

Ampelographic presentation of some indigenous grape varieties of Greece

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Abstract. Greek indigenous wine grape varieties are treasure for wine lovers around the world because of the diversity and uniqueness of Greek wines. There are hundreds of indigenous wine varieties in Greece, making the country one of the most "diverse" wine producers, and Greek vineyard - one of the richest in the world. The local wine varieties of Greece are an irresistible arsenal for wine production of every type and style, to suit any taste. The paper presents the ampelographic description of some well-known local wine varieties of Greek growing regions.

Key words: ampelography; variety; wine.

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Ампелографическое представление некоторых местных сортов винограда Греции

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Аннотация. Технические сорта винограда Греции представляют собой сокровище для ценителей вина во всем мире из-за своей уникальности. Здесь возделываются сотни сортов для производства вин любого типа, на любой вкус, что дает возможность рассматривать страну как одного из самых «разноплановых» производителей вина, а греческие виноградники - одними из самых богатых на сортовое разнообразие в мире. В статье представлено ампелографическое описание некоторых широко известных греческих технических сортов винограда.

Ключевые слова: ампелография; сорт; вино.

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Introduction

Favorable soil and climatic conditions of our country led to the development of viticulture from a very early age. The first indication of viticulture goes back to Neolithic period.

More than 200 Greek grape varieties along with synonyms, types and color variations are included and described in ampelography.

Ampelographic collections of the country host more than 550 Greek varieties with synonyms, types, variants

or potential clones. The National Catalog includes about 250 names and synonyms of Greek wine varieties.

In Greece, the number of cultivated or sporadically occurred varieties is very big, and even disproportionately big compared to the number of Greek vineyards. According to ampelography of Kribas, Davidis, Vlachos, Logothetis, the number of Greek varieties apparently exceeds 350, while this number reaches 1000 if to include their variations and synonyms.

Materials and methods

The description of morphological characteristics of the varieties and their coding (the code numbers given in parentheses) was carried out in accordance with the code of the International Organization of Vine and Wine



Fig. 1. 'Agiorgitiko' ('Nemea')



Fig. 2. 'Asyrtiko'

(O.I.V., 2013).

Results and discussion

The richness of indigenous varieties in Greece is inexhaustible, although many of these varieties are at risk or in danger of extinction. This paper presents data from the ampelographic description of some classic, emerging and rare indigenous Greek wine varieties.

'Agiorgitiko' ('Nemea')

The variety 'Agiorgitiko' is multidimensional, since it gives rosé and red tank wines (fresh), short or long aging, red wines ripen in barrels, give semi-sweet and sweet wines with strong fresh red fruit aroma.

The elements of ampelographic description of the variety are the following:

Young shoot: The form of tip of the young shoot is opened (001-7) with a very high density of prostrate hairs of tip (004-9).

Young leaf: the upper side color is green with bronze spots (051-2) with none or very weak intensity of anthocyanin coloration (052-1) and high density of prostrate hairs between veins (053-7).

Shoot: Its attitude is horizontal (006-5) and the distribution of tendrils on the shoot is discontinuous (016-1), the length of tendrils is medium (017-5).

Inflorescence: the sex of the flower is hermaphrodite (151-3).

Mature leaf: the leaf blade size is medium (065-5), its shape is pentagonal (067-3), the number of lobes is five (068-3). Anthocyanin coloration of main veins on the upper side of the blade is absent or very weak (070-1). The shape of leaf teeth on both sides is rectilinear (076-2), with a medium length of teeth (077-5). The general shape of petiole sinus is slightly overlapping lobes (079-6) with the V-shaped base of the petiole sinus (080-2). The density of prostrate hairs between veins of the lower side is high (084-7) and the density of erect hairs in main veins of the lower side is very weak to absent (087-1)

Bunch: size is medium (202-5), with high density (204-7).

Berry: size is small (220-3), with a sort elliptic shape (223-4), skin color is blue-black (225-6).

Phenological stages: the time of bud burst is the second ten-day period of April (301) and the time of beginning of berry ripening is the first ten days of August (303).

'Asyrtiko'

The 'Asyrtiko' is a rare world-class white variety and one of the most important varieties found in the Mediterranean basin. It is used for production of mainly white dry wines, some of which are matured in barrels. However, some sweet wines are produced from sun-dried grapes (sun-dried wines) of the 'Asyrtiko' variety.

The elements of ampelographic description of the variety are the following:

Young shoot: the form of tip of the young shoot is opened (001-7) with high density of prostrate hairs of tip (004-7).

Young leaf: the upper side color is yellow (051-3) with medium intensity of anthocyanin coloration (052-5) and medium density of prostrate hairs between veins (053-5).

Shoot: its attitude is semi-erect (006-3) and the distribution of tendrils on the shoot is discontinuous (016-1), the length of the tendrils is short (017-3).

Inflorescence: the sex of the flower is hermaphrodite (151-3).

Mature leaf: the leaf blade size is small (065-3), its shape is pentagonal (067-3), the number of lobes is five (068-3). Anthocyanin coloration of main veins on the upper side of the blade is absent or very weak (070-1). The shape of leaf teeth on both sides is rectilinear (076-2), with a short length of teeth (077-3). The general shape of petiole sinus is open (079-3) with the V-shaped base of the petiole sinus (080-2). The density of prostrate hairs between veins of the lower side is high (084-7), the

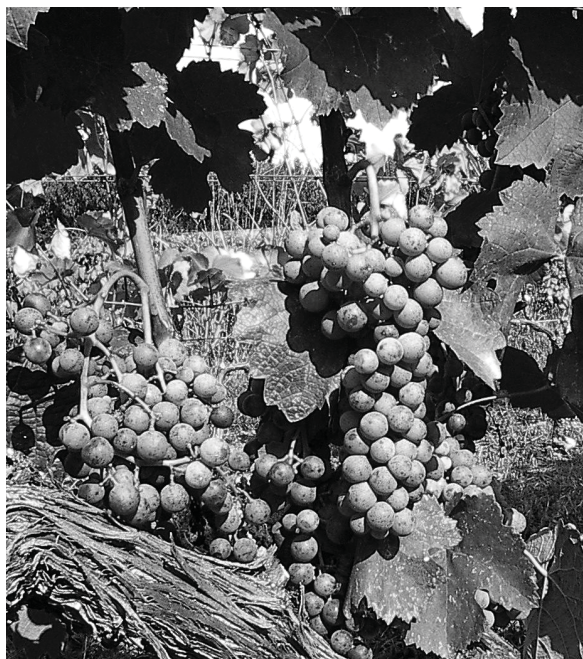


Fig. 3. 'Moschofilero'

density of the erect hairs in main veins of the lower side is very weak to absent (087-1).

Bunch: size is medium (202-5), with medium density (204-5).

Berry: size is medium (220-5), with a roundish shape (223-3), skin color is green-yellow (225-1).

Phenological stages: the time of bud burst is the second ten-day period of April (301) and the time of beginning of berry ripening is the first ten days of August (303).

'Moschofilero'

The variety 'Moschofilero' is used almost exclusively for the production of dry white and minimal - for sparkling wines. Of course, it often participates in wine blends, bringing his unique aroma.

The core of the cultivation of the late muscophile is the Peloponnese and especially the plateau of Mantinea.

The 'Moschofilero', as a variant, is probably more suitable for mountainous soils and is one of the main varieties in mountainous Arcadia.

The elements of ampelographic description of the variety are the following:

Young shoot: The form of tip of the young shoot is opened (001-7) with a very high density of prostrate hairs of tip (004-9).

Young leaf: The upper side color is yellow (051-3) with medium intensity of anthocyanin coloration (052-5) and very high density of prostrate hairs between veins (053-9).

Shoot: its attitude is semi-erect (006-3) and the distribution of tendrils on the shoot is discontinuous (016-1), the length of the tendrils is long (017-7).

Inflorescence: the sex of the flower is hermaphrodite (151-3).

Mature leaf: the leaf blade size is very large (065-9), its shape of blade is pentagonal (067-3), and the number of lobes is three (068-2). Anthocyanin coloration of main veins on the upper side of the blade is absent or very weak



Fig. 4. 'Xinomayro'

(070-1). The shape of leaf teeth on both sides is convex (076-3), with a medium length of teeth (077-5). The general shape of petiole sinus is closed (079-5) with the V-shaped base of the petiole sinus (080-2). The density of prostrate hairs between veins of the lower side is high (084-7) and the density of the erect hairs in main veins of the lower side is very weak to absent (087-1).

Bunch: size is medium (202-5), with medium density (204-5).

Berry: size is medium (220-5), with a roundish shape (223-3), skin color is red (225-3).

Phenological stages: the time of bud burst is the second ten-day period of April (301) and the time of beginning of berry ripening is the first ten days of August (303).

'Xinomayro'

This is the noblest red Greek variety of northern Helladic vineyards. It is mainly cultivated in mountainous areas, in Macedonia, in northern-central Greece, but also in neighboring Thessaly.

As a polydynamic variety, it can give extremely structured wines, with a style and character that stands out, having the possibility of long-term aging. It also offers a full range of wine types produced: red, rosé and white (blanc de noir), dry, semi-dry, semi-sweet, fresh and aged, semi-sparkling, sparkling and sweet vins de liqueur, as well as wine spirits. Gives wines with high acidity and enough tannins.

The elements of ampelographic description of the variety are the following:

Young shoot: the form of tip of the young shoot is opened (001-7) with a very high density of prostrate hairs of tip (004-9).

Young leaf: the upper side color is yellow with bronze spots (051-4) with none or very weak intensity of anthocyanin coloration (052-1) and high density of prostrate hairs between veins (053-7).

Shoot: its attitude is semi-erect (006-3) and the

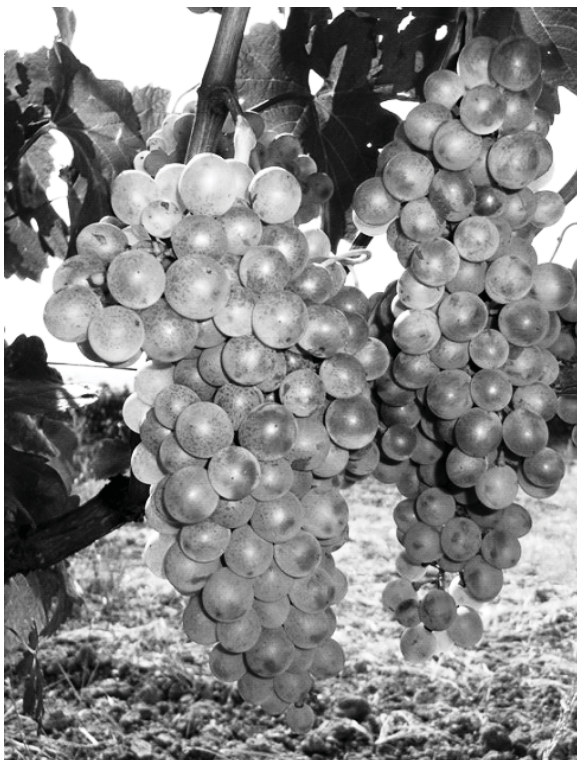


Fig. 5. 'Malagouzia'

distribution of tendrils on the shoot is discontinuous (016-1), the length of the tendrils is long (017-7).

Inflorescence: the sex of the flower is hermaphrodite (151-3).

Mature leaf: the leaf blade size is large (065-7), its shape is pentagonal (067-3), the number of lobes is three (068-2). Anthocyanin coloration of main veins on the upper side of the blade is weak (070-3). The shape of leaf teeth on both sides is convex (076-3), with a short length of teeth (077-3). The general shape of petiole sinus is lobes overlapping (079-7) with the V-shaped base of the petiole sinus (080-2). The density of prostrate hairs between veins of the lower side is medium (084-5), the density of the erect hairs in main veins of the lower side is very weak to absent (087-1).

Bunch: size is small (202-3), with medium density (204-5).

Berry: size is medium (220-5), with a roundish shape (223-3), skin color is red-black (225-7).

Phenological stages: the time of bud burst is the second ten-day period of April (301) and the time of beginning of berry ripening is the first ten days of August (303).

'Malagouzia'

The 'Malagouzia' variety gives wines with a moderately soft yellow-green color and a very intense, extremely expressive flavor and aroma with hints of peach, green pepper, basil and flowers. Wines are pleasant, cooling and aromatic.

It is early ripening, white, aromatic variety of terrestrial origin. As a plant it is of moderate vigor and quite productive. The elements of ampelographic description of the variety are the following:

Young shoot: the form of tip of the young shoot is opened (001-7) with high density of prostrate hairs of tip



Fig. 6. 'Vidiano'

(004-7).

Young leaf: the upper side color is yellow with bronze spots (051-4) with medium intensity of anthocyanin coloration (052-1) and high density of prostrate hairs between veins (053-7).

Shoot: its attitude is horizontal (006-5) and the distribution of tendrils on the shoot is discontinuous (016-1), the length of the tendrils is medium (017-5).

Inflorescence: the sex of the flower is hermaphrodite (151-3).

Mature leaf: the size of the leaf blade is medium (065-5), its shape is pentagonal (067-3), the number of lobes is five (068-3). Anthocyanin coloration of main veins on the upper side of the blade is absent or weak (070-1). The shape of leaf teeth on both sides convex (076-3), with a medium length of teeth (077-5). The general shape of petiole sinus is slightly open (079-4) with the V-shaped base of the petiole sinus (080-2). The density of prostrate hairs between veins of the lower side is medium (084-5), the density of the erect hairs in main veins of the lower side is high (087-7)

Bunch: size is small (202-3), with medium density (204-5).

Berry: size is medium (220-5), with a roundish shape (223-3), skin color is green-yellow (225-1).

Phenological stages: the time of bud burst is the second ten-day period of April (301) and the time of beginning of berry ripening is the first ten days of August (303).

'Vidiano'

This is a white variety, originating from Crete and used for the production of white dry wines. It gives wines of yellow-green color, with intense, distinct and complex aromas, which, among others, are reminiscent of ripe peach and apricot, with hints of aromatic herbs



Fig. 7. 'Plyto'

and minerality.

The elements of ampelographic description of the variety are the following:

Young shoot: the form of tip of the young shoot is opened (001-7) with a very high density of prostrate hairs of tip (004-9).

Young leaf: the upper side color is copper yellow (051-5) with medium intensity of anthocyanin coloration (052-5) and high density of prostrate hairs between veins (053-7).

Shoot: its attitude is semi-erect (006-3) and the distribution of tendrils on the shoot is discontinuous (016-1), the length of the tendrils is very short (017-1).

Inflorescence: the sex of the flower is hermaphrodite (151-3).

Mature leaf: the size of the leaf blade is medium (065-5), its shape is pentagonal (067-3), the number of lobes is five (068-3). Anthocyanin coloration of main veins on the upper side of the blade is absent or very weak (070-1). The shape of leaf teeth on both sides is rectilinear (076-2), with a medium length of teeth (077-5). The general shape of petiole sinus is lobes slightly overlapping (079-6) with the V-shaped base of the petiole sinus (080-2). The density of prostrate hairs between veins of the lower side is high (084-7) and the density of the erect hairs in main veins of the lower side is weak (087-3).

Bunch: size is large (202-7), with high density (204-7).

Berry: size is medium (220-5), with a cylinder shape (223-8), skin color is green-yellow (225-1).

Phenological stages: the time of bud burst is the second ten-day period of April (301) and the time of beginning of berry ripening is the first ten days of August (303).

'Plyto'

This variety is one of the most famous old Cretan varieties but in recent years was in danger of extinction. It is a lively plant, productive but susceptible to diseases. Its grapes are medium, with a golden-yellow rind, rare refreshing acidity and a lemony taste.

The elements of ampelographic description of the



Fig. 8. 'Avgoustiatis'

variety are the following:

Young shoot: the form of tip of the young shoot is opened (001-7) with a medium density of prostrate hairs of tip (004-5).

Young leaf: the upper side color is copper yellow (051-5) with strong intensity of anthocyanin coloration (052-7) and sparse density of prostrate hairs between veins (053-3).

Shoot: its attitude is horizontal (006-5) and the distribution of tendrils on the shoot is discontinuous (016-1), the length of the tendrils is short (017-3).

Inflorescence: the sex of the flower is hermaphrodite (151-3).

Mature leaf: the size of the leaf blade is large (065-7), its shape is pentagonal (067-3), the number of lobes is seven (068-4). Anthocyanin coloration of main veins on the upper side of the blade is weak (070-3). The shape of leaf teeth on both sides is convex (076-3), with a long length of teeth (077-7). The general shape of petiole sinus is lobes slightly overlapping (079-6) with the V-shaped base of the petiole sinus (080-2). The density of prostrate hairs between veins of the lower side is medium (084-5) and the density of the erect hairs in main veins of the lower side is medium (087-5).

Bunch: size is medium (202-5), with high density (204-7).

Berry: size is small (220-3), with an obovate shape (223-7), skin color is green-yellow (225-1).

Phenological stages: the time of bud burst is the second ten-day period of April (301) and the time of beginning of berry ripening is the first ten days of August (303).

'Avgoustiatis'

The 'Avgoustiatis' is cultivated in a small area mainly in the Peloponnese and specifically on its western side, near wonderful beaches and, of course, in Ancient Olympia. The red variety 'Avgoustiatis' gives impressive wines of good quality, mainly red and rarer rosé.

The elements of ampelographic description of the

variety are the following:

Young shoot: the form of tip of the young shoot is opened (001-7) with a medium density of prostrate hairs of tip (004-5).

Young leaf: the upper side color is yellow with bronze spots (051-4) with medium intensity of anthocyanin coloration (052-5) and medium density of prostrate hairs between veins (053-5).

Shoot: its attitude is horizontal (006-5) and the distribution of tendrils on the shoot is discontinuous (016-1), the length of the tendrils is short (017-3).

Inflorescence: the sex of the flower is hermaphrodite (151-3).

Mature leaf: the size of the leaf blade is medium (065-5), its shape is pentagonal (067-3), the number of lobes is five (068-3). Anthocyanin coloration of main veins on the upper side of the blade is absent or very weak (070-1). The shape of leaf teeth on both sides is convex (076-3), with a medium length of teeth (077-5). The general shape of petiole sinus is closed (079-5) with the V-shaped base of the petiole sinus (080-2). The density of prostrate hairs between veins of the lower side is medium (084-5) and the density of the erect hairs in main veins of the lower side is very weak to absent (087-1).

Bunch: size is small (202-3), with loose density (204-3).

Berry: size is small (220-3), with a roundish shape (223-3) and color of skin is blue-black (225-6).

Phenological stages: the time of bud burst is the

second ten-day period of April (301) and the time of beginning of berry ripening is the first ten days of August (303).

Conclusions

The cultivation of wine varieties in Greece in recent years is in crisis despite the fact that Greek wine has managed to open new avenues in markets outside Greece.

It is generally accepted according to a relevant study of the industry, that the further development and improvement of the competitiveness of the industry should be based on local Greek varieties. The main concern is the rescue of the traditional Greek wine varieties and the evaluation of selected clones of some of the most important Greek varieties.

For this purpose, high quality propagating material is created for indigenous wine varieties already registered in the National Catalog, which will contribute to the spread of their crops, offering advantages such as differentiation of the final product in wine market and comparative advantage in end products as the demand for wines from new traditional varieties in the domestic and international market is constantly increasing.

Therefore, to strengthen not only the competitiveness ultimately, but also the direction in new production targets such as those arising from climate change, the emergence of new diseases, the environmental protection requirements and consumer behavior, it is necessary to deepen our knowledge about physiology and pathology of the vineyard and develop tools and genetic databases.

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