

## **Genetic characterisation of the Greek grapevine collection: belated but catching up quickly**

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### **Abstract**

Grapevine cultivation and wine production in Greece commenced during the Neolithic Period. As an outcome of this long cultivation period, many autochthonous varieties exist in the country; the recently updated National Catalogue contains 210 wine varieties together with 36 autochthonous table varieties, not considering clonal material that is getting registered for first time in the history of the country; considering the modern Greek bibliography, however, it is believed that a relatively large number of unidentified varieties occur in the countryside. Nearly all the registered genetic material is conserved in the collection of grapevine varieties, which is located in Lykovrysi (Athens, Greece) and maintained by the Hellenic Agricultural Organization DIMITRA. Collection of this material was performed progressively from the 1950's to the 1980's; this is the oldest and largest collection (hereafter: Collection) of autochthonous grapevine varieties in the country. Ampelographic description for each variety of the collection had been performed in the 1990's and they all are available. Molecular profiling, however, had never been performed in the past. The current work aims to cover this gap of information and characterization, representing a minor step towards modernisation of Greek viticulture. Ten microsatellite markers, including the six molecular descriptors introduced in the relevant 2009 OIV Catalogue plus the three markers incorporated in 2012, have been applied in order to create the molecular profile of each variety of the Collection. Within the frame of the markers used, a number of issues have been revealed: i) cases of synonymies/homonymies (as expected) even within the Collection's vineyard, ii) verbal similarities in the names (including color distinction) are not always accompanied by relevant genetic closeness, therefore, genetic analysis should be applied in order to define the degree of genetic similarity, iii) there have been cases of discrepancies and irregularities that came up upon comparison of the genetic material from the Collection with the material of the same name from the cultivation centres, indicating cases of misidentification.

Greece was among the pioneering countries in molecular profiling of the autochthonous grapevine resources; after a period of low activity, agricultural research has been re-activated and is catching up quickly.

**Keywords:** microsatellites, SSRs, native varieties