

Historical background and constraints of a grapevine germplasm foundation in Hajdú-Bihar county, Eastern Hungary

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Summary: The historical background of Debrecen linked to viticulture and wine-making stands mainly on the lack of drinkable water, the necessity of drinkable liquid during wartime and epidemics. The special character of the city evolved together with the changing lives of citizens and the increasing trade importance of the city. Period of Turkish occupation gave impetus to the formation of the 11 vine gardens of the settlement. After the devastation of rootmite and peronospora 'Kadarica' and 'Nagy burgundy' ('Blaufrankish'), in smaller proportion - on lower sites - 'Cabernet' were planted. As white varieties 'Ezerjő', 'Olasz Rizling', 'Kövidinka', 'white Mustos', in smaller proportion 'Szlankamenka', 'Erdei', 'Szilvaner', 'Mézesfehér', 'Bakar', 'Veltelini' (red), 'Fehér burgundi' (? white burdunder), 'Rajnai rizling', 'Red Tramini', 'Furmint', 'Muscat Lunel', 'Járdovány' and 'Juh-fark' were planted. After the Trianon treaty in 1920, 2/3rd of Hungary was cut away. Érmellék wine region was also cut in two, thus Debrecen broke away from its wine region. Legal regulations after the World War II. (1959) referred back to variety application advised in 1924 for "place suitable for good wine production, not included in any wine region", like Debrecen listing 'Ezerjő', 'Mézesfehér', 'Olaszrizling', 'Bánati rizling', 'Furmint', 'Hárslevelű', 'Kövidinka', 'Kecskemét virága', 'Piros szlankamenka', 'Pozsonyi fehér', 'Kadarka', 'Oportó' and 'Kékfrankos' (Blaufrankish). The political changes of 1990 and Hungary's admission to the European Union almost annihilated the wine production of Debrecen. However little gardens conserved historic varieties which could date back even to many centuries. Through a local magazine a collecting work was announced pointing to gather ancient local (*Vitis vinifera* conv. *pontica*) varieties forming a genebank, established on the experimental station of the University of Debrecen. In 2014, about 112 items were collected (accessions). As a 2nd round of the work, with a more detailed and precise work, further 81 items were put into the reservatum. The latter represent single stuck collection, whereas the first ones are to be studied as mixed items. Most notable accession names (ACENAME) of the work are: 'Fehér gohér', 'Veres gohér', 'Fekete gohér', 'Kék gohér', 'Erdei', 'Ezerjő', 'Kübeli', 'Rizling', 'Mézes fehér', 'Dinka', 'Madling', 'Bakator' and 'Kadarka'. Simultaneously with the strengthening and morphological description of conserved stuck genetic identification of the items is being elaborated. Database comprising FAO/IPGRI multi-crop passport descriptors and OIV Primary descriptor priority list are to be published on-line in between the development of the platform.

Rakonczás, N. (2018): Historical background and constraints of a grapevine germplasm foundation in Hajdú-Bihar county, Eastern Hungary. International Journal of Horticultural Science 2018 (1-2): 11-17. <https://doi.org/10.31421/IJHS/24/1-2./1541>

Key words: *Vitis vinifera* conv. *pontica*, regional gene bank, Debrecen, Eastern Hungary

Introduction

In Hungary several grape and wine production region exists (e.g. Bede, 2013; Taksonyi et al. 2010; Fekete et al., 2013) but Hajdú-Bihar region is not famous for its grape production and wine culture. Local journalists and „wine lovers” more often celebrate wines of other regions, and as time goes by the wine-history of the slopes around Debrecen seems to fall in complete oblivion. However, the historic maps and correspondence, administration reserved in the archives and museums of the city demonstrate the economic and cultural significance of this profession in the region. Moreover, the wine makers of the district, counting at least 20-30 people attending and participating in local wine competitions - based on grape produced in the district - still conserve memories, data and cultural heritage strictly belonging to the wine-history of the region.

Grape production is present around Debrecen and other surrounding towns eg: Hajdúhadház, Hajdúböszörmény, Derecske, Mikepércs, Hosszúpályi, Létavértes, Bagamér listed in order of approximate significance. These little, so called „closed gardens” are usually separated from inhabited, urbanized places situated near the settlements. Formerly, most of them were guarded by nominated guardians, and represented

financially independent entities led by a democratically elected person from the rank of possessors of the gardens. Today, these gardens are deserted, and have no legal representation and surveillance. Elderly possessors are usually between 60 and 80 years. Generational continuity is rare.

Literature and data report that genetic materials conserved in these gardens could date back even to the 17th century (at least), since the field-magnification of socialism (1950-1970) concerning the wine production of the region turned into the direction of Vámospércs, Hosszúpályi and Létavértes. However, clues of the devastation of filoxera, spread of direct producers and variety-policy of socialism can be found everywhere, ancient varieties of the Carpathian-Basin are also abundantly present. A curious coincidence could be that despite the agricultural policy of the communist era, these gardens remained untouched.

Regarding the background of this analysis one should not forget social arguments. These settlements and parts of districts could be characterised by notable social fallback. It is logical that the production of grape and wine could always give somework for people, thus facilitating living. Nowadays, this

situation seems to strike back. Safety of production in these gardens can rarely be guaranteed.

Characteristic point in historical background

Some factors determining the evolution of the region must be highlighted.

The city of Debrecen lies on an open plain site with considerably insufficient natural water source. The most important water source of the city was Hortobágy river and springs Tóció and Köntös. As Hortobágy river is situated far from the settlement, the lack of fresh water became a problem, viticulture and wine production gave an answer to this. Dishes based on boiled wine called „cibere” were present in everyday nutrition even for children (Égető, 1970). This data correspond to the horticultural activity of the city. Wine production was first present within the walls of the settlement (Görffy, 1942), and it was only later that it was pressed out the city walls, where wine gardens were established.

Debrecen was a merchant junction for routs from Poland, Kassa, Erdély, western and southern parts of Hungary, Kecskemét, but even Turkey. In the era of Turkish occupation and hegemony – as Debrecen was not occupied but subservient – the city of Debrecen had special privilege, the tax called „tithe” was not payed, but Turkish legislation taxed goods exported from the country which crossed the city.

The status of the settlement „market town = oppidium” rendered confined possibilities for citizens in the sense of possession of fields (ház, szérű, kert), and the handicraft character in itself did not facilitate safety for families to earn enough money for everyday life. The geographic situation of the settlement - being a merchant junction - gave two possibilities to earn good money: animal husbandry and wine production (Györffy, 1942; Fejér, 1970).

In the times of Turkish hegemony many people settled down in the city for its safer market town status, which gave certain safety against the predacious management of the Turks and a parallel obligatory taxation by Hungarian lords. These people become the workers, and/or the servants of the wealthy people of Debrecen. This typical process was also characteristic for other market towns, and this is how civic towns were formed (Debrecen just like other towns: Mezőtúr, Jászberény, Szeged, Halas, Makó) (Figure 1).

The wealthy citizens of Debrecen owned vineyards on nearby slopes of Érmellék (side slopes of the river Ér, about 30-50 kms from Debrecen), which represented a certain prestige, and demonstrated the hierarchical status of the upper class of the city. The first relevant clues are to be dated to 1587, listing settlements of Csatár (Hegyköz), Újlak and Bihar in possession of Peter Meliusz reformed bishop and Peter Gönczy, pastor. This class became the so-called “extenauts”, who increased their wine production (thus territories) in Érmellék region from 187,5 hl in 1587 to 427 hl in 1599. At the end of the 16th century about 32 possessors were ranked in this context, and the process just went further even in the 17th century (families of Komáromy, Pósalaki, Fényes). Wine production „controlled” by the Muslim Turks is confusing. Novel findings underline that taxation was the sophisticated tool to push back viticulture. After the stronghold of Nagyvárád fell in 1660, the tendency turned in the direction of Bihardiószeg (Diószeg). At the end of the Turkish hegemony in the surroundings of Diószeg, Újlak and Szentimre extrenauts from Debrecen harvested 1091 hl in 1692, and 2429 hl in 1693. Thus, in respect to the three mentioned settlements wine

production of extrenauts of Debrecen in Érmellék region demonstrated a fivefold increase. However, eleven wine gardens in the vicinity of Debrecen after the Peace Agreement in Szatmár (1711) did not show respective territorial increase.

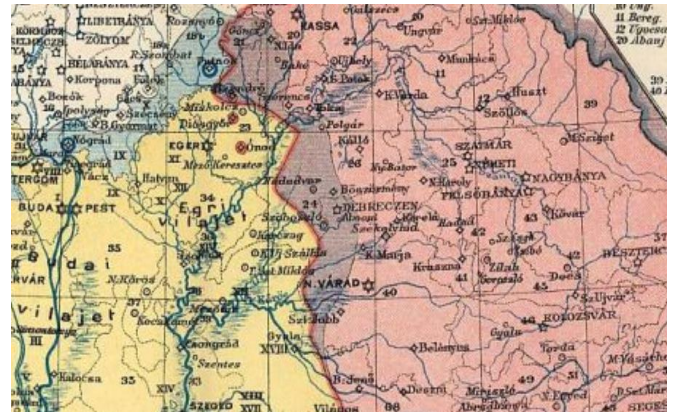


Figure 1. Position of Debrecen in 1606 during Turkish occupation (yellow: occupied and controlled; pink: Transylvanian Principality; darkened overlapping: subservient territory) (Acsády, ?)

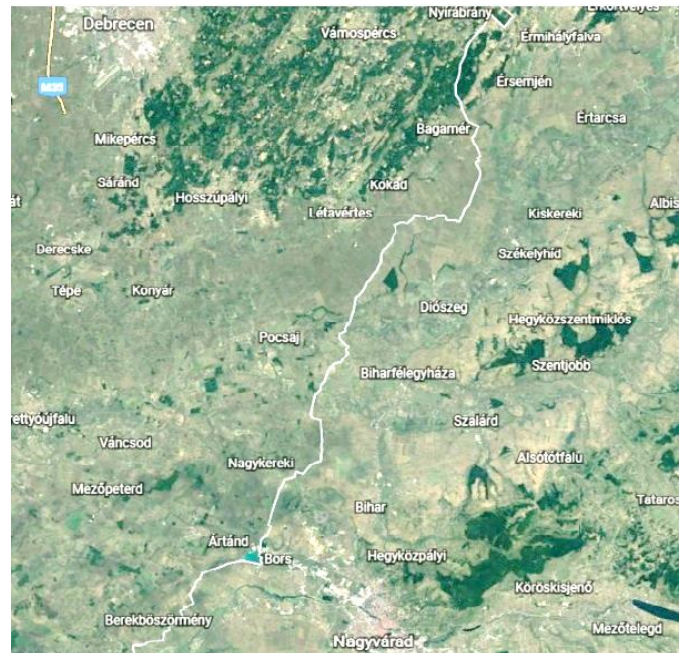


Figure 2. Territory of Érmellék wine region on Google map (I-1)

Vineyards of the free royal city

In the meantime increasing presence of civic possessors in Érmellék, eleven vinegardens surrounding the city of Debrecen were also initiated (Figure 2). Basic factors behind this:

1. Wine marketing possibilities with southern regions (Szekszárd as historic data (Szendrey, 1984) was cut away.
2. Marketing possibilities focusing on consumption potential of crossing marchant roads (animal husbandry, wine making).
3. Lack of drinkable water and sporadic incidence of epidemics (in general but even in wartime). Established gardens according to their time of establishment:

1573 – Garden of bishop Meliusz, later known as Patikás kert, Postakert.

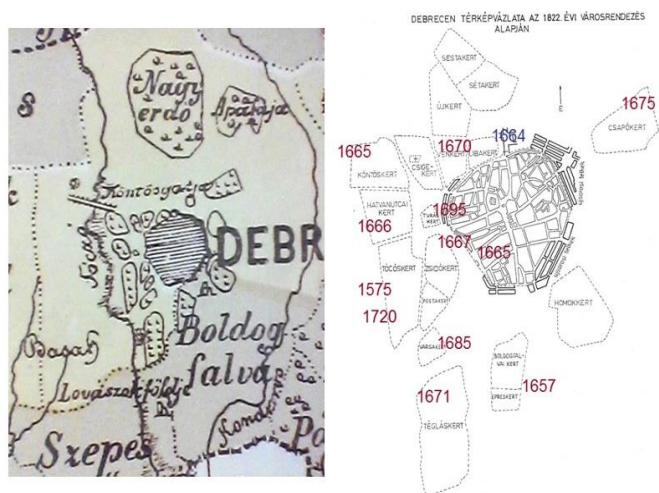


Figure 3. Gardens and vineyards of Debrecen 1650-1680; and in 1822 according to arrangement-plans of the city (HNA-AHBC; Rácz, 1981)

1575 – Vineyard by the lake Tóció.

1638 – Vineyards between streets Német (German) and Saint Michael. At this historic point vineyards started to be formed on more remote sites/ over the walls of the city. It is also worth mentioning that Debrecen never had functioning walls, which demonstrate its always characteristic openness in history (if it is rational from the economic point of view).

1657 – Vineyard of Boldogfalvi (“Happy village”)

1658 – Vineyards of Homokkert (“Sand-garden”) (based on commemoration in 1932, HBML), or 1708 (Rácz, 1981)

1665 – Vineyard at the little gate of Német street

1666 – Vineyard Köntös, by the bridge over spring Köntös (“Gown”); and also Öregkert (“Old garden”) at the opposite site at the end of Hatvan street (“Sixty”)

1667 – Vineyard Villangó

1667 – Vineyard at Mester street (“Master”), later known as Vénkert (“Even older garden”)

1751 – Garden of Csígekert

1671 – Vineyard Tégláskert (“Bricky garden”: loamy field used as brick-field)

1675 – Vineyard Csapókert was shared free for those who had no garden so far.

Parts: „Golgotahegy”, „Kincseshegy” (“Treasure-hill”), „Homokhegy” (“Sand-hill”).

1685 – Vineyard Vargakert.

1690 - 1695 – Vineyard Túrásos, or Disznótúrasi kert (“Swines’ rooting” at Hatvan street).

Total territory of vinegardens surrounding the city reached about 520 ha by the end of the 17th century.

1880 – Gardens of Sétakert (“Walking gardens”) (7,5 ha)

1880 – Gardens of Sexta kert (playground territory for first class students not allowed to go into the big forest, 65 ha) (Figure 3).

Devastation of root mite

The east and north part of the city is characteristically sandy, whilst the west side is loamy clay, thus these vinegardens fell under devastation of the phylloxera. As a consequence of territorial changes, the “League of Vinegrowers and Winemakers” of Debrecen was established, which turned to the legislation of the city with an amendment to facilitate the establishment of new vine plantations on sandy soil 2 kilometres from the railway station along the route to

Pályi (Monostorpályi). The proposal was accepted and a 345,6 ha vinegarden became established as Earl Jozef Dégenfeld’s vinegarden (later on Dégenfeld vinegarden). Works with the establishment of the garden on sandy soil was explicitly documented in “Winemakers’ Paper” of which data on planted varieties deserve attention (Debreceni szőlő- és bortermelőszövetkezet, 1896).

“Much emphasis was put on the plantation of economic class varieties, thus in category of red wine varieties ‘Kadarica’ and ‘nagy burgundy’ (‘Blaufrankish’), in smaller proportion on lower sites ‘Cabernet’ was planted. From the sortiment of white varieties ‘Ezerjő’, ‘Olasz Rizling’, ‘Kövidinka’, (from Magyarát) ‘Mustos’ (white), in smaller proportion ‘Szilvamenka’, ‘Erdei’, (green = zöld) ‘Szilvaner’, ‘Mézesfehér’, ‘Bakar’, red ‘Veltelini’, ‘Fehér burgundi’ (‘White burgunder’), ‘Rajnai rizling’, ‘Red Tramini’, ‘Furmint’, ‘Muscat Lunel’, ‘Járdovány’, ‘Juh-fark.’ (Names of varieties are directly translated and left in original form, as it is possible.) (Figure 4).

The Wine Community of Debrecen

The Wine Community of Debrecen (besides others in Hungary) was formed under the principal consent covered in Chapter 8 Legal Article 12 of 1884 (Hampel, 1913). The first constitution of 1906 nominated the community as “Kossuth Lajos Station, Debrecen, Wine Community” with an approximate 60 ha territory - generally referred to as “Kossuth Lajos Station” - which in 1920 incorporated “The Wine Community of Garden Ungvári”, and in 1947 was reduced in its name to „The Wine Community of Debrecen” (Nagy, 1965). With this boom there was 1275 ha grape plantation near Debrecen (Table 1).

Let us note here that despite the devastation of phylloxera and that of downy mildew, 10.000 hectolitres of new wine got decanted averagely on a yearly basis, from cc. 1000 hectares of vineyards around Debrecen between the Austro-Hungarian Compromise (1867) and World War I.

Times after world wars

After the World War II. (more precisely from 1942) 17 wine regions were distinguished in Hungary with a total territory of 210.825 ha. The fourteenth was Nyírség Wine Region, which by legal regulation encompassed vineyards of Szabolcs, Szatmár, Hajdú and Bihar Comitata (counties of the kingdom of Hungary), and vinegardens of Debrecen. The wine region with its 81.312 ha total territory resembled 38,6% of the total wine production of Hungary (Feyér, 1970).

The 300/1949 governmental regulation eliminated all Wine Communities in Hungary. Around 50 thousand hectare vineyard ceased to exist in a 5-6 year period (20-30% of the total). The 2/1959 (XI. 27.) enactment of 23rd statute in 1959 listed only 14 wine regions, and Hajdú-Bihar is listed only as “place suitable for good wine production, not included in any wine region” (Feyér, 1981). This regulation was based on monographic surveying focusing on comprehensive description of characteristics of production factors, and wine quality. This work also gave guide in question of “advised”- and “allowed varieties”.

According to the definition of this regulation a “place suitable for good wine production, not included in any wine region” in Hajdú-Bihar near Debrecen, included districts of

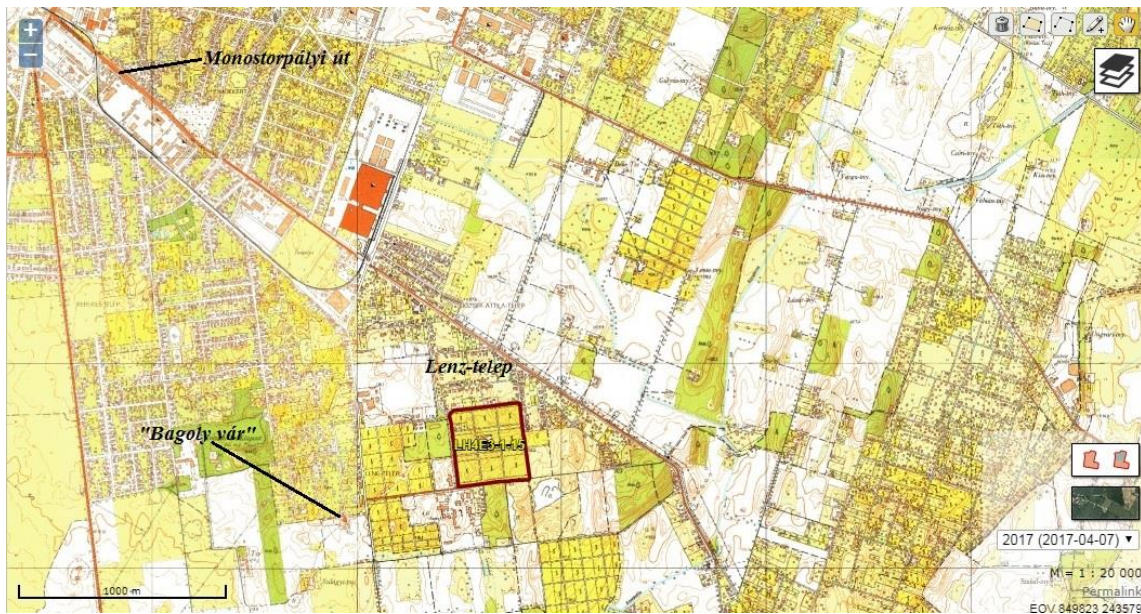


Figure 4. Remaining clues of historic vinegardens by the topographic data of MEPAR system (I-2)

Table 1. Yield of the 11 vinegardens of Debrecen between 1861 and 1918 (HBML. Debreceni Tára IV.B. 1405/b; ill. U.o. 1414/b from 1877 to 1916)

Year	Territory	Yearly harvest	Sold grape	Average yield
	ha	hl	kg	hl/ hectar
1863	730,368	14883	?	20,38
1876	588,096	3871	835	6,49
1880	576	40603	?	70,49
1882	745,92	11400	1710	15,28
1883	745,92	23336	2594	31,28
1884	716,544	11563	4156	16,13
1885	716,544	6854	2190	9,57
1893	540,288	10318	?	19,10
1895	503,424	3550	36000	7,05
1901	881,28	5400	?	6,11
1903	1149,12	6150	?	5,35
1906	1275,264	35534	?	27,85
1915	993,6	10000	?	10,07
1916	863,424	3000	?	3,49
1917	863,424	15010	?	17,38
1918	863,424	15010	?	17,38

Hajdúhadház, Kokad, Nagyléta, Újléta and Vámospércs; and from the country of Szabolcs-Szatmár Sóstóhegy-part ("Saltlake-hill") of Nyíregyháza, but also districts of Barabás and Napkor are also listed here.

These territories became defined as district of Nyírség, on which variety-advice of 1924 was generally ratified/approved as follows:

- For country of Szabolcs-Szatmár, district Sóstóhegy-part of Nyíregyháza (place suitable for good wine production, not included in any wine region): 'Ezerjő', 'Mézesfehér', 'Olaszrizling', 'Bánáti rizling'.

- For the district of Barabás: 'Furmint', 'Hárslevelű', 'Olaszrizling', 'Bánáti rizling'.

- Otherwise, advised white wine grape varieties for the – referred – lowland wine region: 'Ezerjő', 'Kövidinka', 'Kecskemét virága', 'Piros szlankamenka', 'Mézesfehér', 'Pozsonyi fehér'; and red wine grape varieties: 'Kadarka', 'Oportó', 'Kékfrankos' ('Blaufrankish').

Materials and methods

Concept of the work

The basic point of this essay is to provide a brief summary of historic clues, data and other information corresponding to the definition of terroir (OIV), which underline the value conserved in national identity, cultural heritage and memories of a population manifested in traits of technological elements. This base logically results in the formation of common understanding and perception of having possibility for the future.

The basic concept of collecting genetic materials is that there are only few and non reliable old literature concerning listing and/or describing ancient and medieval grape cultivars of the Carpathian Basin. First, there is a probability that the work could also result in finding cultivars which have never been described before. However, they are present for more centuries. For second reason, old clones of varieties – as these are - present on the National Variety List, could also be valuable. These materials persisted in small scale production on their own, for centuries, and these were not involved in the selection activities in the previous regime focusing on mass production (a highly questionable selection policy). The fact that these genetic materials persisted in production without legislative control for centuries strictly demonstrate that their presence in production is justified. Thus, the procedure of official DUS could be considered unnecessary.

The foundation of the germ plasm collection was started in 2014, when during spring time Hajdú-Bihari Napló (a local newspaper) presented an announcement for collecting old grape varieties in the region to be preserved at the Horticultural Research Station in Pallag of the University of Debrecen (UD) (Figure 5). As the first step of the work, about 30 calls came in.

Each items were registered and marked with a number in a subsequent order of suppliers. Another number was given for the item for each specific site/supplier (ACCENUMB), also the year of plantation, and an absolute number in order of all items (COLLNUMB). The so-called „told” names were also registered (ACENAME), since a great confusion of synonyms and acronyms was expected.



Figure 5. Announcement of the collecting work in the local newspaper in 2014 (Fábók, 2014)



Figure 6. CALLSITE-s of the work (I-1)

In the second round of the work, mostly perspective sites/suppliers were highlighted. To understand this, it is necessary to clarify that in the 16th - 19th centuries in Hungary, there were no clear plantations of one single variety. Head tanning was abundant in each wine region of the Carpathian Basin. Thus, depending on the topography plantations could have rarely been characterised with rows. The mixture of 5-10 varieties in a row was a general situation. As a result of this, wines were produced from blended (mixed) grapes of different ripening levels. This was known to be the general situation in Hajdúhadház and Derecske also. After the first round of collection, it was possible to focus on this characteristic of plantations, through which about 6 out of 35 sites/suppliers (CALLSITE) elevated. In the autumn of 2014, 2015 and 2016 these plantations were visited again, photos

were taken on bunches of items and labelled with a plastic, later on (2016) with engraved aluminium labels. Following spring each labelled item was collected and planted in the reservatum of UD. As a consequence of this, considerable incidence of duplicate-collection is expected.

Description and characterization of the collected material

FAO/IPGRI MULTI-CROP PASSPORT DESCRIPTORS are to be comprised in a single database together with OIV descriptors: Primary descriptors priority list. Characterisation of mature stucks was started in 2017. The database is to be published online (I-3).

Results

Figure 6 shows the extension and directions of CALLSITE-s of the work. It is an interesting fact that nobody contacted us from territories like Létavértes or Vámspércs, which were important sites of corporate land use during communism and also places of wine grape production.

As the first phase of the work, 29 successful trips were performed on spring 2014, and a reservatum of 112 items (with 5 stucks each item) was established. This part encompasses 33 marked ACENAME (variety) and a further “Unknown” group. The most notable of this part of the work collection (number and ACENAME): 12 Fehér gohér, 6 Veres gohér (red), 6 Fekete gohér (black), 3 Kék gohér (blue), 13 Erdei, 9 Ezerjő, 6 Kübeli, 5 Rizling, and also 3 Mézes fehér and 3 Dinka (Table 2-3).

It is important to highlight that canes in spring of 2014 were collected by the growers, thus these bunches of canes can not be taken homogeneous. No single-stuck sampling was performed in this round. (Hard to mention that a big proportion of these canes was not planted.) This manner aimed to spare time for the sake of efficiency. To facilitate higher safety for shooting of the items 2 or 3 canes were put in 1 stuck place. This eventuated a mixture of “varieties” within single stuck. This effect was not solved with cutting out “not suitable” but with transplantation of elevated “others”, which were labelled and marked with new registration numbers.

Based on the experience of 2014 four vinegardens were visited again in the autumn. The aim was to take photos on ripe bunches, and to collect canes of previously labelled single vine stucks in spring time. This phase of the work resulted 81 further collected items of which the most notable ACENAME-s are Madling (2 items), Bakator (4 items), Kadarka (2 items). One further garden was also scheduled in this round, but it was cut out in the meantime. It is also sad to note that after this round one of the visited gardeners died and his vinegarden was also cut out by the heirs.

Identification of the items (ACENAME-s)

ACENAME at present represents only a “told name”, thus the correct identification of each item is required, if it is possible. For the correct positioning of this work, basic factors of this uncertainty must be stated. First, it is clear that facing many synonyms is inevitable. Secondly, the correct morphological description of most items does not exist. Thus, besides strengthening the trained stucks and initiating the morphological description based on OIV descriptors, the

Table 2. Summary of ACENAME-s for each CALLSITE in 2014

ACENAME // COLLSITE	Gohér WHITE	Gohér RED	Gohér BLUE	Gohér BLACK	Vállas Erdői	Ezerjő	Kübbeli	Szlankamanka	Rizling	Bónai Rizling	Mézis fehér "Honey white"	Dinka	Traminer	Vetleini early	Madling (? Madlen d Angevine)	Chasselas	Töklevélű "Pumpkin leafed"	Kadarka	Üveggyöly "Glass ball"	Piros Pozsonyi	Szeremi Zöld	Alfűz Ali	Ropogós "Crunchy"	Opontó	Nyírfélévelű "Poplar leafed"	Ananász "Pineapple"	Szigos szőlő "Colonus grape"	Bakator	Medoc/ Baco	Arany Sárfehér	Izabella	Izabella WHITE	UNKNOWN	Summa on COLLITES		
BAGAMÉR	1	0	2	0	2	0	0	0	1	1	0	0	0	1	0	0	0	0	0	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	14	
HAJDÚSZOBOSZLÓ	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	
HAJDÚHADHÁZ	4	0	0	3	3	3	4	1	2	0	2	2	0	0	1	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	27	
DERECSKE	1	2	0	0	1	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	
HAJDÚBŐSZÖRMÉNY	4	1	0	1	2	2	1	1	2	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	11	26
HOSSZÚPÁLYI	1	0	0	0	1	1	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	7	
HAJDÚSÁMSON	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	
HAJDÚDOROG	0	0	1	1	2	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	0	4	14	
MIKEPÉRCES	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	
DEBRECEN	1	2	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	1	0	8		
ISMERETLEN	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	3	
Nagyvárad	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	
Total on ACENAME (2014)	12	6	3	5	13	9	6	6	5	1	3	3	1	1	1	1	3	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	18	112	

Table 3. Summary if ACENAME-s for each CALLSITE 2015-2017

ACENAME // COLLSITE	Gohér-WHITE / YELLOW	Gohér RED	Rizling	Mézis fehér	Kübbeli	Vállas Erdői	Dinka	Ezerjő	Szlankamanka	Traminer	Madling	Töklevélű	Unknown	Kadarka	REPÜLŐ KADARKA ("flying")	Töklevélű	Bakator	BAKATOR - PURPLE	Izabella -PURPLE	Izabella - RED	Izabella - BLACK	FEHÉR HUSÚ FEKETE	ERDEI - BLACK	CHASSELAS - RED	JUHFAK	ROSKA	NOAH	DELAWARE - WHITE	DELAWARE - RED	OTHELLO	HAZAI "our"	SZEGEDI FEKETE - BLACK	BUCSEK (? rootstock)	FERI SZŐLŐ	TOTAL OF CALLSITE-S			
HAJDÚHADHÁZ (Czibere Sándor †)	0	0	2	0	1	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	1	2	1	0	0	0	0	0	0	0	0	0	0	0	0	9	
DERECSKE (Cseke Sándor)	1	2	0	0	1	0	0	0	0	1	0	0	3	0	0	1	4	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	14
(Schwarzkopf Margáéta - TEREBES)	0	0	0	0	0	0	0	0	0	0	0	1	2	1	0	0	0	1	1	1	2	0	0	0	0	3	1	1	1	1	0	0	0	0	0	0	16	
HAJDÚHADHÁZ (Fekete Gábor)	1	2	1	1	1	1	1	1	0	0	0	0	2	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	16	
HAJDÚDOROG (Pocsaji György)	0	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4		
HAJDÚBŐSZÖRMÉNY (Nagy Lajos)	3	3	2	0	3	0	0	0	0	0	0	6	0	1	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	1	0	0	1	0	0	22		
TOTAL 2015, 2016, 2017,	5	7	5	1	3	4	1	1	1	1	2	1	17	1	2	1	4	1	1	1	2	1	2	1	1	3	2	2	1	1	2	1	1	1	1	81		

Table 4. OIV priority primary descriptors for ACENAME Gohér (WHITE)

COLLNUMB	ACCENAME	OIV DESCRIPTORS															
		OIV 051	OIV 067	OIV 068	OIV 070	OIV 076	OIV 079	OIV 081-1	OIV 082	OIV 083-2	OIV 084	OIV 087	OIV 094	OIV 204	OIV 223	OIV 225	
scores -		(1-4)	(1-5)	(1-5)	(1-5)	(1-5)	1-3-5-7-9	1-9	(1-5)	(1-9)	1-3-5-7-9	1-3-5-7-9	1-3-5-7-9	1-3-5-7-9	(1-10)	(1-6)	
DE 4	Gohér - fehér	1	3	2,3	1	3	3	1	3		5	5	5	3	2	1	
DE 5	Gohér - fehér		3	1,2	3	3	7	9	1		3	9	1,3		2	6	
DE 6	Gohér - fehér		4	2	1	3	5	1	1	9	5	7	3		3	1	
DE 7	Gohér - fehér	1,1,3	2	2	1	5	7	1	1	1	5	9			2	1	
DE 8	Gohér - fehér	1,1,3	2	2	2,3	3	3,5	1	1	1	3	7	1,3		5	3,8	1
DE 9	Gohér - fehér	1	2	1,2	1	3	3,5	1	1	1,9	5	9	3	3	3,8	1	
DE 10	Gohér - fehér	1,1,3	4	5	3	5	3,5,7	1	4	1,9	3,5	1	7	3	2	1	

Table 5: OIV codes

OIV Code N°	Descriptor
OIV 051	Young leaf: color of upper side of blade (4th leaf)
OIV 067	Mature leaf: shape of blade
OIV 068	Mature leaf: number of lobes
OIV 070	Mature leaf: area of anthocyanin coloration of main veins on upper side of blade
OIV 076	Mature leaf: shape of teeth
OIV 079	Mature leaf: degree of opening/overlapping of petiole sinus
OIV 081 - 2	Mature leaf: petiole sinus base limited by veins
OIV 084	Mature leaf: density of prostrate hairs between main veins on lower side of blade
OIV 087	Mature leaf: density of erect hairs on main veins on lower side of blade
OIV 223	Berry: shape
OIV 225	Berry: color of skin

precise SSR-marker based identification must simultaneously be performed.

Description of items under ACENAME Gohér (white) in Tables 4-5 demonstrate the toughness of characterisation based on OIV primary descriptors priority list. Normally, this vehicle renders a tool for quick and relatively simple to score-characterisation. Insufficiencies emphasize the importance of other factors, like climatic factors, the condition and maturity of the stucks but virus infections also (a very important factor).

Acknowledgements

The holding institution thanks to people who make effort to preserve vineyards in Hajdú-Bihar county in Hungary, and special thanks to those who made effort in the foundation of

the gene bank at the University of Debrecen, either with canes of historic varieties or with financial donation. Author thanks to his wife and children for their patience for the grabbed time and heavy financial tolls put into this work.



“Supported by the ÚNKP-17-4 New National Excellence Program of the Ministry of Human Capacities.” The research/thesis/dissertation is supported by the EFOP 3.6.1-16-2016-00022 project. The project is co-financed by the European Union and the European Social Fund.

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