



Birjand Chamber Of Commerce  
Industries, Mines, & Agriculture

# Barberry

The Persian Ruby



## Iran at a Glance

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Owing to its varied landscape, Iran's climate is also subjected to numerous variations. While the Caspian coastal plain on the northern edge of country remains humid throughout the year due to an average elevation at or below Sea level, the higher elevation areas towards the west experience lower temperatures.

Iran is significantly varied in terms of temperature, humidity, and rainfall from place and season to season. The temperature decreases as you travel from south to north.

Persian (Farsi) is the official and the most widely spoken language. Arabic is spoken in Khuzestan in southwest and Turkish in the northwest.

Predominantly religion is Islamic, mostly Shi'ite, with minority of Sunnies. Many Christians, Jews and Zoroastrians also live in Iran.

# Economy of South Khorasan Province

## Agricultural Sector:

Province of Khorasan South enjoys a semi-desert and semi-moderate climatic condition has dried weather with average rainfall of 50-250 mm.

A comprised of approx. 200 wells, 3700 aqueducts, 1261 springs, water resources of this province are supplied from rivers of Afin, Qayen, Shakhen, Fakhroud and seasonal rivers of Siyahkouh, Mahiroud, Hajiabad, Shahabad and Alang.

With more than 780 thousand ha agricultural land, this province is considered as one of regions with agricultural economy approach in the country. The most important agricultural products of this province are: wheat, barley, cotton, sugar beet, cereals, etc. Moreover, horticultural products of this province include are: barberry, saffron, jujube pistachio, almond, apple, pear, pomegranate, walnut and grape.

Amongst agricultural products of this province, barberry and saffron stand on the first and second ranking in the country.



## History:

According to some historical documentation, some species of Barberry plant especially seedless type belongs to Iran and this type is grown in the cities of Qayen and Birjand which are located in the Province of Khorasan South Iranian farmers were familiar with properties and features of this plant. According to the written work of Rahese and Avicenna this plant had been used for treatment of fever, thirst, inflammation, cough, liver disorders and elimination of depression. The production of the Barberry has been in commercial form for the past 200 years and farmers of the Province of Khorasan South are mainly involved in this product.



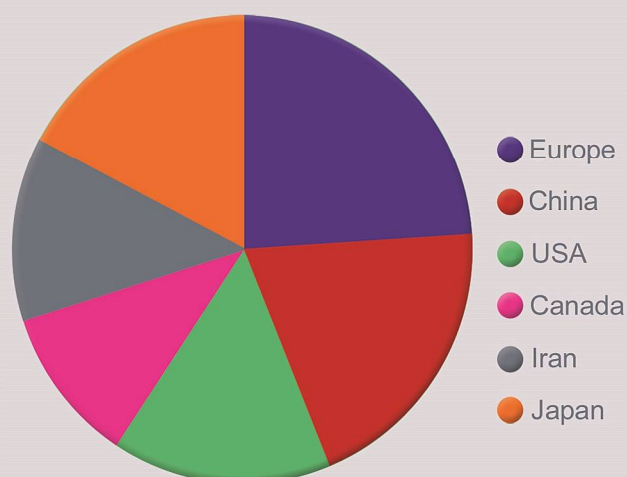
## Introduction of Product:



Barberry is known with the scientific name of "*Barberis Vulgaris*". This plant has thorny shoots and grows between 1 to 6 meters high, with brittle branches. This plant belongs to Berbridaceae species. It has approximately 500 different species. Barberry is compatible dusts and sunny weather. the wild species of this plant are used for food consumption and ornamental use. The period of productivity of this plant is between the age of 14 to 25 years. This yielding age can be up to 85 years As far as the perspective of agricultural industry is concerned, this plant holds the highest importance for the country. The fruit of Barberry grows in the form of Pendant Cluster and has various usage in the pharmaceutical and foodstuff Industry. Similar to a cube oval, length of each fruit is measured between 7 to 12mm with diameter of 6 to 9mm When the fruit grows, from the beginning the color is green turning to a yellowish color and finally becomes red when it is ripe. When the fruit is ripe during the autumn, the red color cluster from the distance, looks like ruby ornamental jewels hanging from the plants. This ornamental decoration attracts the eyes of anyone passing by.

## Production Status:

Barberry production share



With the annual production of approx. 32,000 tons of fresh

barberry, Iran is regarded as the center of seedless Barberry and a major producer of this product in the world.

It should be noted that this product is cultivated in various regions of Iran such as: provinces of Tehran, Alborz, Qazvin, Azarbaijan, Gorgan and North, South and Razavi Khorasan

Amongst the cities of Province of Khorasan South., Qaenat is the largest producer of barberry in the country with production of 7,000 ha of land.

With allocation of 85% of total production rate.

NO.	City	Cultivation Land (Ha)	Production Volume(Ton)
1	Qayen	6767	5835
2	Birjand	3885	4324
3	Darmiyān	2005	1665
4	Sar Bisheh	1234	1404
5	Sarayan	5	4
6	Nehbandan	2	2
7	Ferdows	1	1
8	Others		215
9	Grand total		13450



## Diversities and Species of Barberry in Iran:

Hercunder are regarded as the most important species of barberry in Iran:

- 1- Barberries Crataegina
- 2- Barberries Integerrima
- 3- Barberries Khorasanica
- 4- Barberries Orthobatrys
- 5- Barberries Vulgarize

As far as various types of Barberry is concerned, the "Barberry Vulgarize" which is a unique seedless type in the world, is produced in Iran. As a major producer of this product, Iran has a great share on the production of this product.



## Traditional Usege

As mentioned before in the traditional medicines in the villages Barberry had been used for treatment of the following illnesses: diarrhea, fever, eradication of stomach-ache, curing of itching and skin disorder, increase of body strength Also brewed barberry is used for freshness of breath and is consumed as blood purifier.

Barberry fruit is consumed for treatment of typhus, chest pain and as anti-malarial and expectorant medicine. Fruit of this plant is rich with vitamin C, the rate of which is more than lime. For this reason, barberry is consumed for treatment of scurvy disease. Barberry leaf is used as astringent and enjoys anti-fat prop The tea, provided from leaves of barberry, is consumed for treatment of cough and is used for treatment of side effects of Vitamin C deficiency Skin, stem, and root of this plant have disinfectant and astringent properties, facilitator of bile flow febrifuge, appetizer, and strengthener and are useful for liver.

In the Iran's traditional medicine, barberry fruit had been known as a plant with relieving effect and regulator of the heartbeat. Extract of barberry fruit has fruitful effects on cardiovascular and nervous systems and can be used for treatment of blood pressure, hypertension, heart high palpitation, and some of nervous abnormalities like fainting and convulsion.

Medicinally, barberry has thus far been supplied in the following forms: liquid extract capsule (tinctures), topical ointments and pigment. The dried roots of this plant can also be used in tea. The standardized extract of barberry has 8-12 percent of Isoquinoline alkaloids

Barberry fruit prevents body from chronical bleeding. Barberry fruit is useful for reduction of mucus secretions and will remove excess bile from the body.

Moreover, barberry fruit cuts hemorrhoid bleeding and purifies blood and finally it is used for reducing blood triglyceride. Barberry fruit is useful for blood pressure and hypertension disease and is anti-parasitic liver.

Consumption of barberry fruit is highly recommended for regulation of microbial flora of body after taking antibiotics. It should be mentioned that consumption of barberry fruit is for treatment of sore throat, bladder and lung infection, chest pain, and also malaria disease and will cause contraction of vascular.

In Avicenna's Canon of Medicine Book, medicinal properties of six kinds of herbal mix medicines entitled "Barberry Pill" have been reiterated.

Barberry leaf solely or its mixture with appropriate medicines is used for treatment of wound of intestines and also for removal of diarrheas, resulted from weakness of viscera inside abdomen. Boiled barberry leaf is used for washing eye and also is applied in gargle form for tooth cavity.

Brewed barberry leaf is used for treatment of knee disease, chronical diarrheas mouth and gum disease like pale and infection of gums and sore throat. Its stem skin has anti-parasitic property and is tonic for stomach and will alleviate fever to a great extent.





## Properties, Specifications Consumption of Barberry:

The richness with the beautiful nature of this country has made treatment of diseases by using this plant look like a miracle in some cases.

Many years ago, herbal medicines were prescribed for treatment of various diseases. Barberry is a shrub and its root, stem, leaf and fruit are used in herbal therapy.

Medicinal herbs include aromatic oils, alkaloids, protein materials and melenoids. Barberry main alkaloids (*Barberis Vulgaris*) include Berberine, Oxyaconthine, Berbamine, Palmatine, Colabamine, which plays an important role in treatment of diseases.

As mentioned before this plant was used in different aspects of medicinal purposes in Iran and many parts of the world, by different nations.

Nowaday, it is believed that this plant relieves joint, arthritis, rhcumatism pains and sudden inflation of Psoriasis. Root and stem of barberry are in yellow color. Europeans und North American people use barberry for dyeing their clothes.





## Barberry Leaf and Fruit:

Barberry fruit has a cold and dry nature. In traditional medicine, barberry fruit and leaf is a tonic for liver and heart, reducing excess bile, relieving stomach temperature and also obstructor of blood flush and hemorrhoids. With regard to cold-natured people, if barberry juice is drunk with warm-natured medicines like valerian, it is useful for invigoration and removal of obstruction of liver. Barberry leaf, if mixed solely with appropriate medicines, is used for treatment of wound of intestines and also elimination of diarrheas resulted from weakness of stomach inside abdomen. In Mongolia, barberry was used for exiting body moisture and obstruction of bleeding and also for treatment of diseases with mucus secretions. Barberry fruit was used as contraction of vessels and have been recommended (due medicinal compound existing in barberry ) as a tonic for stomach and anti-nausea and anti-vomiting medicine during pregnancy. Chewing barberry leaf will cause stiffness of gums.

Russians were using barberry for removal of uterus bleeding inflammation, bleeding, severe tensions, bilious cyst disorders, and for increasing bile. For aromatizing mouth and increasing body general health, barberry fruit can be chewed. The women who their menopause period is approaching and those women who are suffering from uterus disorders are highly recommended to drink barberry. Barberry also is used for treatment of cancers or liver, neck and stomach tumors as well as enlargement of liver .

In Europe and America, barberry stem and root skin had been used as disinfectant, astringent, treatment of jaundice, sedative, reliever, removal of fever, treatment of stomachache and also as a anti-vomiting medicine and bitter energizer. Flowers and stem skin of barberry had been used as medicine for treatment of rheumatism. In Romanian traditional medicine, root and stem skin of barberry had also been used for treatment of hepatitis, and kidney-related (nephrology) diseases.

Medicinal herbs, containing Berberine, had been consumed massively as anti-diarrhea medicines in China and India within a 1,000-year period.



Some old physicians in Italy were of the opinion that Berberine and barberry stem skin was useful for removal of spleen, resulted from malaria disease. In China and Japan, Japanese skin and shrub of barberry had been used as coolant, anti-parasite and disinfectant medicine and are prescribed for reduction of fever and also for treatment of excessive secretion of menopause blood as well.

In India, fruits of *Aristata* (local name of barberry shrub) are prescribed as a painkiller to for children. Its stem has perspiring and painkilling property applicable in treatment of rheumatism. The dried extract of barberry roots is used for reduction of eye ache. Also, this plant is used as excellent medicine for blindness resulted from sun. Skin of barberry roots is a precious medicine for treatment of permanent fevers. Roots of this plant are considered as one of rare medicines prescribed mostly in India. Efficacy of this plant is equal to quinine and will not leave negative side effect on abdomen, intestine, brain and ears. One of the most valuable medicines in India entitled "Rasta" is provided from barberry. For providing this medicine, root skin and lower part of stem are boiled in water and then the mixture strained and demoinsturized with the aim of being turned to semisolid This material is mixed with butter and alum or opium and lemon juice. The produced material is rubbed to eyelash for treatment of exophthalmia and other eye diseases It is prescribed to children as laxative and blood purifier medicine and is used as invigorator and alleviation of fever. In Mexico, root of normal barberry known as "Barberries Vulgarize" is applied for treatment of oral cancer, liver tumors. Other species of barberry in Indian medicines are used for treatmert of anus and uterus tumors and abdominal cancers. Clinical studies made in Canada show that barberry root extract should be consumed three times a day for treatment of Psoriasis and other skin-related problems

## Other Usages and Applications of Barberry:

On the other hand, barberry is supplied in the form of tea, capsule, extracts, liquids tinctures and topical ointments. Medicinally, extracts obtained from this material contain 8 to 12 percent of standardized Isoquinoline alkaloids. Also, barberry wood is used in turnery for making inlaid works and its thorn is used for making toothpick. Also, barberry wood has varnishing property. Since barberry is useful for body especially body skin, its consumption in no longer time will cause cleanness of skin from acnes and will help freshness and transparency of skin to a great extent.



## Usages of barberry in Modern Medicine:

Based on studies carried out in this regard, most medicinal properties of black barberry is related to the existence of alkaloids in chemical compound of various organs of this plant.



In recent decades, studies show that these compounds have antimicrobial, anti-fungal, and anti-parasitical effects.

Moreover, studies show that Berberine is the most effective material in root extant alkaloids group at barberry plant. The most significant Berberine herbal source exists in various barberry species of Vulgarize, Mahonia Egoeiphylum and Barberis Nerosa.

Berberine is a natural antibiotic in Barberry plant for confronting with stuff bacteria. Hereunder are regarded as other effects of Berberine: reducer of sugar, anti-inflammation, anti-gout, anti-acne, anti-spasm effects, reducer of blood cholesterol level, spermicidal effect, stimulator of uterus contractions, reducer of blood pressure, anti-tumor, etc.

Of the other alkaloids existing in various organs of Barberry, it should be referred to: Berbamine, Berborobin, Xatorzene, Oxyacanthine, Palmatine (Berbericine), Brolycene, Colombamine, Valracene, etc. which have been reiterated in other references

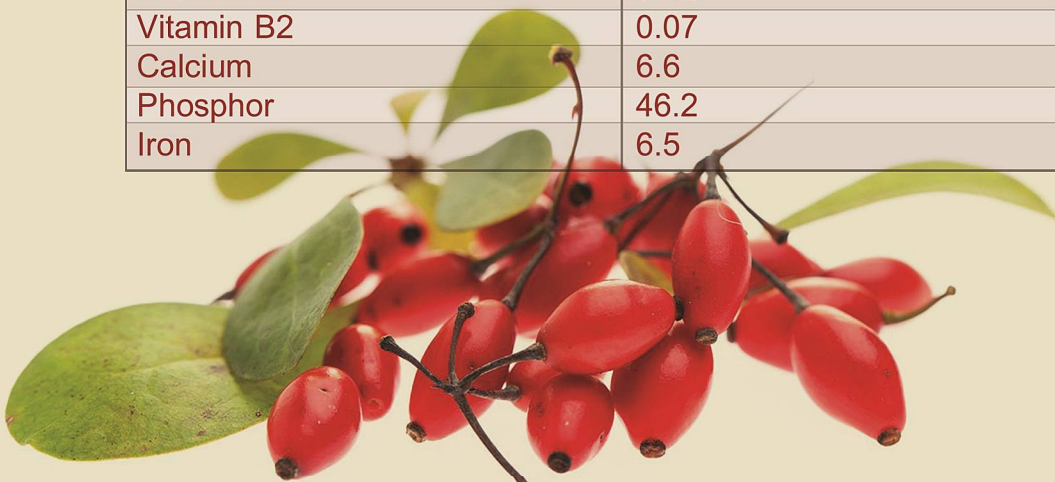


Hereunder are some other studies carried out in recent years in the field of modern medical methods through using barberry:

Using barberry for treatment of Psoriasis diseases,  
Applying barberry plant For treatment of addicts to opium,  
Using barberry in preventing digestive system disorders especially liver disorder  
Balancing bilious secretion and diarrhea of intestines (Leucine Capsule)  
Treatment of various skin diseases (various types of ointments and cosmetics creams)  
Application of barberry in preventing hepatitis, jaundice, reducing blood pressure, heartbeat and bronchitis contractions  
Using barberry in relieving muscular and spasm pains and abdominal cramps  
Using barberry in treatment of patients suffering from diabetes  
Applying barberry in preventing cavity and tooth plaque and inflammation of gum(dental gel with barberry extract)  
Using barberry in treatment of eye diseases such as exophthalmia  
Using barberry for treatment of severe fevers and infective ulcers and wounds (various types of painkilling capsules with barberry extract)  
Being effective in treatment of wounds of stomach, large intestine and duodenum  
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Being effective in removal of kidney stone and bile cyst as a astringent and anti-infectoin in septic fevers

## Chemical Compounds of Gram-Percentage of Barberry Fruit:

Compounds	Percent
Carbohydrates	16-18
Protein	1.038
Fat	0.11
Ash	1.2
Vitamin C	99mm
Vitamin B1	82%
Vitamin B2	0.07
Calcium	6.6
Phosphor	46.2
Iron	6.5



## Using Barberry for Extraction of Natural Color:



### Using Barberry for Extraction of Natural Color:

Barberry fruit is used for dyeing clothes, garments, tanning leather, cling wool fibers, silk and cotton. Barberry turns fibers in red color. If barberry is mixed with alum, its red color will turn pure yellow.

Barberry root is used for dyeing leather. There are various reasons for using herbal and mineral colors for dyeing (especially wool), the most important of which is related to sustainability of these colors and safeguarding environment as a result of applying them.

## Barberry Food Consumption

Barberry is used as a condiment or food ornaments Iranian dishes and food Menu. Barberry, due to its color and Palatable taste is used for making a variety of different food such as: rice Barberry with chicken, and various types of dishes and also various types of soups.

Seedless barberry is also used for Making different types of sweet canies with honey.

In the recent years with in the food stuff Industry As far as the application of Barberry is concerned.

It has been used in different variety of production. These productions are: different kind of sauces. Jellies, carbonated soft drinks, candy, pastille, edible color powder, and chocolate manufacturing application of Barberry.

The efforts are made for substituting Iranian barberry extract instead of imported extracts in provision of carbonated soft drinks is of the most important regional research and applied concepts.

One of the most important cases of using barberry fruit is its application in providing barberry jam which is common in Khorasan South. Barberry fruit is also used for making barberry syrup.



## Standard and Qualitative Status:

4 For boosting quality of barberry and safeguarding it, companies have embarked on winning pertinent standards for this product.

The companies active in this sector have also embarked on accumulating, drying, processing and packing barberry through receiving international qualitative standards like HACCP (Hazard Analysis Control Critical Points), taking advantage of national standards like ISIRI and observing sanitary issues at all stages of planting, caring and harvesting operations with the aim of supplying this product for the target markets.

Meanwhile, all products must bear ISIRIP logo. Which shows that the products are offered to the consumer market have the highest quality for consumers across the world.



## Trade Promotion Organization of Iran

TPO of Iran is an active, cooperation-oriented and scientific -based organization established to meet the country's capital strategy and is aimed at developing and supporting foreign trade and accessing new markets in an effective and efficient manner. This organization is committed to establishing constructive mutual conducts with made partners and their beneficiaries and focuses on efficient human resources development and use of advanced technology. To support export plans and trade infrastructure, the organization has concentrated on effective planning and strategies and overall supervision.

### Strategies

- Promoting ex•rt and for gn trade
- Developing export culture and foreign trade
- Promoting a positive trade balance
- Planning and advanced supervision over foreign trade promotion
- Promoting efficiency and productivity of organizational human resources zit cP.

### Goals

- Promoting foreign trade, marketing, advertising and extending global markets for the country's products and services
- Providing facilities to promote trade agencies and support their capabilities in order to develop non-oil products export and to gain a positive trade balance
- Offering trade information services and facilities in order to eliminate unnecessary official producers
- Designing and implementing legislations and regulations for trade activities and developing mutual and regional cooperation with other countries
- Providing facilities and supports for export development and enhancing quality of products and services



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نمبر :	۰۵۶ - ۳۲۴۰۰۵۹۰