



TURKISH BERRY FRUIT SECTOR

Summary

This report aims to provide basic information about the blue berry sector in Turkey, its strengths, weaknesses, risks associated and opportunities.

This study is done within the preparation efforts of the Berry Fruit Trade Mission to Turkey which is planned to be organized in 2022 by the Agricultural Department of the Netherlands Embassy in Ankara.

Please contact us for much more information: ank-lnv@minbuza.nl

Event June 9:

Het Landbouwteam van de Nederlandse ambassade Ankara, Turkije zal op 9 juni 2022 in de middag een digitaal webinar en online Q&A sessie organiseren over de zacht fruit sector in Turkije, in het bijzonder de productie van blauwe bessen. Wat zijn de laatste ontwikkelingen? Waar is behoefte aan en waar liggen kansen? De landbouwraad en zijn team zullen gedurende 60-90 minuten hun bevindingen presenteren, vragen beantwoorden en graag het gesprek aan gaan. Waarom is Turkije een bezoek waard?

Meld je aan en stuur een mail aan ank-lnv@minbuza.nl voor meer informatie en praktische info voor het webinar.

Introduction

Turkey is one of the most significant countries in the world both for fruit genetic resources and amount of fruit production. Around 100 fruit species, including almost all the deciduous fruit species, most of the subtropical and some tropical fruit are grown in Turkey.

Among fruits, berry fruits including grapes have the share of 25% of total fruit production of the country. The most important berry fruits in terms of production after grape are strawberry (average 200.000 tons production annually) and followed by mulberry (70.000 tons), raspberry and blackberry (30.000 tons) and blueberry (5000 tons).

Compared to other major fruit species, the soft fruit culture in Turkey is relatively new. Although the production of berry type soft fruits such as raspberry, blueberry, blackberry, currant, rose hip showed an rapid increase during the last couple of years, it can be considered as still at the starting phase. Turkey has suitable ecological conditions and rich genetic resources for Rubus and Vaccinium and therefore has great potential for the expansion of these species.

Mulberries are cultivated throughout Turkey. There is no registered mulberry cultivar in Turkey but each region has its own local genotypes which propagated by budding or grafting over many years. Mulberry production is common in Northeast, Southeast and Central Anatolia between 0 to 1500 m above sea level

Normally speaking, only the North Eastern part of the Black Sea region has suitable soil requirements for blueberry production in Turkey. Most of the fruit production areas located in the Mediterranean and Aegean Region of Turkey have not suitable soil pH and require low-chill cultivars. However, growing the blueberries in pots by using special substrates make it possible to produce berry fruits in many different regions. Especially, blueberry production showed an rapid increase by using this method in the Mediterranean and the Aegean regions of Turkey (Antalya, Kutahya and Afyon).

Many blackberry species are native to Turkey and it can be grown in almost all regions of the country in the presence of irrigation. Although the plenty of forms of species, there is only few commercial cultivation practices of blackberry. The most important blackberry cultivation is done in the Marmara region and during the last couple of years some investments are also done in the Aegean and Mediterranean regions. Besides, some selection and improvement studies have been also carried out and some standard cultivars have been introduced from USA and European countries.

The berry fruits are generally used in industry for ice cream, juice, jam, marmalade, cake pastry etc. During the last couple of years fresh consumption of these fruits became also very popular. These fruits can be found in supermarket chains and mostly consumed by the high income group as the prices are high compared to other traditional fruits. Due to content of flavanoids and phenolic compounds in the berries are anti-carcinogens; there are also used in medicine industry.



Vaccinium myrtillus L.



Vaccinium arctostaphylos L.



Vaccinium vitis-idaea L.



Vaccinium uliginosum L.

Production statistics of berry type fruits

	Mulberry		Strawberries		Raspberry ⁽¹⁾		Blackberry ⁽²⁾		Blueberry ⁽³⁾		
	Number of trees (Thousand)		Production (Tonnes)	Area (Decare)	Production (Tonnes)	Area (Decare)	Production (Tonnes)	Area (Decare)	Production (Tonnes)	Area (Decare)	Production (Tonnes)
	Bearing	Non bearing									
1988	3 052	751	90 000	46 600	42 000	-	-	-	-	-	-
1989	2 960	704	85 000	52 000	50 000	-	-	-	-	-	-
1990	2 870	684	80 000	53 800	51 000	-	-	-	-	-	-
1991	2 845	656	82 000	55 660	51 000	-	-	-	-	-	-
1992	2 780	630	80 000	59 350	50 000	-	-	-	-	-	-
1993	2 770	610	76 000	62 700	60 000	-	-	-	-	-	-
1994	2 740	620	78 000	69 900	65 000	-	-	-	-	-	-
1995	2 713	564	75 000	71 500	76 000	3 500	1 319	-	-	-	-
1996	2 650	553	74 000	85 700	107 000	3 610	1 969	-	-	-	-
1997	2 590	525	73 000	90 500	110 000	3 560	1 975	-	-	-	-
1998	2 475	510	65 000	92 000	120 000	3 350	1 700	-	-	-	-
1999	2 425	500	65 000	94 000	129 000	3 150	1 780	-	-	-	-
2000	2 440	485	60 000	94 650	130 000	3 150	1 800	-	-	-	-
2001	2 210	415	55 000	97 000	117 000	3 250	1 840	-	-	-	-
2002	2 130	380	55 000	100 000	145 000	3 250	1 850	-	-	-	-
2003	2 180	375	55 000	104 000	150 000	3 350	1 950	-	-	-	-
2004	2 130	365	50 000	97 500	155 000	3 500	2 200	-	-	-	-
2005	2 120	366	55 000	100 000	200 000	3 410	2 200	-	-	-	-
2006	2 029	353	51 558	99 851	211 127	3 387	1 997	-	-	-	-
2007	2 095	560	61 665	109 545	250 916	3 388	2 103	-	-	-	-
2008	2 301	539	65 140	112 785	261 078	3 397	2 050	-	-	-	-
2009	2 393	537	67 986	121 500	291 996	3 419	1 976	-	-	-	-
2010	2 479	507	75 096	116 792	299 940	2 198	1 980	-	-	-	-
2011	2 453	359	76 643	119 670	302 416	2 211	2 059	-	-	-	-
2012	2 446	379	74 170	127 928	351 834	4 675	4 080	2 426	2 363	-	-
2013	2 423	380	74 600	135 494	372 498	4 674	3 942	2 470	2 403	485	170
2014	2 384	380	62 879	134 234	376 070	4 883	4 587	2 550	2 402	525	180
2015	2 416	328	69 334	141 893	375 800	4 885	4 320	2 464	2 425	533	180
2016	2 402	333	71 724	154 308	415 150	5 188	4 312	3 138	2 468	588	185
2017	2 366	347	74 383	153 918	400 167	5 916	4 989	3 079	2 739	582	225
2018	2 324	353	66 647	161 021	440 968	6 769	5 875	2 807	2 540	990	375
2019	2 021	375	69 317	160 899	486 705	6 875	5 975	2 956	2 708	1055	443
2020	2 045	394	70 620	179 777	546 525	6 943	5 445	2 999	2 511	2 128	1 287
2021	2 032	392	69 475	186 761	669 195	7 095	5 093	3 095	2 714	4 197	2 496

Kaynak: Tarım ve Orman Bakanlığı

Source: Ministry of Agriculture and Forestry

- Bilgi yoktur.

- Denotes magnitude null.

(1) Veriler 1995 yılından itibaren derlenmeye başlanmıştır.

(1) Data have been compiled since 1995.

(2) Veriler 2012 yılından itibaren derlenmeye başlanmıştır.

(2) Data have been compiled since 2012.

(3) Veriler 2013 yılından itibaren derlenmeye başlanmıştır.

(3) Data have been compiled since 2013.

Strawberry

Although strawberry production in Turkey date back to Ottoman times, the production area was limited only in Istanbul and its surroundings. Later, with the introduction of cultivars like 'Aliso', 'Tioga' and 'Tufts' to the Mediterranean Region, strawberry production gained significance especially during the last two decades. With the advancement of production techniques such as drip irrigation and production in greenhouses, strawberry production became a major crop species, especially in the Mediterranean and Aegean Regions of Turkey.

Currently, it is possible to grow strawberries all over Turkey. However, production is concentrated in the Mediterranean, Aegean and Marmara Regions. Silifke, Anamur and Gazipaşa are important production centers in the Mediterranean Region, while the area around Sultanhisar is the main center for the Aegean Region.

Protected cultivation became popular for commercial production, due to its effect on precocity and fruit quality. High tunnels are the most common protected cultivation type followed by mini tunnels. There are also some plastic greenhouses in Antalya and Mersin, producing early fruits in late winter and early spring.

The average size of strawberry farms is small in Turkey. The raised bed annual system is common practice. Black plastic coverage and double-line drip irrigation are also common. Although this is an annual growing system, some growers keep their plantings for a second year. Consequently, yield is significantly reduced in the second year and the incidence and severity of soil-borne fungal diseases increase.

There have been continuous improvements in the horticultural practices for strawberry production in Turkey. For example, sorting berries during harvest is now a common practice. There are now great efforts to minimize the time between harvest and precooling. Precooling is almost exclusively conducted using forced-air. Although modified atmosphere is not used, the cold chain is never broken during transportation. In order to increase the fruit quality, protected cultivation is becoming more and more common. There are efforts to educate growers that Spanish tunnels are more suitable for strawberry production than single-unit tunnels because of improved air movement. The short production season (in April and May) is a major obstacle that is preventing further expansion of strawberry production in Turkey. There are several attempts to overcome this problem. These include: using open and protected cultivation to spread time of harvest, using both frigo and fresh planting material, and planting a range of cultivars in different growing regions. The hot temperatures in early summer do not allow production in current growing locations. Thus, it is expected that the next development in Turkish strawberry production will be in continental, high-elevation locations, possibly using day-neutral cultivars.

Exports of strawberries from Turkey began in 2000. Export volumes have increased in recent years and have stabilized at around 20,000 tons. The main market for Turkish strawberries is Russia and export is highest during April.

Mulberry

Turkey has very old mulberry cultivation, and mulberries are one of the main fruits grown by the Turkish farmers. The four mulberry species (*Morus alba*, *Morus nigra*, *Morus rubra*, *Morus laevigata*) can be seen in different agro-climatic regions of Turkey. There is no registered mulberry cultivar in Turkey but each region has its own local genotypes which propagated by budding or grafting over many years.

The long growing period of mulberries in Turkey resulted in variations among trees belonging to different *Morus* species. In another word, mulberry trees differ from each other in terms of plant size, habits, productivity, leaf and fruit properties etc. The black mulberry (*Morus nigra*) is more common in warmer regions such as the Mediterranean, the Aegean and the Black Sea regions, but white (*Morus alba*) and red (*Morus rubra*) mulberries are more common in temperate regions (Central, Northeastern Anatolia).

Mulberry trees are grown only for fruit production in Turkey compared to the other main mulberry production countries such as India, China etc. which use mulberry trees for leaf yield in sericulture. The interest in growing mulberries is increasing year by year in Turkey.

Raspberry and blackberry

Raspberry and blackberry cultivation in Turkey is centered in the Marmara Region. This production is considered to have been initiated by the Turkish people who migrated back to Anatolia from the Balkans. There have been nationwide projects led by Yalova Atatürk Central Research Institute to adapt new cultivars for varying environments across Turkey.

Although these studies have contributed to overall raspberry and blackberry cultivation, current production is still below the country's real potential. The introduction of new techniques, such as long cane raspberry production, and new cultivars and types, such as thornless blackberries and primocane cultivars, are expected to play important role for increasing production in Turkey. Therefore, several new blackberry and raspberry cultivars are being trialed in other parts of Turkey, such as the Mediterranean and Aegean coasts. Initial results indicated that the region may be too hot during the floriculture production period of raspberry, however, the climate appears to be very suitable for primocane blackberry cultivars.

96.6% of the raspberries produced in Turkey come from Bursa. The city has been quite successful with its "Black Bursa" branding for black figs and is now working on a project to export its raspberries. Tarim A.S., a municipally owned corporation in Bursa, aims to increase the production of raspberries from the current volume of 4 thousand 989 tons to 10 thousand tons. Besides increasing the yields, Tarim A.S. also invests in education for the farmers in order to ensure a high quality production. A visit to Bosnia and Herzegovina, one of the leading raspberry producers in Europe, took place in 2020.

The another booming area for raspberry production is Bodrum, one of Turkey's most important tourism districts. The producers in this region produce raspberries and blackberries in pots.

Both fresh and processed blackberry and raspberry markets are expected to expand significantly in coming years due to the increasing demand from the local food industry and global markets.

Blueberry

The Black Sea Region of Turkey, northeastern part of Anatolia, is one of the main germplasm centers of several *Vaccinium* and Ericaceous plant species. Caucasian whortleberry (*Vaccinium arctostaphylos*), bilberry (*Vaccinium myrtillus*) and lingonberry (*Vaccinium vitis-idea*) have been naturally grown in the forests and plateaus over the centuries.

The first commercial blueberry production by using northern high bush started in the 2000s at the Black Sea Region. Since then the interest of traditional fruit growers in different regions of the country to blueberry production continue to increase rapidly. The increasing demand from local and export markets play an important role to support this trend. The main limiting factors of expansion of blueberry production was the most of the fruit production areas located in the Mediterranean and Aegean Region of Turkey have high soil pH and require low-chill cultivars.

However with the introduction new production methods like growing the blueberry in pots with special substrates and introduction of several low- and high-chill highbush blueberry cultivars with different chilling requirements and maturation periods offer Turkey a big potential to become an important producer. Turkey's close vicinity to main markets, wide range of climatic conditions, relatively low labour costs and its agricultural history are other strengths which supports this idea.



Production of blueberries in pots with substrate



Production of blueberries in greenhouses



Export-import of berry fruits

Turkey exports approximately 170 tons berry fruit each year. The main markets are Iraq (\$114.24K , 161,776 Kg), Saudi Arabia (\$19.43K , 2,654 Kg), Netherlands (\$11.55K , 3,170 Kg), Singapore (\$9.54K , 887 Kg), Hong Kong, China (\$4.53K , 711 Kg).

Turkey Fruit, edible; raspberries, blackberries, mulberries and loganberries, fresh exports by country in 2019

ProductCode	Year	Partner	Trade Value 1000USD	Quantity	Quantity Unit
081020	2019	World	168.10	172,267	Kg
081020	2019	Iraq	114.24	161,776	Kg
081020	2019	Saudi Arabia	19.43	2,654	Kg
081020	2019	Netherlands	11.55	3,170	Kg
081020	2019	Singapore	9.54	887	Kg
081020	2019	Hong Kong, China	4.53	711	Kg
081020	2019	Kuwait	3.05	452	Kg
081020	2019	Russian Federation	2.46	1,695	Kg
081020	2019	United Arab Emirates	1.59	530	Kg
081020	2019	Germany	1.40	337	Kg
Turkey Export 081020	2019	Malaysia	0.16	15	Kg
Turkey Export 081020	2019	Georgia	0.15	40	Kg

HS Nomenclature used HS 1988/92 (H0)

HS Code 081020: Fruit, edible; raspberries, blackberries, mulberries and loganberries, fresh

Plant Quarantine Regulation rules during the import of berry propagation material

The objective of the Plant Quarantine Regulation of Turkey is to lay down the procedures and principles concerning the issues related with plants, plant products and other substances with respect to plant health in the entry into and exit from the country.

This Regulation includes the determination of harmful organisms hindering import and the issues that plants, plant products and other substances shall be subject to in terms of plant health in the entry and exit procedures into the customs area of Turkey and also the official controls.

The entry of all plant material including seeds and propagation materials into the Customs Area of Turkey including free zones and their transit passes as well as their exit from the Customs Area of Turkey including free zones are subject to official controls.

The companies, legal persons or their legal representatives responsible for the shipment during the entry of plants, plant products and other substances into the country shall apply to the General Directorate of the Turkish Ministry of Agriculture and Forestry (General Directorate of Food and Control, Department of Plant and Plant Material Border Inspection) with the Entry Application Form. The original Phytosanitary Certificate or Re-Export Phytosanitary Certificate drawn up by the official plant protection office of the exporting country, a copy of international transportation documents declared to the customs and a photocopy of the invoice of the product should be enclosed to the Application Form. Importers and their legal representatives must fulfill the following conditions before the import:

a) Importers or their legal representatives shall be recorded in the electronic information system and a registration number shall be given.

b) Importers or their legal representatives shall report to relevant directorates in advance the importation of plants, plant products and other substances to be carried out in the near future. This notification shall be made at least 24 hours before the arrival of the shipment in transport by sea; at least 4 hours before the arrival of the shipment in transport by air; and at least 12 hours before the arrival of the shipment in transport overland. This notification shall be made to the Directorate located at the entry point along with the registration number in accordance with the shipment notification form.

Entry control shall be carried out at three stages as the documentary check of the shipment or batch, identity check and plant health check:

a) Documentary check is a control whether the documents required to be enclosed to the application letter for the shipment or batch are drawn up in a complete and orderly manner and whether plants, plant products and growth mediums banned for entry into the country as indicated in Annex-3 of the regulation exist and whether the specific requirements presented in Annex-4 are indicated in the Phytosanitary Certificate.

b) Declaration check is a control whether the documents submitted as annexes to the application letter are in conformity with the product intended to be introduced.

c) Plant health check is an official control made, following the completion of document and declaration controls, to determine whether plants, plant products and other substances intended to be introduced, their packages and transportation vehicles, when necessary, are free from harmful organisms subject to quarantine given in Annex-1 and Annex-2 of this Regulation and whether they possess the specific requirements presented in Annex-4 and whether plants, plant products and growth mediums banned for entry into the country as indicated in Annex-3 exist.

Strawberry crinkle cytorhabdovirus	Plants of <i>Fragaria</i> L. (strawberry), intended for planting, other than seeds
Strawberry mild yellow edge potex virus	Plants of <i>Fragaria</i> L. (strawberry), intended for planting, other than seeds
Strawberry latent ringspot nepovirus	Plants of <i>Rubus</i> L. (raspberry) and <i>Fragaria</i> L. (strawberry), intended for planting
Tomato black ring nepovirus	Plants of <i>Rubus</i> L. (raspberry), <i>Fragaria</i> (strawberry) and <i>Vitis</i> (grapevine), intended for planting

ANNEX -4 SPECIAL REQUIREMENTS FOR IMPORTATION OF PLANTS AND PLANT PRODUCTS

24.

<p>Plants of <i>Cydonia</i> Mill. (quince), <i>Fragaria</i> L. (strawberry), <i>Malus</i> Mill. (apple), <i>Prunus</i> L. (stone fruits), <i>Pyrus</i> L. (pear), <i>Ribes</i> L. (currant), <i>Rubus</i> L. (raspberry), intended for planting, other than seeds, originating in countries where the relevant harmful organisms are known to occur on the general concerned</p> <p>The relevant harmful organisms are</p> <p>—on <i>Fragaria</i> L.:</p> <p><i>Arabis</i> mosaic nepovirus</p> <p><i>Phytophthora fragariae</i> var. <i>fragariae</i></p> <p>Raspberry ringspot nepovirus</p> <p>Strawberry crinkle cytorhabdovirus</p> <p>Strawberry mild yellow edge potex virus</p> <p>Strawberry latent ringspot nepovirus</p> <p>Tomato black ring nepovirus</p> <p><i>Xanthomonas fragariae</i></p> <p>—on <i>Malus</i> Mill.:</p> <p><i>Phyllosticta solitaria</i></p> <p>—on <i>Prunus</i> L.:</p> <p>Apricot chlorotic leafroll phytoplasma</p> <p><i>Xanthomonas arboricola</i> pv. <i>pruni</i></p> <p>—on <i>Prunus persica</i> (L.) Batsch:</p> <p><i>Pseudomonas syringae</i> pv. <i>persicae</i></p> <p>—on <i>Pyrus</i> L.:</p> <p><i>Phyllosticta solitaria</i></p> <p>—on <i>Rubus</i> L. için:</p> <p><i>Arabis</i> mosaic nepovirus</p> <p>Raspberry ringspot nepovirus</p> <p>Strawberry latent ringspot nepovirus</p> <p>Tomato black ring nepovirus</p> <p>— on all species of plants mentioned above:</p> <p>Relevant viruses and virus-like organisms.</p>	<p>It must be stated on the Phytosanitary Certificate that no symptoms of diseases caused by the relevant harmful organisms have been observed on the plants at the place of production during the last complete vegetation cycle.</p>
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27.1

<p>Plants of <i>Fragaria</i> L. (strawberry), intended for planting, other than seeds, originating in countries where the relevant harmful organisms are known to occur</p> <p>The relevant harmful organisms are:</p> <p>Strawberry witches broom phytoplasma</p> <p>Strawberry latent C rhabdovirus</p> <p>Strawberry vein banding caulimovirus</p>	<p>It must be stated on the Phytosanitary Certificate that</p> <p>a) the plants, other than those raised from seed, have been:</p> <p>— either officially certified under a certification scheme requiring them to be derived in direct line from material which has been maintained under appropriate conditions and subjected to official testing for at least the relevant harmful organisms using appropriate indicators or equivalent methods and has been found free, in these tests, from those harmful organisms,</p> <p>or</p> <p>— derived in direct line from material which is maintained under appropriate conditions and has been subjected, during the last three complete cycles of vegetation, at least once, to official testing for at least the relevant harmful organisms using appropriate indicators or equivalent methods and has been found free, in these tests, from those harmful organisms,</p> <p>b) no symptoms of diseases caused by the relevant harmful organisms have been observed on plants at the place of production, or on susceptible plants in its immediate vicinity, during the last complete vegetation cycle</p>
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27.2

<p>Plants of <i>Fragaria</i> L. (strawberry), intended for planting, other than seeds, originating in countries where <i>Aphelenchoides besseyi</i>, <i>A. fragariae</i>, <i>Ditylenchus dipsaci</i> are known to occur</p>	<p>It must be stated on the Phytosanitary Certificate that</p> <p>a) no symptoms of the relevant organisms have been observed on plants at the place of production during the last complete vegetation cycle,</p> <p>or</p> <p>b) in the case of plants in tissue culture the plants have been derived from plants which complied with paragraph (a) of this item or have been officially tested by appropriate nematological methods and have been found free from the relevant organisms.</p>
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27.3

<p>Plants of <i>Fragaria</i> spp. (strawberry), intended for planting, other than seeds</p>	<p>It must be stated on the Phytosanitary Certificate that the plants are originated from an area known to be free from <i>Anthonomus signatus</i> and <i>A. bisignifer</i>.</p>
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<p>Plants of <i>Rubus</i> L. (raspberry) intended for planting:</p> <p>a) originating in countries where harmful organisms are known to occur on <i>Rubus</i> L.</p> <p>b) other than seeds, originating in countries where the relevant harmful organisms are known to occur</p> <p>The relevant harmful organisms are:</p>	<p>a) The plants shall be free from aphids, including their eggs</p> <p>b) It must be stated on the Phytosanitary Certificate that</p> <p>(aa) the plants have been:</p> <p>— either officially certified under a certification scheme requiring them to be derived in direct line from material which has been maintained under appropriate conditions and subjected to official testing for at least the relevant harmful organisms using appropriate indicators or</p>
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<p>in the case of (a): Tomato ringspot nepovirus Black raspberry latent ilarvirus Cherry leaf roll nepovirus Prunus necrotic ringspot ilarvirus</p> <p>in the case of (b): Raspberry leaf curl luteovirus Cherry rasp leaf nepovirus</p>	<p>equivalent methods and has been found free, in these tests, from those harmful organism,</p> <p>or</p> <p>— derived in direct line from material which is maintained under appropriate conditions and has been subjected, during the last three complete cycles of vegetation, at least once, to official testing for at least relevant harmful organisms using appropriate indicators for equivalent methods and has been found free, in these tests, from those harmful organism</p> <p>(bb) no symptoms of diseases caused by the relevant harmful organisms have been observed on plants at the place of production, or on susceptible plants in its immediate vicinity within the last complete cycle of vegetation.</p>
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SWOT Analyses of Turkish Berry Fruit Sector

STRENGTH

- Different types of climatic zones and large scale of idle lands available in the country, offers opportunities to expand the production session of berry fruits almost up to 7 months by using pot planting with substrates and irrigation.
- Low labor cost approximately 2.30 Euro/hour compared to EU and US.
- Increasing demand for berry fruits both internal and international markets as well as for the local food industry.
- Geographical position of the country and well developed transport and infrastructure system.
- Local investors with an entrepreneurial nature.
- Government supports which encourage the new investments.
- Much faster return of investment costs compared to other products.

WEAKNESS

- Most of the fruit production areas of Turkey have high soil pH. For this reason extra investment cost is necessary (costs like; production in pots with special substrates, irrigation and protection covers)
- Currency fluctuations and high inflation make it difficult to make a clear cost and investment analyses.
- There are only few commercial cultivation practices of blueberry, raspberry and blackberry. For this reason, farmers have limited knowledge and tradition for these products. There is lack of knowledge and experience.

OPPORTUNITIES

- There is an increasing demand for investors in investing berry fruit production, especially in blueberry production.
- Turkey needs different types of new cultivators (early, late, high chill, low chill etc.) and these propagation material mostly imported from EU.
- Production of berry fruits in pots with special substrates and irrigation offer new markets for several products.
- Many municipalities and local co-operatives are interested in production of berry fruits. The Turkish government support this trend.
- There is still limited knowledge for professional berry production. The consultancy services and training of the producers (to increase yield and quality as well as combating with the diseases) will be required.
- Turkey will play an important role for the supply of food in general to EU, Russia and Middle East (Gulf region) countries.

THREATS

- High inflation and economic instability creates uncertainty for investors.
- Although Turkey's strategic position is an advantage to reach many export markets, this region is not always stable and open to many political and economic risks (Syria, Iraq, Iran, and recent war between Ukrania and Russia etc.)
- The increasing energy prices harm the economy badly as Turkey is net importer fuel and natural gas.
- Turkey is highly vulnerable to climate change. As part of the southern belt of Mediterranean Europe, the country is already facing an observed warming trend in temperatures and a decreasing trend in precipitation. This is having a major negative effect on water availability for food production and rural development, further exacerbating the social and regional disparities in a country characterized by a wide (and widening) gap between the eastern and southeastern provinces and the rest of the country.

Government Supports for fruit sector

In addition to the cheap credit supports to establish an orchard, the Turkish Ministry of Agriculture and Forestry also provides a support for saplings and propagation material.

The State owned Agricultural Bank (Ziraat Bank) provide the necessary financial support for the construction of the orchard for those who already active in this sector or who will enter the agricultural sector. The upper limit of the loan is determined as 10.000.000 TL (around 625.000 Euro). As stated in the Presidential decision, with the additional discount rates to be added, this discount may reach to 100% if the specific criteria's are met.

Accordingly, while the Investment and Business Loan discount rate for Orchard and Viticulture has been both determined as 75 percent, it will be 100% - ZERO INTEREST under the conditions mentioned below are met;

- 20 percent additional interest discount in case of using domestically certified seeds, seedlings and saplings
- An additional 10 percent for producers who are 40 years old or younger, including Young Farmers/Entrepreneurs,
- If the person who will use the loan is a woman, an additional 10 percent interest discount will be applied.

In order to finance the producer's expenses on fruit growing and viticulture, the 75 percent discount rate determined as the Business loan; and the following discount ratio will be applied if the following conditions are met;

- 10 percent discount with the use of modern pressurized irrigation system
- 20% interest discount with the use of domestically certified seeds, seedlings and saplings
- 20 percent discount if contract production will be applied
- 10% interest discount with organic and good agricultural practices 10 percent interest discount for young farmers over 40 years old
- If the fruit grower is a female farmer, a 10% interest discount will be applied.