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Characteristics of Some Local Sweet Cherry Cultivars from Homeland

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Abstract: This study was carried out during 2001 in Amasya in Turkey. The objective of the study was to characterize 5 sweet cherry cultivars grown in Amasya. In the cultivars; flowering occurred between the third week and the last of March and ripening was between the third week of May and the second week of June. The cultivars have a merit as gene resource in spite of small fruit of them.

Key words: Sweet cherry, cultivars, phenological, pomological, characteristics, Turkey

INTRODUCTION

Turkey is origin of the sweet cherry and the first in cherry production in the world^[1,2,3]. There are a lot of local cherry cultivars and genotypes in Turkey. Amasya province, inner of Mid Black Sea Region, between 39 and 40° N latitude, in terrestrial climate and 412 m altitude, is one of the major cherry production centers. It has wide cherry gene resources^[4]. Unfortunately, the resources have been replaced by standard cultivars due to their small fruits and thus most are becoming extinct. Indeed, they may be gene resource for the breeding studies such as resistance, developing new cultivar appropriate for table and industry, improving fruit quality and extending cherry season. Therefore, the study aimed to determine characteristics of some local sweet cherry cultivars grown in the origin of today's sweet cherries.

MATERIALS AND METHODS

This study was carried out in 2001 in Amasya in Turkey with 5 local cherry cultivars. Three trees, 7x7m distance, on mahaleb and 18-20 ages, were selected for each cultivar. The tree shape and vigour, fruit shape, fruit skin, flesh and juice color as Schmidt *et al.*^[5], fruit juiciness and pit shape as Anonymous^[6] and blooming and ripening as Christensen^[7] were

determined. The fruit characteristics were determined for 50 fruit samples from those picked at random from selected trees. The fruit weight, fruit dimensions, fruit stalk length and thickness, TSS (total soluble solids), acidity (as equivalent of malic acid), pit weight and fruit firmness using by a penetrometer with a 4.5 mm diameter spherical tip were determined.

RESULTS AND DISCUSSION

The tree shapes as spreading or upright and tree vigour as vigorous or medium were characterized. The earliest flowering was Cini kirazi. The earliest ripening were Cini kirazi, Erkara and Erkiraz while the latest ripening was Sapıuzunkarakiraz. Erkara, Erkiraz, Cini kirazi and Sapıksakarakiraz ripened 20, 20, 20 and 13 days, respectively before cv. 'Bing' while 'Sapıuzunkarakiraz' ripened 6 days after Bing. Local sweet cherries such as Cini kirazi, Erkara and Erkiraz ripened earlier than Bing (Table 1). Therefore, they can be sold for high prices domestic market. Lang *et al.*^[8] reported that Chelan (early new cv.) ripened 10-12 days before 'Bing' in USA. In Spain, Southern Italy and Greece, the main sweet cherry cultivars ripen between early May and early June while in Scandinavia sweet cherry season extends from end of June until mid August^[9]. The fruit weight varied from

Table 1: Tree shape, vigor and the flowering and ripening times, fruit shape, skin color, flesh color and fruit juice color of sweet cherry cultivars evaluated

Cultivars	Shape of tree	Tree vigor	First bloom	Full bloom	Ripening time - as Bing + or -	Fruit shape	Fruit skin color	Fruit flesh color	Fruit juice color
Erkara	upright	Medium	23 March	28 March	21 May -20	Cordate	Dark red	Pink	Red
Erkiraz	upright	Medium	23 March	28 March	21 May -20	Flat round	Dark red	Dark red	Purple
Cini kirazi	spreading	Medium	18 March	23 March	21 June -20	Flat round	Red on yellow ground	Cream white	Cream yellow
Sapıksakara kiraz	upright	Vigorous	-	-	28 May -13	Round Cordate	Dark red	Pink	Red
Sapıuzunkara kiraz	upright	Vigorous	-	-	16 June +6	Flat round	Dark red	Dark red	Red
Bing	Upright, spreading	Medium	22 March	26 March	10 June 0	Kidney	Brown red	Red	Purple

Table 2: Fruit weight, dimensions, firmness, soluble solids (TSS), acidity, fruit juiciness, fruit stalk length and thickness, stone shape and weight of sweet cherry cultivars evaluated

Cultivars	Fruit weight	Breadth	Thickness	Length	Firmness (kg)	TSS (%)	Acidity (%)	Fruit juiciness ^z	Fruit length (cm)	Thickness (mm)	Stone shape	Stone weight (g)
Erkara	3.9	18.8±0.3	16.4±0.3	17.4±0.3	0.5±0.1	12.2	0.5	3	3.8±0.2	0.9±0.0	Round	0.3
Erkiraz	3.4	17.6±0.3	14.4±0.3	16.0±0.2	0.4±0.1	11.2	0.6	3	3.9±0.2	1.0±0.0	Round	0.3
Cini kirazi	2.9	17.4±0.1	15.0±0.3	15.4±0.2	0.5±0.0	16.8	0.6	2	3.7±0.1	0.9±0.0	Round	0.2
Sapıkisakara kiraz	5.0	20.5±0.2	17.8±0.2	18.7±0.2	0.6±0.1	13.6	0.8	3	4.2±0.2	1.0±0.0	Round	0.4
Sapuzunkara kiraz	5.3	22.2±0.2	18.5±0.1	19.1±0.2	0.7±0.0	17.0	0.6	2	5.0±0.2	1.0±0.1	Round	0.4
Bing	7.6	25.1±0.3	20.3±0.2	21.8±0.3	0.9±0.0	17.2	0.9	2	4.0±0.1	1.1±0.0	Round	0.4

^z: Fruit juiciness: 1=weak, 2=medium, 3=strong

Table 3: The flower and leaf characteristics of sweet cherry cultivars evaluated

Cultivars	Flower color	Calix diameter (mm)	Corolla diameter (cm)	Number of pistil	Number of anther	Leaf blade width (cm)	Leaf blade length (cm)	Leaf stalk length (cm)	Glands shape	Predominant number of glands
Erkara	White	6.3±0.1	3.8±0.1	1	30.8±0.6	6.0±0.2	11.6±0.5	3.6±0.2	Kidney	2, almost 1-3
Erkiraz	White	5.6±0.1	3.4±0.7	1	29.4±0.8	6.7±0.4	13.1±0.8	4.0±0.1	Kidney	2, almost 1
Cini kirazi	Light pink	5.2±0.1	3.3±0.1	1	29.8±0.8	6.1±0.2	11.5±0.3	3.3±0.1	Kidney	2
Sapıkisakara kiraz	-	-	-	-	-	6.9±0.2	13.6±0.5	4.6±0.2	Round	1-2
Sapuzunkara kiraz	-	-	-	-	-	7.9±0.1	20.8±0.4	4.0±0.2	Kidney	1 - 2
Bing	Pinkish-white	3.5±0.1	3.2±0.0	1	30.2±1.0	5.8±0.3	15.6±0.5	3.6±0.2	Round, Kidney	2, almost 1*usually

2.9 to 5.3 g (Table 2). The cultivars are preferred to use in chocolate and confectionary industry due to the small fruits of them. The others characteristics of the cultivars tried were represented Table 1, 2 and 3.

In here, characteristics of some local sweet cherries grown in the origin of the sweet cherry were presented. These may not be favorable to standard cultivars in terms of productivity and fruit quality but should be rescued from extinction. In fact, the gene resources may be useful in sweet cherry breeding and be used in sweet cherry industry.

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