefer larger sizes of used oak, above 500 lts, since the heavier oak bouquet easily overpowers the delicate varietal aromas. A problem I have often come to is *brettanomyces* which seems to be highlighted with Mavrodaphne. Why? Panagiotis Papagiannopoulos winemaker at Tetramythos says that it is characteristic of the variety and oxygen management. Brett is relatively easy to avoid in "conventional" vinifications, while these wines' gamey characters also appear.

Fermentation is typically performed in stainless steel tanks under temperature control, which results in fresher aromas. Some wines are also shortly matured in tanks and released early to market. These are some of the purest expressions of the grape and some of the most enjoyable too! On the other hand, the dry red Mavrodaphne wines can age for a long time, due to the considerable tannin concentration and balanced acidity. Ageing in large barrels usually lasts for a year, while bottle ageing can last for decades.

Greek winemakers like to blend different varieties, and Mavrodaphne has been used in some *blends*. You can find it together with other Greek grapes, like Agiorgitiko and Mavro Kalavritino in Peloponnese, Xinomavro in Naoussa even the white grape Vostilidi in Cephalonia. Sclavos blends 17% Vostilidi with Mavrodaphne in Synodos and plans **the revival of historical Thiniatiko wine** (70% Mavrodaphne plus Korfiatiko and Araklino).

Its international partners are equally diverse, ranging from Merlot, Cabernet Sauvignon and Syrah, to the Italian Refosco. When blended, Mavrodaphne contributes round resolved tannins, dark ruby colour, delicate fruits and notes of Mediterranean herbs.

## Rose wines

Following the variety's success in its dry red expression, producers are expanding the boundaries with the creation of rose wines. Found primarily on Cephalonia island, the light-coloured rose wine shows high potential as another modern version of Mavrodaphne.

## Trends

Despite the success of sweet Mavrodaphne this style seems to lose momentum on par with the decline of interest in sweet wines in general. As a result, more and more wineries have brought **a dry expression to the market** in recent years. The vineyard area is increasing again, with more emphasis on high-quality locations. Vineyard aspect and altitude are essential when making dry red wines. The aim is the required hang time to increase tannin ripeness without gaining overwhelmingly high alcohol or raisiny aromas.

It is not only producers who are interested in this variety. Demand in the Greek market is also increasing. Moreover, the limited supply and the high quality of the wines causes wine prices to increase year by year, making the variety even more attractive for the producers, who see their efforts being rewarded.

### Implications regarding the name

Mavrodaphne is a hot topic in the Greek wine world at the moment. Old laws of the 70s forbid writing the name of the variety on the label. It is reserved only for the two sweet wine appellations, Mavrodaphne of Cephalonia and Mavrodaphne of Patra. Producers use innovative names which suggest the variety used, like Daphne, The Black Daphne, Laura Nera, Daphne Nera, Laura Nobile, Laurier Noir, XMD (Xinomavro, Mavrodaphne), Tsigelo etc.

Producers in Cephalonia and Achaia petition to change the sweet wines' appellation rules to include the dry examples. With so many high quality dry red wines on the market, it will probably happen, but as with all bureaucracy, it will take time.

## Food pairings

Dry Mavrodaphne pairs well with traditional Greek food, like veal or lamb slowly cooked on the pot with tomato sauce, served with vegetables. Even better if some herbs like sage or laurel have been added.

The sweet Mavrodaphne wines are excellent pairings to most desserts. Dark chocolate-based desserts, particularly make of a fantastic pairing.

## ?geing potential

3-5 years for the fresh styles and up to 10 years for best examples. Boundaries are still explored.

## Notable producers and wines

**Sweet wines:** Achaia Clauss, Mercouri, Parparoussis, Foivos, Sclavos

**Dry wines:**

### Cephalonia

Sclavos: Orgion & Monambeles (classic structured examples), delicate Synodos blends Mavrodaphne with white Vostilidi

Petrakopoulos ?OV (prephylloxera vineyards) & ??? (refined and gastronomical rose)

Gentilini Iri's vineyard (unoaked and pure) & Eclipse (dense and full throttled example)

Sarris Megali Petra (min intervention approach)

Foivos

Haritatos (clean pure Medemoiselle label)

### **Peloponnese**

Parparoussis Taos (ageworthy and layered, a benchmark)

Mercouri Daphne Nera (similar style to Taos)

Achaion Laura Nera

Papargyriou The Black Daphne (generous alcohol and full-bodied)

Rouvali Tsigello (pure and delicious expression)

Tetramythos Laurier Noir (perfumed new effort)

Markogianni Triton (structured and opulent)

Sant'or Krasis (elegant and textural, Pinot Noir like)

Zacharias Lexis M

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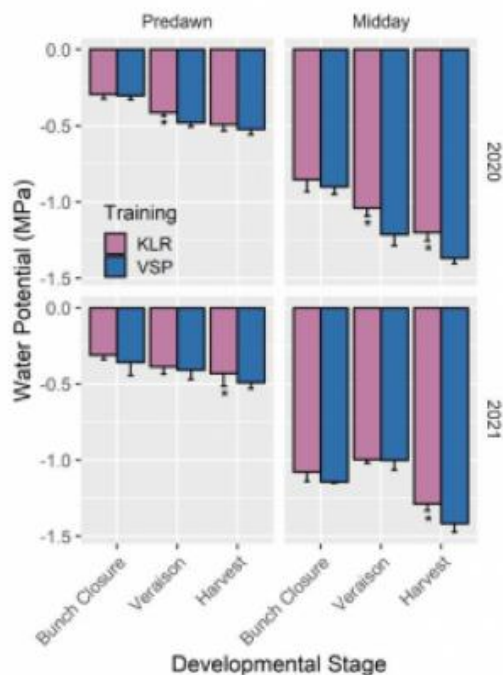
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Figure 2. Water potential:  $\Psi_{\text{predawn}}$  and  $\Psi_{\text{leaf}}$  (MPa) at three growth stages (bunch closure, veraison and harvest) of KLR and VSP training systems for 2020 and 2021. The values are averages  $\pm$  SD. Averages followed by \* are different  $p < 0.05$ , Tukey's HSD,  $n = 5$ .



There were significant differences in vine water status between the two training systems depending on the developmental

[11]

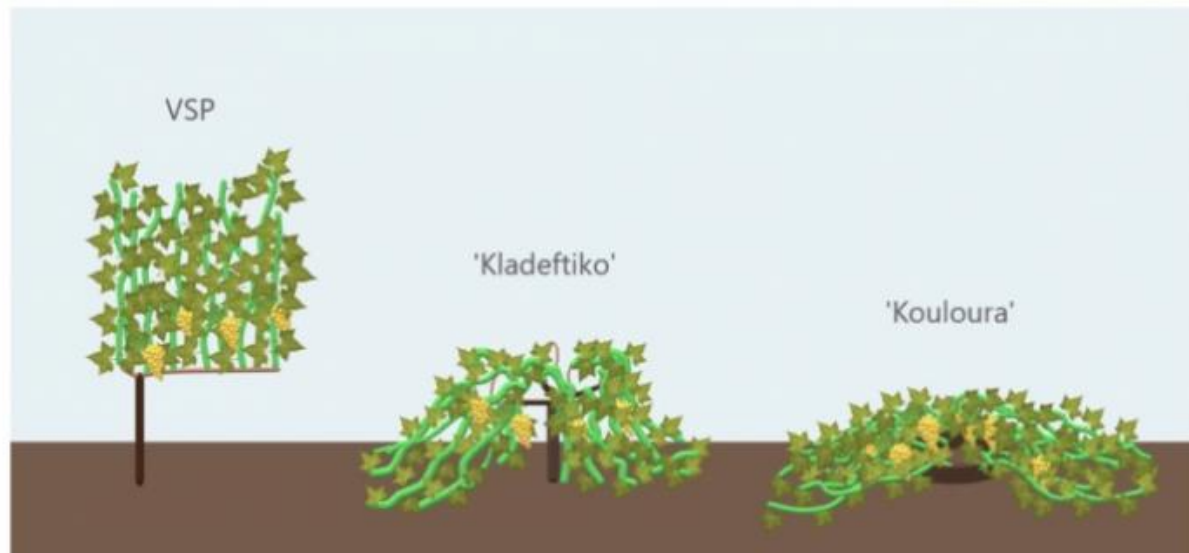
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[Recent study on training systems in Santorini shows that the basked trained system is the best solution to climate change](#) [11]

of 310 mm (average from 1974 through 2013) has been observed, which is even lower than in any regions of Crete (southwest Spain) and Pafos (Cyprus), where the precipitation varies from 380 to 700 mm (García-Martín *et al.*, 2022).

Own-rooted and phylloxera-free vines have been cultivated on the volcanic soil of Santorini for thousands of years. All this time, vines have been cultivated using two traditional training systems, the 'Kouloura' and the 'Kladeftiko' (Figure 1), which are well-adapted to the specific climatic conditions of the island. (Xyrafis *et al.*, 2021).

Figure 1. Illustration of the traditional training systems of Santorini ('Kladeftiko' and 'Kouloura') and the VSP.



The objective of this study was to compare the physiological and agronomic response of Assyrtiko grapevines to the traditional training systems 'Kouloura' and VSP training system over two growing seasons and to establish the factors influencing the performance of each system in the semi-arid conditions of Santorini Island as an alternative training system to adapt viticulture in other warm, dry wine regions.

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[Beyond Expectations: Papagiannakos Honores 2015 and Savatiano's Renaissance](#) [14]**Links**[1] <https://doi.org/10.1071/FP09034>[2] <https://doi.org/10.20870/oeno-one.2020.54.4.3129>[3] <https://www.karakasis.mw/future-greek-varieties>[4] <https://doi.org/10.3897/vdj.1.e37852>[5] <https://www.weather-atlas.com/en/greece/cephalonias-climate>[6] <https://twitter.com/share>[7] <mailto:?subject=Mavrodaphne&body=https://www.karakasis.mw/greek-varieties/mavrodaphne>[8] <https://www.karakasis.mw/printpdf/1736>[9] <https://www.karakasis.mw/policy>[10] <https://www.karakasis.mw/filter/tips>[11] <https://www.karakasis.mw/recent-study-training-systems-and-vine-density-santorini-island-shows-baked-trained-system-best>[12] <https://www.karakasis.mw/h-koyloyra-i-apantisi-stin-klimatiki-allagi-sti-santorini>[13] <https://www.karakasis.mw/moralis-kai-krasi>[14] <https://www.karakasis.mw/beyond-expectations-papagiannakos-honores-2015-and-savatianos-renaissance>