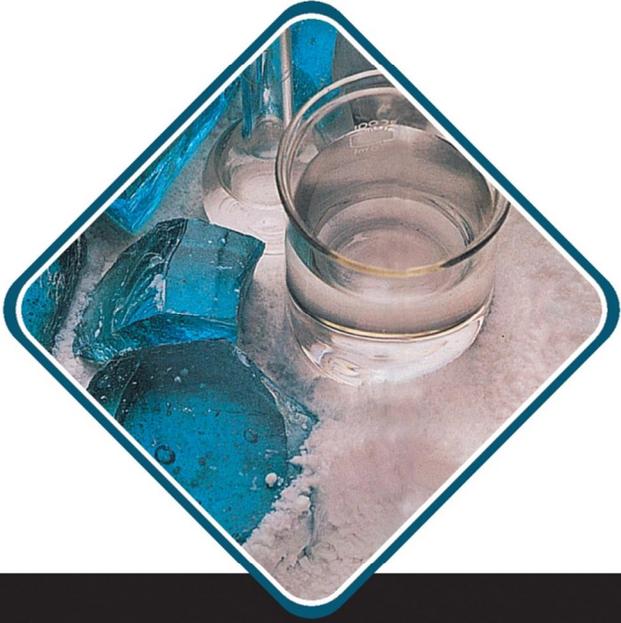


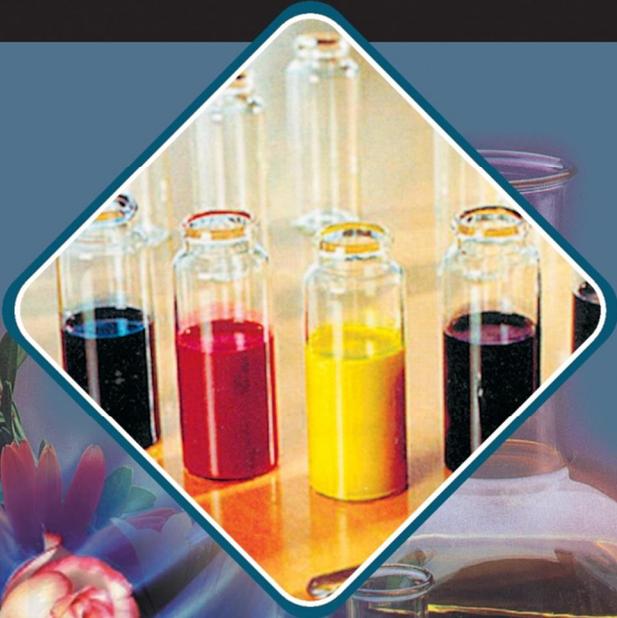


REPUBLIC OF TURKEY
MINISTRY OF ECONOMY

INDUSTRY



ESSENTIAL OILS



TURKEY
www.economy.gov.tr

ESSENTIAL OILS: TURKISH ROSE OIL

Essential oils are aromatics or odorous, oily liquids (sometimes semi-liquid or solid) obtained from parts of plants, such as flowers, buds, seeds, leaves, twigs, bark, herbs, woods, fruits and roots. Essential oils are mainly used in the food industry as flavoring agents, in the perfume industry for fragrances and in the pharmaceutical industry for adding taste or smell or suppressing the less desirable medicine taste.

Owing to Turkey's suitable climatic and ecological conditions, hundreds of medical and aromatic plants are cultivated or gathered from the nature. Turkey is one of the countries best suited for organic cultivation.

In Turkey, there are many plants from which essential oils are produced and rose is the most popular one.

What is Rose Oil?

Rose oil is steam distilled from the flowers of the Rose damascena. Rose oil, its extracts and derivatives are among the most important ingredients of natural perfume. They have remarkable diffusive power and are used in many types of perfume bases, particularly blending well with other florals.

Rose oil is a very expensive essential oil, partly due to the lack of quality natural and synthetic substitutes. The short flowering time of the Rose damascena is another reason for its high price.

History of the Turkish Rose damascena

Rose damascena was brought to Anatolia in 1870 by immigrants from Bulgaria. In 1888 cultivation of the rose began in Isparta and in 1892 the production of rose oil was accomplished by a person named Muftuzade Ismail Efendi. For years, rose oil was produced in simple and primitive boilers which Muftuzade Ismail Efendi called Sital. This method of production continued up to 1935 until Atatürk, the founder of Republic of Turkey, first came to Isparta and instructed the Minister of Economy to build a large industrial plant. Then the agricultural cooperative, Gülbirlik-Gül Gülya ve Ya Tohumlar Tarım Satış Kooperatifleri Birliği, established the first rose oil plant in 1958 and other rose oil complexes in 1967. Today, rose oil production in Turkey is realized mostly in industrial plants.

Production of Rose Oil

Rose cultivation for mainly rose oil production takes place in Isparta, in the south-west part of Anatolia in Turkey. The Turkish rose oil sector has significant production and export capacity.

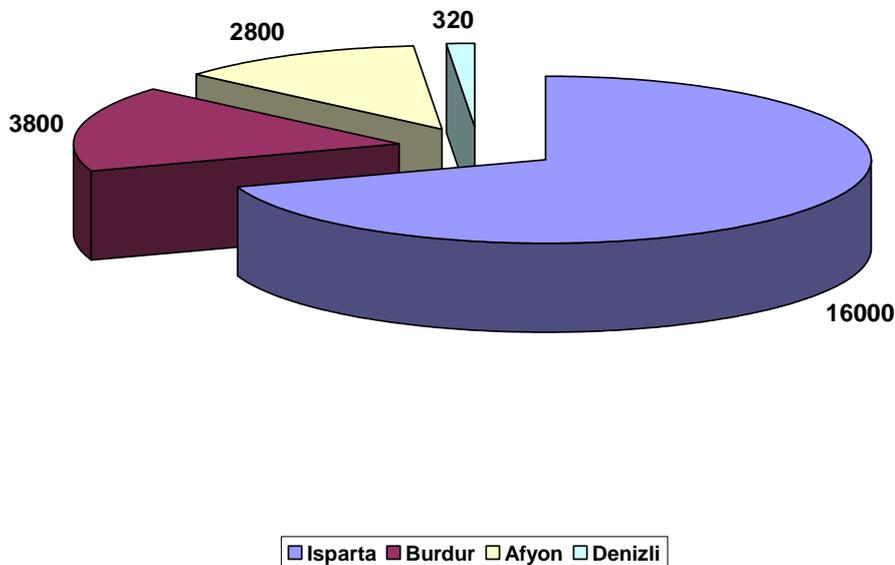
Turkey is among the top producers of rose oil in the world. World-famous Turkish Rose Oil is produced in large quantities in Turkey. Rose oil production has been realized for over 100 years in Isparta. That is why Isparta is called the Rose District. Roses are also cultivated in the Afyon, Burdur and Denizli districts. Approximately 1.5 tons of rose oil and 7 tons of rose concrete are produced in Turkey annually.

Rose Oil Production Areas: Isparta, Afyon, Burdur, Denizli



The areas of rose cultivation expanded and cultivation began in Afyon and Denizli in 1989 in addition to Isparta and Burdur.

Rose Oil Production Areas in Turkey (Unit: da)



Source: The Provincial Directorates of the Ministry of Agriculture and Rural Affairs

Gülbirlik - Gül Gülya² ve Ya¹² Tohumlar Tarım Satış Kooperatifleri Birliği is the main producer of rose oil. Gülbirlik was established in 1954 as the union of nine founder cooperatives. At present it consists of 6 cooperatives, 8,000 members, 4 rose oil factories in 3 separate locations and 2 rose concrete factories. Gülbirlik processes 3 tons of rose flower daily in its factories according to Turkish and world standards, and it is the largest manufacturer and exporter in this field both in Turkey and in the world. Gülbirlik recently started to manufacture various value added rose oil products such as rose oil based cosmetics and rose oil flavoured sweet. There is another cooperative in Afyon, namely **Bağcıbaşı Gül Kooperatifi** which has 3,000 members. The cooperative produces ecologically certified rose oil. There are also 8 medium and small size private companies in the sector. Two of them are French originated firms and make production mostly for their parent companies. Besides, there are various family owned workshop scale places of production in the villages of Isparta and in the other provinces.

Roses are gathered during the 40-day flowering season which is in May and June. The humidity and cloudiness during the season have an effect on the yield and quality of rose oil.

There are two methods for Turkish rose oil distillation: the traditional but slowly disappearing village-type distillation using log-fired crude copper boilers known as **ambek** and the modern factory production method using hydro-steam distillation in boilers called **kazan**. Both methods have distinctive characteristics but the quality of rose oil produced by these two methods is the same.

Physical and chemical characteristics of Turkish rose oil:

Odour Description	: Strong and sweet rosaceous character
Appearance	: Liquid
Colour	: Light Yellow - Green
Specific Gravity	: 0.844-0.868 (25 C)
Refractive Index	: 1.4520 - 1.4630 (25 C)
Optical Rotation	: -3.3to -5.9 (25 C)
Flash Point	: Not determined
Solubility	: In Alcohol 90 %
Purity	: 100 % Natural
Intended Use	: Perfumery . Flavour production

Turkish Rose *Damascena* products can be grouped in four categories:

Rose Oil

Rose oil is produced by steam distillation of *Rosa damascena* M., the pink, light red rose and *Rosa Alba* L., the white rose flowers. 3,000 litre boilers (sıtıl in Turkish) made of copper are used for distillation. Rose oil is a blend of decanted-direct-oil and water oil which are obtained in two steps by distillation.

Rose oil is the most important and the most expensive raw material of the perfumery and cosmetic industries. The best quality rose oil, in accordance with world standards, is produced from the rose flowers which are grown in Isparta and the surrounding area at a level of 1,050 m or more above sea level during May and June.

Rose Concrete

Rose concrete is a waxy product produced via extraction from rose flowers with volatile solvents such as hexane and subsequently by evaporation of the solvent in a vacuum. It is used to produce rose absolute, which is one of the raw materials used in the perfumery and cosmetics industries.

Rose Water

Rose water is a by-product obtained during the distillation of rose flowers. It is natural rose smelling water which is obtained by mixing pure, clean hot water with oil water in the ratio of one to one during the production of rose oil. Then it is filtered several times and bottled. It is used as an aroma for some foods and sweets, and also to clean make-up and the body since it is natural and pure.

Rose Absolute

Rose absolute is obtained via the extraction of rose concrete with alcohol. The alcoholic solution is distilled under a vacuum to remove the alcohol.

Turkey produces many other essential oils

In addition to rose oil, which is a traditional product, other essential oils are also produced in large quantities in Turkey. The most popular ones are laurel leaf oil, origanum oil, lavender oil and mint oil. The other essential oils produced are myrtle oil, fennel oil, anise oil, cumin seed oil, sage oil, juniper oil, rosemary oil, melissa oil, pennyroyal oil, styrax oil and vitex oil.

Two species are important commercial sources of styrax. Styrax oil is extracted in Turkey from *Liquidambar orientalis* which is a tree of 15-20 meters tall. This species is native to eastern Mediterranean Europe and the Near East, and is the source of styrax oil known as Asian styrax. The only country in the world for this type of styrax oil is Turkey. Production is made in limited amounts by using traditional methods in workshop scale places. The production takes place particularly in the Mediterranean and the Aegean Regions. The other species is *L. styraciflua*, a tree native to the south-eastern United States, Mexico and Central America. It is the source of essential oil called American styrax.

Laurel leaf oil, which is famous worldwide, is produced in large quantities in Mersin, Antakya and its surrounding regions.

Parallel to the increases in both domestic and world demand, the amount of essential oils produced is increasing every year.

EXPORTS OF ESSENTIAL OILS

Turkish essential oil exports are showing an increasing trend depending on world prices and cultivation. The exports of essential oils, their by-products and resinoids reached US\$ 25.1 million in 2013. The major part of Turkish essential oil exports consisted of rose oil. Rose oil has been a traditional export item, followed by stearopten oil and origanium oil.

Essential oils were mainly exported to the European countries. Major destinations for essential oils were France, UK, Germany, USA and Switzerland. These countries accounted for 85 % of total Turkish essential oils exports in 2013.

The Turkish rose oil industry is highly competitive worldwide. Foreign trade of Turkish rose oil has very old and traditional roots. The exports started very long time ago. It is known that the majority of rose oil exports between 1920 and 1921 were destined for France and the USA.

The value of rose oil exports reached US\$ 10 million in 2011, US\$ 12.6 million in 2012 and US\$ 10.7 million in 2013. The majority of exports were directed to France, Switzerland, PRC, Germany, UK, Hong Kong, USA, Bahrain, Libya and Israel.

Turkish Rose Oil Exports by Years (HS No: 3301.29.41.90.12)
(US\$ 1,000)

Years	Value
2002	8,068
2003	9,784
2004	7,393
2005	7,174
2006	7,594
2007	9,383
2008	11,210
2009	8,492
2010	9,157
2011	10,301
2012	12,613
2013	10,748

Source: Ministry of Economy

Turkish Essential Oils Exports, (Value: US\$)

HS No.	Products	2011	2012	2013
330112	Essential oils of orange	-	4.844	489.129
330113	Essential oils of lemon	97.329	149.981	198.692
330119	Essential oils of citrus fruits, nes	167.399	237.122	17.652
330124	Essential oils of peppermint	-	42.376	47.285
330125	Essential oils of other mints	1.345	165.664	3.868
330129	Essential oils, nes	19.720.767	21.382.465	21.941.979
330130	Resinoids	7.647	24.588	-
330190	Conc&aqueous distls of essentl oils;terpenic by-prods of essentl oils	2.182.229	2.786.846	2.455.535
Total		22.176.716	24.793.886	25.154.140

Source: Ministry of Economy

Turkish Essential Oils Exports by Countries (Value: US\$)

Countries	2011	2012	2013
FRANCE	14.496.813	16.219.521	16.617.401
UK	1.150.300	1.750.136	1.355.279
GERMANY	3.139.140	2.092.724	1.333.227
USA	873.190	723.051	1.143.267
SWITZERLAND	333.475	984.655	905.648
CANADA	297.472	349.262	720.436
IRAN	21.702	6.912	530.507
PRC		106.607	435.659
BAHRAIN	124.087	287.897	342.425
AZERBAIJAN	96.323	222.211	322.945
HONG KONG	385	85.241	237.401
AUSTRIA	59.930	32.063	149.976
POLAND	329.733	82.913	128.234
LIBYA	127.014	243.302	123.309
ISRAEL	31.524	74.887	84.145
List Total	21.081.088	23.261.382	24.429.859

Source: Ministry of Economy

TRADE FAIRS

12-14 June 2014	BeautyEurasia - International Trade Fair for Beauty Products, Cosmetics, Parfumery, Salons and Wellness	Istanbul (Turkey) www.beautyeurasia.com
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USEFUL LINKS

- The General Secretariat Of Antalya Exporters Association
(www.aib.org.tr)

Products: Export of fresh fruit and vegetables and products, essential oils, textiles and textile raw materials, cut flowers, greenery, bulbs etc.



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