

## A New Cherry Laurel Cultivar: 'Odü'

Ali İSLAM  1\*

<sup>1</sup>Ordu University, Faculty of Agriculture, Department of Horticulture, Ordu/TÜRKİYE

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Sorumlu yazar: Ali İSLAM, e-posta: islamali@hotmail.com

### Abstract

**Objective:** 'Odü' is a new cultivar of cherry laurel developed for table consumption. The aim of this study is to describe the new cherry laurel variety and to reveal fruit characteristics.

**Materials and Methods:** Before the study, 32 promising types were determined by the selection study carried out in the Black Sea region between 2007-2010. One of these genotypes was encoded with A19. The type was propagated by cuttings in 2010-2011 and, planted in a trial plot with 6 plants in 2012. Fruit bearing started in 2015 and the results of the research covered the years 2017-2019. Fruit, cluster, seed and leaf characteristics of the 'Odü' cherry laurel variety were observed and examined.

**Results:** The fruit characteristics of the 'Odü' variety, including size, weight, and color, were carefully observed and categorized. The fruit weight was 2.68 g, the fruit size was 15.96 mm, the fruit stem length was 5.54 mm, the seed weight was 0.39 g, the cluster length was 12.17 cm, the cluster weight was 39.54 g, and the number of fruits in the cluster was 16.67. Leaf width and length were determined as 4.51 cm and 15.06 cm, and annual shoot length was 59.85 cm. Cluster length was "medium", number of flowers in clusters was "intensive". Fruit size was classified as "middle", leaf shape was classified as "narrow elliptical".

**Conclusion:** Cherry laurel is used as a fruit and ornamental plant. As a fruit, the 'Odü' cultivar is the first registered fruit variety in Türkiye and in the world. As an evaluation, the 'Odü' cultivar produces medium-sized fruits, with a dense cluster structure and light fruit color, characteristic of small to medium-sized trees. The following points can be suggested. The cherry laurel is a promising fruit species for our country as product diversity and alternative taste characteristics. Cultivar registration

is commercially the first step for establishing an orchard and paving the way for production. This study and registration is important as fruit diversity in the Blacksea region.

**Keywords:** *Prunus laurocerasus*, *Laurocerasus officinalis*, cherry laurel, cultivar, variety

### Yeni Karayemiş Çeşidi: 'Odü'

#### Öz

**Amaç:** 'Odü' sofralık tüketim için geliştirilmiş yeni bir karayemiş çeşididir. Bu çalışmanın amacı tescil edilen bu yeni karayemiş çeşidinin tanımlanması ve meyve özelliklerinin ortaya konulmasıdır.

**Materyal ve Yöntem:** 2007-2010 yılları arasında Karadeniz bölgesinde yapılan seleksiyon çalışması ile 32 ümitvar tip belirlenmiş olup bu genotiplerden biri A19 ile kodlanmıştır. 2010-2011 yıllarında çelikle çoğaltılan bu bireyler 6 bitki olacak şekilde deneme parseline dikilmiştir. 2015 yılında verim alınmaya başlanmış olup araştırma sonuçları 2017-2019 yıllarını kapsamaktadır. 'Odü' karayemiş çeşidinin meyve, salkım, çekirdek özellikleri ile yaprak özellikleri incelenmiş, bitki gelişimi gözlenmiştir.

**Araştırma Bulguları:** 'Odü' çeşidinin meyve ağırlığı 2.68 g, meyve büyüklüğü 15.96 mm, meyve sapı uzunluğu 5.54 mm, çekirdek ağırlığı 0,39 g, salkım uzunluğu 12.17 cm, salkım ağırlığı 39.54 g, salkımda meyve sayısı 16.67 olarak saptanmıştır. Yaprak eni ve boyu 4.51 cm ve 15.06 cm, yıllık sürgün uzunluğu 59.85 cm olarak tespit edilmiştir. Çiçek salkım uzunluğu ve meyve salkım ağırlığı "orta", meyve salkımında çiçek sayısı "fazla", meyve büyüklüğü "orta" olarak sınıflandırılmıştır. Yaprak uzunluğu ve genişliği "uzun-orta" olarak tasnif edilmiştir.

**Sonuç:** Karayemiş meyve ve süs bitkisi olarak kullanılan bir türdür. Meyve olarak 'Odü' çeşidi

ülkümüzde ve dünyada ilk tescil edilen karayemiş çeşididir. 'Odu' çeşidi genel olarak değerlendirildiğinde orta büyüklükte meyve, sık meyveli salkım yapısı, açık meyve rengi ve küçük-orta büyüklükte ağaçlar oluşturmaktadır. Bu çalışma ile aşağıdaki hususlar önerilebilir. Karayemiş çeşidi, ürün çeşitliliği ve alternatif tat özelliği bakımından ülkemiz için önemli ve geleceği olan bir meyve türüdür. Ticari olarak çeşit tescili, bahçe kurulması ve üretimin önünün açılması için ilk basamaktır. Ürün çeşitliliği açısından bu çalışma ve tescil önem arz etmektedir.

**Keywords:** *Prunus laurocerasus*, *Laurocerasus officinalis*, taflan, tescilli çeşit

### Introduction

The fruit genetic diversity is very high due to the very different ecological conditions and geographical structure in our country. For this reason, Türkiye is the homeland of many fruit species and an important center of fruit culture in the world. Ecological conditions and geographical structure also create important genetic diversity in the Black Sea Region. There are different fruit and plant communities in the region. Cherry laurel is a species that has both fruit and ornamental plant characteristics. It also has medicinal and aromatic value (İslam and Dede, 2024). Cherry laurel is an evergreen, shrub or tree type. It belongs to the family Rosaceae of the genus *Laurocerasus* Duhamel of the subfamily Prunoideae. The Latin name of this species is *Laurocerasus officinalis* Reomer or *Prunus laurocerasus* (L.) Mill. (Ozbek, 1978). The Turkish name of this species is "karayemiş", the synonym is known as "taflan" (İslam, 2005).

Cherry laurel plants are found in different parts of the world, especially in the southeast of Europe, the Balkans and Northern Iran. The natural distribution area of the plant in our country is the eastern regions of the Black Sea, the Caucasus, the Taurus Mountains, the Northern and Eastern Marmara (Zeybek 1960; Anşin and Özkan 1993). Edible types for table use are located in the Black Sea region. Cherry laurel trees grow naturally in the Black Sea region.

In the world, this species is mostly used as an ornamental plant. It is a tree with showy flowers. It is suitable for pruning and can be given different shapes. The habitus of cherry laurels differs from each other as leaf size and shape, flower boards, fruit color and sizes. On the other hand, it has been used in

pharmacy (Güven and Geçgil, 1961; Baytop, 1999; Koç, 2003; Dursun and İslam, 2020). Again, it has been shown in many studies that cherry laurels have medicinal value. The cultivated types differ to fruit shape, color, taste, size, and ripening time (İslam and Bostan, 1996; İslam, 2002; Turna and Güney, 2006). Cherry laurel fruits have a different taste and flavor than other of fruits. Peoples used as fresh consumption, drying, jam, marmalade, preserves and pickles. It is used in the food industry as a flavoring additive (Sülüşoğlu and Çavuşoğlu, 2009). Fruit powders are considered as an alternative to fresh fruit because they are always available (Ergüney et al., 2015). It is used as a diet; it gives a feeling of satiety. It is added to cakes and compotes to add taste and aroma. The molasse is reported to be rich in phenolic compounds (Liyana-Pathirana et al., 2006).

Cherry laurel juice obtained from the fresh and young leaves of cherry laurels is used as a sedative, cough suppressant, nausea reliever and pain reliever (Erdemoglu et al., 2001; Tanker et al., 2007). It is rich in phenolic substances, antioxidants, anticarcinogens (İslam et al, 2020). It is stated that the antioxidants found in high levels in cherry laurels are effective against Alzheimer's, diabetes, tissue and skin diseases (Alashalvar et al., 2005; Eser et al., 2014). It is included in the composition of eye lotions (Çankaya et al., 2018). It is stated that the amygdalin glycoside found in cherry laurels can be used as an alternative source for drugs used for the treatment of anemia, asthma, high blood pressure, vascular system, diabetes, migraine and tumors (Dursun and İslam, 2020). Dimethyl sulfoxide extract of cherry laurels has a selective cytotoxic effect on some cancer cells, especially colon cancer (Demir et al., 2017).

İslam (2005) evaluated the results obtained in the studies conducted in the Black Sea Region and emphasized the importance of cherry laurels for the region. Cherry laurel grows naturally in the Black Sea region, it is a fruit compatible with the climate of the region, and it is known that its commercial cultivation will be a good source of income.

Some of the genotypes that are notable in the region (Su, Kiraz, Vavul, Selvi, etc.) have been highlighted and individuals that are valuable for table consumption have been selected through selection (İslam and Odabaş, 1996; Bostan, 2001; İslam, 2002; Bostan and İslam, 2003; Akbulut et al. 2007; Macit, 2008; İslam and Vardal, 2009; İslam et al., 2010; İslam and Deligöz, 2012; İslam et al. 2020).

Today, it is seen that many countries pay more attention to the research of new types of fruits. The characteristics of the species, production techniques, research on usage areas, culturing studies and dissemination of production are becoming increasingly important. Human beings are now trying to eat more consciously by looking for diversity in their taste and examining the medicinal values of foods.

In this study, it is aimed to reveal the fruit characteristics of the 'Odü' the cherry laurel variety, which is the natural plant of the Black Sea Region registered by TTSM (Tohumluk tescil ve sertifikasyon merkezi (Seed registration and certification center), The unit under the Ministry of Agriculture).

## Materials and Methods

### Material

This study was carried out in 2017 - 2019 in the research parcel located in the Karapınar neighborhood of Ordu province. Individuals with code number A19 were planted in 2012.

### Method

Islam et al (2010), were used in the application of the method. Fruit samples were taken from different parts of the tree in 20 clusters to represent the whole.

A balance sensitive to 0.01 g was used in 20 fruits for weight measurements. A digital caliper sensitive to 0.01 mm was used to measure cluster, fruit and seed sizes, fruit stem length and thickness. The maximum and minimum values and standard deviation were written for the data. Sensory, observation-counting was performed to determine fruit taste, astringency, uniformity, separation of the kernel from the fruit flesh. The classification for registration is taken from the TTSM data bank (Anonymous, 2019).

## Results

The origin of the 'Odü' cherry laurel variety is the A19 coded selection material, which is promising in the evaluation made as a result of the TÜBİTAK project numbered 1070252 "Selection and propagation of cherry laurel grown in the Black Sea region".

Important pomological characteristics of the 'Odü' cherry laurel variety are presented in Table 1. The fruit weight of the variety was 2.68 g, the fruit size was 15.96 mm, the fruit stem length was 5.54 mm, the seed weight was 0.39 g, the cluster length was 12.17 cm, the cluster weight was 39.54 g, and the number of fruits in the cluster was 16.67. Leaf width and length were 4.51 cm and 15.06 cm, and annual shoot length was 59.85 cm.

Table 1. Important pomological characteristics of the 'Odü' cherry laurel variety

	Minimum value	Maximum value	Average value	Standard deviation
Fruit weight (g)	2.03	3.90	2.68	±0.431
Fruit width (mm)	14.30	17.21	15.91	±0.778
Fruit length (mm)	14.99	17.70	16.02	±0.706
Fruit size (mm)	14.65	17.46	15.96	±0.751
Fruit stem length (mm)	3.79	7.05	5.54	±0.990
Fruit stem thickness (mm)	1.22	2.18	1.76	±0.201
Seed weight (g)	0.30	0.55	0.39	±0.055
Seed width (mm)	7.45	8.90	8.08	±0.398
Seed length (mm)	1.86	12.08	10.85	±2.167
Pulp/kernel ratio	4.77	9.07	6.88	±1.352
Cluster weight (g)	23.83	60.16	39.54	±16.102
Cluster length (cm)	11.00	13.00	12.17	±0.816
Number of fruits in the cluster (pcs)	10.00	26.00	16.67	±6.623
Leaf width (cm)	4.00	5.04	4.51	±0.477
Leaf length (cm)	14.10	16.20	15.06	±0.805
Petiole width (mm)	2.40	3.45	2.87	±0.330
Petiole length (mm)	10.70	21.50	13.65	±3.088
Annual shoot length (cm)	34.00	81.00	59.85	±13.570

For the purpose of registration, some features are classified. Plant growth form is classified as "splayed", inflorescence length and fruit cluster weight as "medium", and fruit size as "small". Leaf length and width are classified as "medium", leaf blade shape is classified as "narrowly elliptical", and leaf edge gearing is classified as "partially gearing" (Table 2,3).

It was given some pictures showing the 'Odü' variety in Figure 1 and 2. Figure 1 was presented according to the "Variety Specification Certificate" prepared by TTSM and it was shown tree, fruit, cluster, raceme, seed and leaf.

Table 2. Basic features of the 'Odü' variety\*

Botanical name	<i>Prunus laurocerasus</i> L.
Species name	Cherry laurel
Variety name	Odü
Test station location	Ordu
Duration of the test	2017-2018
Date of registration	2019
Variance report	Markedly different from other varieties
Uniformity	Homogeneous enough
The main characteristics of the variety	Fixed

\*: It was presented according to the "Variety Specification Certificate" prepared by TTSM.

Table 3. Technical characteristics of the 'Odü' variety\*

Breeding method	Selection
Plant growth force	Middle
Plant growth form	Splayed
Plant branching	Middle
Shoot color	Light green
Branch color	Brownish-gray
Branch lenticular density	None or very little
Angle of the side shoots with the main branches	Wide
Sheet length-width	Medium-Intermediate
Petiole length	Middle
Leaf shape	Narrow elliptical
Leaf tip	Sharp
Leaf base	Narrow angle
Leaf edge gearing	Partially gearing
Inflorescence time	Middle
The number of flowers in the inflorescences	Intensive
The location of the stigma relative to the stamens in the flower	At the same level
Fruit cluster length	Middle
Fruit cluster weight	Middle
Fruit density in cluster	Sparse
Fruit size	Small
Fruit stem length	Middle
Fruit shape	Round
Fruit color	Purple
Pulp color	Yellow
Fruit firmness	Middle
Breaking off the fruit from the stem	Easy
Fruit taste	Middle
Seed size	Big
Seed shape	Wide elliptical
Separation of seed from fruit flesh	Middle
The beginning of flowering	Middle
Time of ripeness for consumption	Middle

\*: It was presented according to the "Variety Specification Certificate" prepared by TTSM.

### Discussion

Fruit weight is one of the most important quality criteria in cherry laurels for table consumption. The fruit weight of the 'Odü' cherry laurel variety is 2.68 g. Bostan and Islam (2003) reported that the fruit weight of the cherry laurel types grown in the central district of Trabzon province varied between 2.06-6.79 g. It is reported that the fruit weights of promising types in Ordu province vary between 1.47-6.24 g (Islam and Deligöz, 2012). Akbulut et al. (2007) reported that the fruit weight was 1.40-5.39 g, and Macit (2008) stated that in 2005-2006, the fruit

weight of the promising 4 cherry laurel type was between 3.48-4.81 g in the Black Sea Agricultural Research Institute Çınarlık trial area. 'Odü' cultivar is small fruit compared to other cherry laurel types.

Cherry laurel fruits are located on clusters arranged on a single axis. The weight and length of the cluster and the number of fruits in the cluster are important. Similar studies were conducted in fruit or cluster in cherry laurel. The cluster weights of the selected types are 17.28-70.69 g; cluster lengths were 99.10-154.25 mm, in the Ordu (Islam and Deligöz, 2012).



Figure 1. Some pictures showing the characteristics of the 'Odü' variety from TTSM



Figure 2. Fruit-bearing 'Odü ' cultivar (Foto: A. İSLAM, 2022)

Karadeniz and Kalkışım (1996) stated that cluster weights ranged 62.7 from 123.9 g in cherry laurel types grown in Akçaabat region. Macit (2008) found that the cluster weights of 4 cherry laurel types were between 13.31-40.20 g; the length of the cluster was between 7.67-12.50 cm in the trial orchard of the Black Sea Agricultural Research Institute. Akbulut et al. (2007) found that the cluster weight was 5.84-57.82 g, Bostan (2001) found that the cluster weight of the Su cherry laurel local variety grown in Trabzon was 46.75 g. And Islam (2002), reported that the cluster weight of Kiraz cherry laurel local variety was 67.9 g. The results of the resources is similar. The fruit pulp/seed ratio is an important feature with regard to fruit quality. It is desirable that this rate is high. The pulp / seed ratio was 6.88 in 'Odü' cultivar. Islam and Odabaş (1996) determined the fruit flesh/seed ratios were between 4.39-7.35 in the cherry laurel selection study carried out in Vakfıkebir. Macit (2008) determined the fruit flesh/seed ratios between 5.23-7.78 in his study on selected 4 cherry laurel types. Karadeniz and Kalkışım (1996) reported that the fruit flesh/seed ratios in 20 cherry laurel types were between 4.75-16.52. The fruit pulp/seed ratio values in these studies are similar.

### Conclusion

Cherry laurel is not well known as a fruit, but this species is common grown in the Black Sea Region and consumed for different purposes such as table fruit, jam, molasses, pickles, etc. Cherry laurels are fondly consumed by the local. The commercial cherry laurel production has not yet developed, and the fruits are frequently encountered in neighborhood markets.

'Odü' cherry laurel variety is evaluated. It can be said that the cultivar has medium-sized fruits, dense fruit-bearing cluster structure, light fruit color and small-medium sized trees.

It is recommended to establish regular cherry laurel orchards and use good cultural techniques. So, the yield will be increased and fruit quality characteristics will improve. As a result, the market value will increase, and it will be a separate economic income for the growers.

It is important to continue the studies on cherry laurels and to determine the real value of this species by revealing its characteristics, and to improve the existing cultivation areas. It is also expected that the number of varieties will increase with regard to different characteristics.

Cherry laurel is a fruit and landscape species. It is natural in Turkey's plant population. It is a promising fruit species in terms of product diversity and alternative taste characteristics. Because cherry laurel attracts attention with its different fruit taste. Some genotypes have different levels of bitter taste; some have a different flavor and taste.

A commercially registered variety is the first step towards establishing an orchard and leading to production. Detailed research can be done on this variety. Different genotypes should be registered and detail resources such as flowering biology, pollination, fruit set, fruit characteristics and quality, disease and pest control, post-harvest physiology, storage, health effects, processing technology, usage area, etc should be done on the registered variety.

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### Conflict of Interest

The applicant institution for registration is Ordu University, Faculty of Agriculture. All research and application on the variety registration was done by Prof. Dr. Ali İSLAM and all rights of the variety belong to him.

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