

DETERMINATION OF THE GENETIC RESOURCES OF LOCAL GRAPES GENOTYPES (*Vitis vinifera* subsp. *sativa*) IN KAYSERI REGION

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(Received 26th March 2020; accepted 20th April 2020)

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ABSTRACT. Kayseri, which is the cradle of many civilizations, is one of the oldest and most ancient settlements of Anatolia retained its importance from past to present. Kayseri, which is folk songs written on behalf of it' s name; such as; Gesi Bağları, Erkilet Bağları, İncesu Bağları etc., is a city with a well-known vineyard background, famous for its vineyards and grapes. On the other hand, due to the fact that the studies on the collection of local grape genotypes in Kayseri remain very limited, the grape genetic potential of the region has not been determined. Especially in recent years, giving up the cultivation of local genotypes with commercial concerns, the increase of urbanization and the shift of this increase to vineyard areas, the cultivation of local grape genotypes of Kayseri is decreasing day by day. If these valuable gene resources are not protected, they will be lost in the following years. This study was carried out in the vineyards areas and home gardens in Kayseri province and its districts in 2018 and 23 different regions were investigated in the center, district, and village. At the end of the study, a total of 174 local genotypes known by local people and grown for many years were determined. In the collected genotypes, from the point of their local name, 55 different genotypes were determined. In addition, the local grape genotypes belonging to Kayseri region will be correctly reproduced as true to type and a core collection vineyard will be established and the loss of the vine genetic resources will be prevented with this study.

Keywords: Genetic resource, grapes, grapevine, local genotypes, Kayseri

INTRODUCTION

Plant genetic resources have been indispensable basic raw material due to their importance for food and agriculture since long time. Traditional and local varieties are very valuable resources; highly adapt to the ecological conditions of the region and remarkable resistance against pests and diseases. They carry many quality qualities such as taste, color and size [1]. Local varieties gain importance in the development of new varieties [2].

Turkey's defined as the collection of local grape varieties and ampelographic many studies have been made in the past to the present, such as; Adana region [3], Sivas region [4], Konya and Karaman regions [5], Southeastern Anatolia region [6], West Mediterranean region [7] and İncesu / Kayseri [8]. The most important work was done by Tekirdağ Viticulture Research Station in 1965, 'National Collection Vineyard' was established and morphological descriptions of varieties were made [9].

Kayseri region of Turkey has been a vineyard area since ancient times. Kayseri is a famous province for its vineyards and grapes such as Gesi Vineyards, Erkilet Vineyards, and Incesu Vineyards etc. There is a rich genetic diversity in Kayseri from the past to the present. The cultivation of local grape varieties belonging to Kayseri such as Dimrit, Buludu and Parmak, which are known and loved by the local people, is decreasing. Especially in recent years, migration from rural areas, economic reasons, and the shift of urbanization into vineyard areas, these valuable gene resources are decreasing day by day. If the existing local varieties are not protected, they will disappear in the following years.

In this study, the local grape genotypes belonging to Kayseri region will be correctly reproduced as true to type and a core collection vineyard will be established and the loss of the vine genetic resources will be prevented.

MATERIALS AND METHODS

Material

This study was carried out in the vineyards areas and home gardens in Kayseri province and its districts in 2017-2018. 23 different regions were investigated in the center, district, and village (Fig. 1).



Fig. 1. Kayseri province and district map

Method

Firstly, in line with the harvest schedule, interviews were made with the agricultural engineers in the provincial and district directorates of agriculture and with the local people on district and village basis. Regarding the received references, the growers and vineyard areas were visited and information was given about the study within the framework of the survey-level interviews.

The local grape genotypes in the vineyards representing the region were identified and the necessary investigations were made, and healthy and productive vines (Province plate no - Region name abbreviation - Genotype no) were labeled as their location.

RESULTS AND DISCUSSION

In this study, Incesu district which has wide vineyard area and grape production; Garipçe, Bedir, Hamurcu and Süksün regions are divided into 4 different regions. Other districts studied were Develi, Yeşilhisar, Yahyalı, Özvatan, Bünyan, Sarıoğlan, Pınarbaşı, Sarız, Talas, Hacılar and Tomarza districts and Yuvalı, Yüceyar, Erkilet, Gesi, Hisarcık, Kızıltepe, Eğribucak and Mimsin districts connected to central districts.

As a result of the screening studies, a total of 174 local genotypes were identified from different regions. Among these genotypes, 55 different genotypes were determined in terms of local name. The number of genotypes examined by region (Fig. 2) and their local names (Table 1) are presented below. Some local grape genotypes in the collection vineyard are presented in Fig. 3.

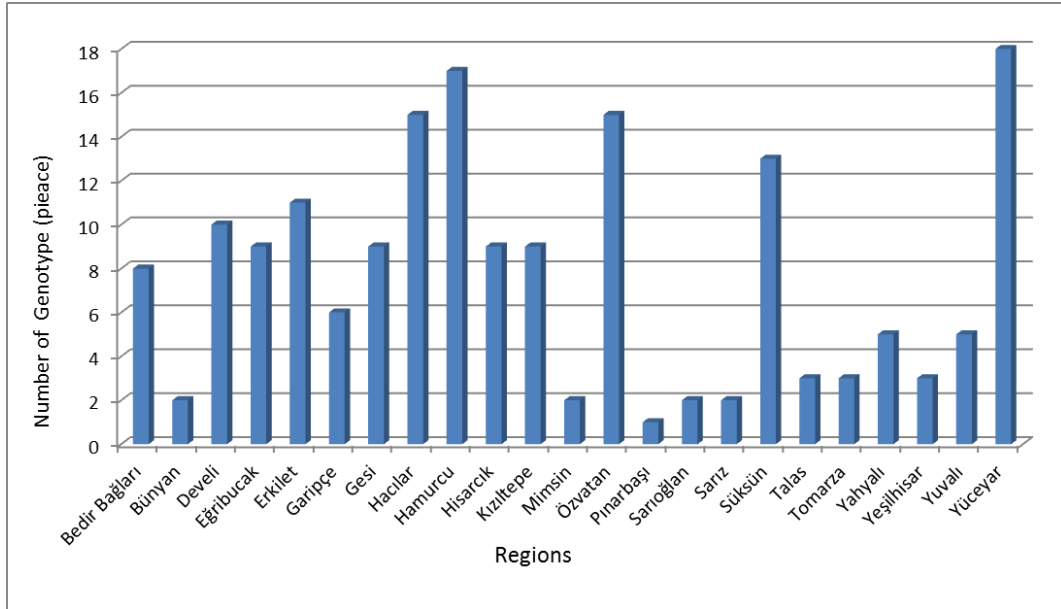


Fig. 2. Distribution of local grape genotypes by regions

Table 1. Local grapes name in Kayseri

Genotype No	Local Grape Name	Genotype No	Local Grape Name
1	Beyaz Buludu	29	Karabekir
2	Beyaz İrek	30	Kara burcu
3	Beyaz Keçimemesi	31	Karalık
4	Beyaz Şıralık	32	Kayseri Karası
5	Boz Geçemceği	33	Koç Taşı
6	Çakıltaş	34	Kokulu Hevenk
7	Çavuş	35	Misket
8	Çekirdeksiz	36	Mor Buludu
9	Dana Boyu	37	Orun
10	Kara Hevek	38	Parmak İnce Kabuk

11	Deve Dişi	39	Parmak Siyah Buludu
12	Dökülgen	40	Parmak Üzüm
13	Dimrit	41	Parmak Yuvarlak Tane
14	Uzun Salkım	42	Pembe Çekirdeksiz
15	Eldaş	43	Pembe Dimrit
16	Gelin Yanağı	44	Sık Dimrit
17	Gemre	45	Siyah Çekirdeksiz
18	Göğcek	46	Siyah İrek
19	Gül Parmak	47	Siyah İri Tane
20	Gül Üzümü	48	Siyah Şıralık
21	Hevenklik Beyaz	49	Sungurlu Karandere
22	Irazakı	50	Şahabı
23	İri Beyaz Üzüm	51	Şireder
24	İstanbul Üzümü	52	Tavşan Kanı
25	Kara Buludu	53	Tilki Kuyruğu
26	Kara Burcu	54	Uzun Taneli Buludu
27	Kara Evrek	55	Yerli Dimrit
28	Kara Keçimemesi		



Fig. 3. Some local grape genotypes from Kayseri in the Collection Vineyard

In different regions of Turkey, to determine the grapevine genetic potential in many carried out studies, it is concluded that local grape varieties are valuable, important and conservation genetic resources. These studies were carried out in productive vineyards similar to our study, and grape varieties used for many years and grown locally were collected. Local grape varieties have been determined in the productive vineyards (Bineteti, Emiri, Hergifi, Heseni, Keşirte, Meyme, Zeynep, Sinciri, Şevkeye and Veledezine) in the central districts and villages of Siirt province [10]. Also, 9 local grape varieties (Pırtık Üzümü, At Memesi, Kışmış Üzümü, Beyaz Üzüm, Kara Üzüm, Kabarcık, Beyaz At Memesi, Hatun Parmağı and Al Üzüm) in Olur district of Erzurum province [11]; 40 local varieties in Konya and Karaman provinces [5]; Kara [12] reported that 44 local grape genotypes in Tokat province; 29 local genotypes have been determined in İncesu district of Kayseri province by Kara [8]. 10 local grape varieties named Devegözü, Sık sarı, Siyah üzüm, Beyaz üzüm, Ak üzüm, Gelin üzümü, Kara erik, Sivri kara, Yediveren and Ballı have been identified in the Yuntdağı region of Manisa province [13]. In the research carried out in the productive vineyards located in Gemerek district of Sivas province, 9 grape varieties named Karabekir, Göğcek, Dişieldaş, Kabaeldaş, Kehribar, Patlaklara, Gülüzümü, Memeüzümü and Dikkarabekir were identified [4]. 6 local grape varieties named Veyisoğlu, Kanlı Üzümü, Acıkara Üzüm, Pembe Çavuş, Kara Dirmit and Sarı Emin, were identified in Afyonkarahisar province [14]. In the Nevşehir region, 15 local genotypes named Emir, Dimrit, Çavuş ve Parmak üzüm, İsmailoğlu, Devediş, Kayseri karası, Topak çavuş, Hacıoğlu siyahı, Ağın, Beyler, Çubuk siyahı, Çubuk beyazı, Horoz karası and Kalecik beyazı were identified [15].

As a result of our study, it has been observed that similar genotypes as named Dimrit, Parmak üzümü, Devediş, Göğcek and Karabekir were determined in studies conducted in Nevşehir [15], Sivas [4] and İncesu [8].

CONCLUSION

At the end of this study, the collection vineyard was established within the Seyrani Faculty of Agriculture and the loss of local grapevine genetic resources was prevented.

In addition, with this study, it was provided to introduce and spread the quality local varieties that were abandoned in commercial concerns. This research will be a pioneer and guide for scientific viticulture studies to be conducted in Kayseri in the coming years. Morphological and molecular characteristics of local grape genotypes will be determined in later studies and similarities and differences will be revealed.

Acknowledgment. This study was supported by Erciyes University Scientific Research Projects (BAP) Office Directorate (Project No: FDK-2018-8048).

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