

## Research Note

## Origin of grapevine varieties in Crimea and *Vitis vinifera* subsp. *sylvestris* classification

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**Key words:** wild grapevine; autochthonous varieties.

**Introduction:** The plants of grapes are ecologically plastic, and wild relatives of cultivated grapes, belonging to the species *Vitis vinifera* L. subsp. *sylvestris* (Gmel.) Hegi, occupy a large area of Europe and Asia (NEGRUL 1946). In each region under the influence of local conditions, variations of wild grapevine has been formed. Studies carried out by many authors indicated that the cultivated grapevine accessions (*Vitis vinifera* subsp. *sativa* DC.) originated from wild grapevines (NEGRUL 1960, NEGRUL *et al.* 1965, YANUSHEVICH and PELYAH 1971).

Each country or viticulture area has different specific local grapevine varieties (YANUSHEVICH and PELYAH 1971). There is reason to assume that the initial formation of the native grapevine varieties occurred on the basis of selection of wild grapevine in Crimea. Comparison of morphological traits of Crimean autochthonous varieties and wild grapevine accessions proved that numerous local varieties cultivated in ancient times in the Crimea derived from the wild-growing grapevine, and in particular: 'Kovalevka', 'Chersonesskiy', 'Lapa-Kara', 'Castel black', 'Ekim-Kara', 'Chernokrymskiy', 'Gevat Kara', 'Kefesiya' etc. (MALIKOV 1968).

The aim of this work is to study the wild and local grapevine accessions from Crimea (Ukraine) by the ampelographic point of view, in order to characterize the *sativa* and *sylvestris* germplasm.

**Material and Methods:** Eighty local Crimean grapevine varieties collected from the ampelographic collection of the Institute of Wine and Vines Magarach in Yalta (Crimea, Ukraine) and 160 accessions of wild grapevine collected in the Crimean forests were taken into account. The Yalta and Alushta wild grapevine populations were isolated in two different habitats of the Crimean Southern Coast. Studied accessions were described according to the OIV Official List (O.I.V. 2001). In order to differentiate the Crimean autochthonous varieties, 84 morphological descriptors were chosen, while only 30 OIV descriptors of mature leaves were included in the study to characterize wild grapevine accessions.

**Results and Discussion:** Differentiation of 80 Crimean autochthonous varieties using 84 ampelographic descriptors indicated that autochthonous varieties from Crimea can be included into various eco-geographical groups (NEGRUL 1946): Black Sea Basin - *V. vinifera* subsp. *sativa* convar *pontica* Negr., Western European - *V. vinifera* subsp. *sativa* convar *occidentalis* Negr. and Eastern European - *V. vinifera* subsp. *sativa* convar *orientalis* Negr. (Fig. 1). The obtained results confirmed the hypothesis about the origin of Crimean varieties from different regions, though Crimea is territorially located in the basin of the Black sea. Crimea is a region with frequent changes of populations, cultures and religions in the past. Accordingly, viticulture underwent periods of prosperity and decline. Thus, it should be hypothesized that in periods of Crimean viticulture decline, grapevine varieties cultivated previously were lost, and with the change of dominant cultures new varieties, that in place acquired new names, were imported.

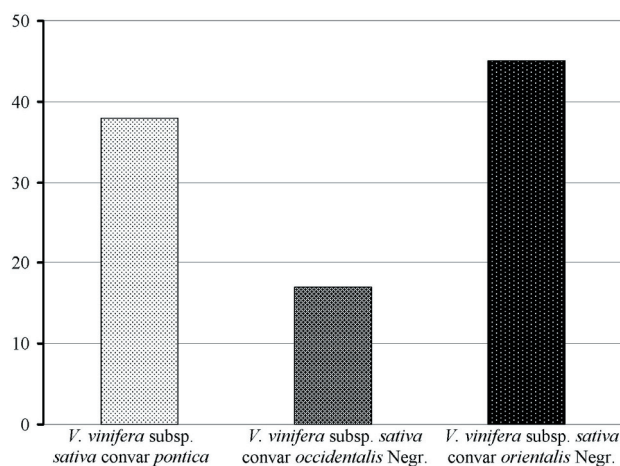


Fig. 1: Differentiation of Crimean autochthonous grapevine varieties into various eco-geographical groups based on the ampelographic description (in percentage). Y axis: number of varieties.

Study of morphological traits of wild grapevine accessions of Yalta and Alushta populations, isolated in two different habitats of the southern coast of Crimea, showed that all selected accessions belong to the subspecies *V. vinifera* subsp. *sylvestris* Gmel. Indeed, their flower was dioecious (VOLYNKIN *et al.* 2007). The ampelographic descriptions of 160 wild accessions from Crimea based on 30 OIV traits of mature leaves were similar to *sylvestris* varieties previously described by several researchers (MALIKOV 1968): *V. vinifera* subsp. *sylvestris* var. *aberrans* Negr.; *V. vinifera* subsp. *sylvestris* var. *tavrca* Bol. et Mal.; *V. vinifera* subsp. *sylvestris* var. *tipica* Negr.; *V. vinifera* subsp. *sylvestris* var. *tipica* with dissected leaves Bol. et Mal.; *V. vinifera* subsp. *sylvestris* var. *balcanica* Negr. and *V. vinifera* subsp. *sylvestris* var. *balcanica* with dissected leaves Bol. et Mal. (Fig. 2). Besides these groups, also identified species with larger leaf blade within var. *aberrans*, var. *tipica*, var. *tipica* with dissected leaves and var. *balcanica* with dissected leaves. We believe that such accessions can be considered as an intermediate between the known varieties of wild grapevine and varieties of eco-geographical groups.

In the Yalta *V. vinifera* subsp. *sylvestris* population were identified accessions that featured the variety *V. vini-*

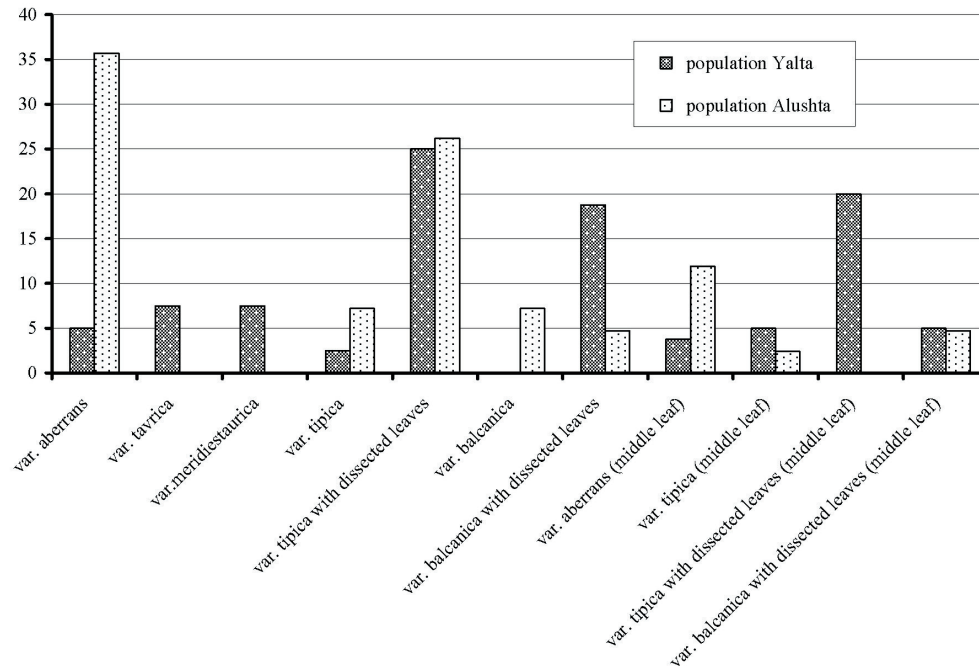


Fig. 2: Differentiation of wild grapevine accessions (*Vitis vinifera* subsp. *sylvestris*) from Yalta and Alushta populations of the Southern Crimean Coast by ampelographic descriptors (in percentage for each population). Y axis: number of accessions.

*fera* subsp. *sylvestris* var. *taurica* Bol. et Mal. However, within this group the ampelographic description allocated plants having dark green colour of the upper leaf surface, more pronounced upper clippings (shallow, vaulted with a pointed or rounded bottom) and the shape of the petiolar sinus (wide open, lancet, with a bottom limited veins). The identified differences assigned individuals to an additional species *V. vinifera* subsp. *sylvestris* var. *meridiestaurica* Vol. et Pol. (VOLYNKIN and POLULYAH 2011).

**Conclusions:** The carried out researches allowed to state that the *sativa* germplasm of Crimea could have different origins: from selection of Crimean wild grapevine, or varieties imported from different regions and or selection and hybridization of truly autochthonous and imported grapevines. Moreover, the survey in the forests of Southern Crimean Coast revealed the growing of wild endemic relic forms of grapevine concerning to *V. vinifera* subsp. *sylvestris* Gmel.

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