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DETERMINATION OF PHENOLOGICAL CHARACTERISTICS OF SOME LOCAL GRAPEVINE GENOTYPES COLLECTED FROM GESI REGION IN KAYSERI

Gulsen Yilmaz [1], Aydin Uzun [1,*], Hasan Pinar [1]

[1] Erciyes University Department of Horticulture, Kayseri, Turkey

Abstract
Kayseri region of Turkey, is an old and well-established wine-growing regions. Kayseri is famous for its vineyards and grapes such as Gesi Vineyards and Erkilet Vineyards. Kayseri has a rich genetic diversity from the past. This study was carried out in the vineyard areas determined and representing in Gesi region of Kayseri province in 2018. A total of 9 different local grape genotypes known, loved and widely used by the local people for many years in cultivation were chosen. During the vegetation period, bud burst and full bloom observations were made and recorded as day / month. At the end of the study, differences were found among local genotypes in terms of phenological stages. The earliest bud burst was recorded on 27 March with GES 01 named Sık Dimrit and the latest bud burst was observed on April 2. The full bloom time has ranged from June 2 to June 8 among local grapevine genotypes. Ripening time of genotypes ranged from 15-20 September.

Keywords: bud burst, bloom, grapevine, Kayseri, local genotypes

1. INTRODUCTION

The Caucasian area including Turkey has a long history of viticulture and possesses a great diversity of grape cultivars and genotypes **(**Çelik, 1998). Turkey is home to many hundreds of grape cultivars many of which have invaluable genetic potential, supposedly emerged as a result of natural hybridization, mutation and selections over the years. In terms of many varieties and types of richness in viticulture, can be used in breeding programs offer very important gene resources. Especially, local varieties have a big importance in the development of new varieties (Sabır, 2008). Traditional and local varieties are very valuable resources; highly adapt to the ecological conditions of the region and remarkable resistance against pests and diseases (Yılmaz et al., 2012). Characterization and evaluation of such invaluable genetic resources is the necessity to avoid genetic erosion. Ampelography is a scientific methodology accepted for the characterization of grapevine genotypes, based on the description of different morphological, phenological and pomological characters. Several studies on the ampelographic identification of grapes have been conducted in Turkey (Kara, 1990; Türkkan, 1996; Aslantaş, 2010; Çelik, 2013; Eren and Yagcı, 2015; Karataş et al., 2015; Sabır et al., 2015).

Kayseri region of Turkey has been a vineyard area since ancient times and has a significant diversity. This study was carried out in the vineyard areas determined and representing in Gesi region of Kayseri province.

*Corresponding author, E-mail address: uzun38s@yahoo.com

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2. MATERIALS AND METHODS

This study was carried out in the vineyard areas determined and representing in Gesi region of Kayseri province in 2018 (Figure 1). In the scope of study, vineyards were examined in 2 different locations representing Gesi region.

Figure 1. Kayseri province in Turkey

A total of 9 different local grape genotypes which is known, and widely used by the local people for many years used in this study (Figure 2). These genotypes were considered to be healthy and yielding.

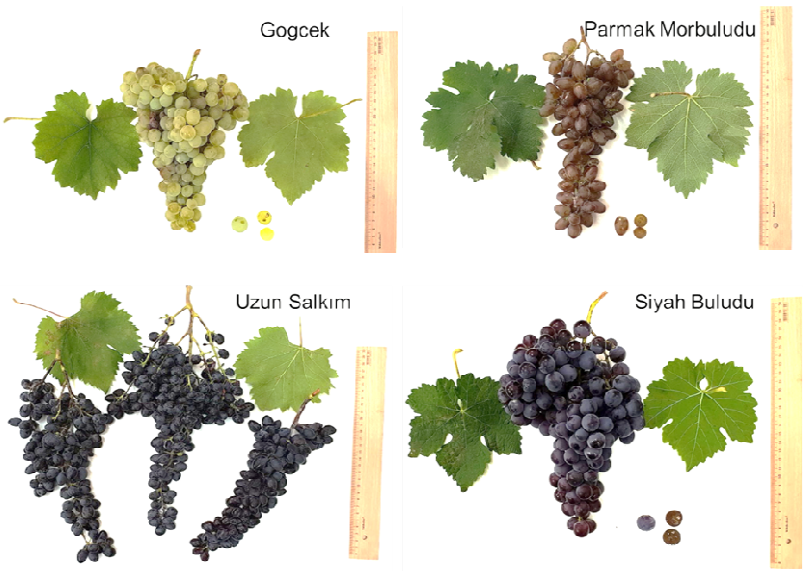

Figure 2. Some local genotypes in Gesi region (Photo: G. Yilmaz)

During the vegetation period, bud burst, full bloom and maturity time observations were recorded as day / month according the Descriptors for Grapevine (Vitis spp.) (Anonymous, 1997). The date of opening of half of the buds on a vine was determined to be 50% bud burst time and bud burst time. The period opened by half of the bunches of flowers on the vine was determined as the full bloom time. Maturity is determined as the date of the accumulation of color and sugar of each variety and maturity time observations recorded.

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3. RESULTS AND DISCUSSION

According to results, some differences were found among local genotypes in terms of phenological stages. The earliest bud burst was recorded on 27 March with GES 01 named SıkDimrit and GES 04 named DimritUzunsalkım genotypes and the latest bud burst was observed on 2 April in Table 1. SıkDimrit was the earliest genotype in the region.

Table 1. Phenological stages of local genotypes

Genotype No	Local Name	Bud Burst	Full Bloom	Fruit Ripening
GES 01	SıkDimrit	27 March	04 June	15 Sept
GES 02	Şireder	30 March	04 June	19 Sept
GES 03	SiyahBuludu	29 March	08 June	18 Sept
GES 04	DimritUzunsalkım	27 March	08 June	16 Sept
GES 05	GülUzümü	02 Apr	06 June	16 Sept
GES 06	MorBuludu	02 Apr	08 June	19 Sept
GES 07	Göğcek	02 Apr	02 June	19 Sept
GES 08	Çavuş	02 Apr	06 June	18 Sept
GES 09	ParmakMorBuludu	30 March	08 June	20 Sept

The full bloom time has ranged from 2 and 8 June among the genotypes. The earliest flowering was GES 07 named Göğcek genotype. Ripening time of genotypes ranged from 15-20 September. GES 01 named 'SıkDimrit' was the first ripening genotype; GES 09 named 'ParmakMorbuludu' was the last one. In the same ecology, □honological stage dates can differ due to changes in climate data (Cangi and Bekar, 2017). A difference was found between genotypes in terms of the bud burst and full bloom and maturity dates depending on the genetic and also direction and elevation of the vineyards.

Different results were obtained from previous studies carried out in different region with regarding to □honological characteristics. In a study conducted in Adana conditions, the phenology of wine grape varieties were examined, bud bursting was determined between 1-5 May, full bloom between 13-20 June and maturity between 23 August – 18 September (Tangolar et. Al., 2005,). Bud burst in wine grape varieties grown in Diyarbakır were between 10-20 April and full bloom between 1-6 June (Sögüt and Özdemir, 2015). Bud burst of some grape varieties were found as ; 12-24 April (Ozdemir et al., 2006), 4-20 April (Kose, 2014), 15-27 April (Gargin and Goktas, 2015) in similar studies. On the other hand, it was reported in a study carried out in Pisa-Italy, bud burst of different grape cultivars were between 1stand 3rd of April (Andreini et al., 2009). Ripening time of cultivars were; 24 June-07 July (Kamiloglu et al., 2011), 8 August- 9 September (Kose, 2014), 31 August-21 September (Gargin and Goktas, 2015) in previous studies.

Phenological features such as bud burst, flowering and maturity of grapevines are the most important developmental stages. These □honological stages changing with grapevine variety, climate and geographic location (Jones and Davis, 2000). Genetic factors and ecological conditions may be the cause of the different results in the studies performed in different regions.

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4. CONCLUSIONS

Our study revealed that grape genotypes showed variation for phenological stages in similar conditions. This situation shows that the grape population has diversity. This diversity in local genotypes may be useful for further studies to conservation of grape diversity, in situ and ex situ conservation programs should be established.

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*Corresponding author, E-mail address: uzun38s@yahoo.com