

PROTECTION OF GENETIC DIVERSITY: MAINTENANCE AND DEVELOPEMENTS OF A GRAPEVINE GENE BANK IN HUNGARY

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Abstract Among the items preserved in gene banks, the old standard and autochthonous varieties represent an increasing value, since these varieties may have properties to make their cultivation more effective under changing climatic conditions. The increasingly extreme weather is a huge challenge for the viticulture. Collectional varieties can also play important role in protection against pests and pathogens. A genebank ensures not only the preservation of rare varieties, but also gives the opportunity for more knowledge and research of these varieties.

Our main goal is to further develop national grape database, namely collecting and managing ampelographic and ampelometric descriptive data (OIV descriptors), imaging files, providing information on the origin of the varieties based on the data related to their pedigree, including parents, family trees and offspring.

We examine all 1.570 items in our gene bank with special attention to about 117 grape varieties autochthonous to the Carpathian Basin. From this collection more than 50 varieties can neither be found in national genebanks, nor in larger international collections, such as Bakhtiori Chernyi, Balsare Blanc, Cornucopia, Jabizlak, Piros Gránát, Kárpáti Rizling, Krabljak, Sesh i Zi, Polombina, or Tuingirni kara. Some of them are native to the Carpathian Basin, while others are mostly oriental origin. The genebank contains individuals propagated from the methuselah vine stock of Europe, such as the 450-500-year-old Rosa Menna di Vacca in city of Pécs (validated by SSR markers). Our research is also enriched by the Zametovka variety growing in Maribor (Slovenia), which considered as the oldest vine in Europe.

As a result of our work, the database system will also provide data obtained by molecular methods (SSR, SNP), which identify the genotypes supporting for the discovery of further relationships and for further research about the origin of the domesticated grapevine.

The most important international and autochthonous varieties of the genebank will be analyzed on berry skin and flesh anthocyanin composition as well as aroma profiles.

Keywords: Grapevine, Germplasm, Autochthonous varieties, Maintenance, Clonal selection, Breeding.