

# Lemon Peel Profile

## Also known as

Citrus limon, Lemon, and Limon.

## Introduction

Lemon peel is the familiar cut and dried yellow outer layer of the lemon. Although orange peel is more commonly prescribed in traditional Chinese and Ayurvedic medicine, lemon peel also stimulates the appetite by encouraging the release of gastric juices to digest food, and helps provide vitamin C. Lemon peel is added to scores of herbal teas and herbal formulas for aroma and taste enhancement.

## Constituents

Limonene and at least 45 other antioxidant flavonoids, pectin, vitamin C.

## Parts Used

Dried peel.

## Typical Preparations

Teas or aqueous extracts for flavor.

## Summary

Many people eat lemon peel. A recent study in Arizona found that the regular consumption of lemon peel greatly reduced the risk of skin cancer caused by sun exposure. Lemon peel also provides citrus bioflavonoids that help stabilize capillaries, helping to heal varicose veins, bloodshot eyes, and hemorrhoids (when the lemon peel is used to make a tea that is drunk).

## Precautions

If you also use St. John's wort or take a blood pressure medicine in the ACE inhibitor class (in the United States, this is most often lisinopril), be sure to take precautions to prevent sunburn.

**Botanical: Citrus Limonum (RISSO.)**

**Family: N.O. Rutaceae**

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---**Synonyms**---Citrus medica. Citrus Limonum. Citronnier. Neemoo. Leemoo. Limoun. Limone.

---**Parts Used**---Rind, juice, oil.

---**Habitat**---Indigenous to Northern India. Widely cultivated in Mediterranean countries.

---**Description**---The name *Limonum* is derived from the Arabic *Limun* or *Limu*, which in its turn probably comes from the Sanscrit *Nimbuka*. There are several varieties of *Citrus medica*, only differing in the character of their fruits. The principal ones are the lemon, citron or cedrat, and lime. The Bergamot is also closely related. The trees reached Europe by way of Persia or Media and were grown first in Greece and then in Italy in the second century.

The Lemon is a small, straggling tree about 11 feet high, irregularly branched, the bark varying in colour from clear grey on the trunk, green on the younger branches to a purplish colour on the twigs. The evergreen leaves are ovate-oval, about two inches long, the margin serrate with sharp spines in the axils of the stalks. The solitary, fivepetalled flowers, white inside and tinged with deep pink outside, grow on stems in the axils. The well-known fruit is an ovoid berry, about three inches long, nipple-shaped at the end, smooth, bright yellow, indented over the oil-glands, having an acid, paleyellow pulp. About forty-seven varieties are said to have been developed during the centuries of cultivation.

The finest fruits arrive wrapped separately in paper, cases of the Messina lemons containing 360, and of Murcia lemons 200. Those from Naples and Malaga are thought to be less fine. Inferior fruits, preserved in salt water, are packed in barrels. It is stated that they can be kept fresh for months if dipped in melted paraffin or varnished with shellac dissolved in alcohol.

The peel, *Limonis Cortex*, is white and spongy inside, varying much in thickness, and the yellow outer layer, formerly called the *flavedo*, has a fragrant odour and aromatic, bitter taste. Only the fresh rind is official.

Candied lemon peel may be prepared by boiling the peel in syrup and then exposing it to the air until the sugar is crystallized.

The juice, *L. succus*, is largely imported as a source of citric acid, but is mixed with that of lime and bergamot. It does not keep well, and several methods are tried for preserving it, such as covering it with a layer of almond oil, mixing with alcohol and filtering, or adding sulphur dioxide, but none appear to be very satisfactory. The juice should be pressed fresh for pharmaceutical purposes, the amount of citric acid being greatest in December and January and least in August.

In Sicily, the pulp left after the production of the volatile oil is pressed for juice in large quantities and the solid matter left is used as cattle food.

The oil, *Oleum Limonis*, is more fragrant and valuable if obtained by expression than by distillation. It is usually prepared in Sicily and Calabria, and sometimes at Nice and Mentone, where the 'Essence de Citron distillée' is prepared by rubbing fresh lemons on a coarse, tin grater, and distilling the grated peel with water. The better 'Essence de Citron au zeste' is prepared with the aid of a saucer-shaped, pewter dish with a pouring lip at one side and a closed funnel sunk from the middle. In the bottom are sharp,

strong brass pins on which the peel is rubbed. This vessel is called an *écuelle à piquer*, but a machine called *scorzetta* is gradually coming into use.

The method of expression in Sicily is that of squeezing large slices of peel against sponges fixed in the hand, the sponges when soaked being wrung into an earthen bowl with a spout, in which the oil separates from the watery liquid. The peel is afterwards pickled in brine and sold to manufacturers for candying.

The roots and wood are cut in winter. The latter takes a beautiful polish and is nicely veined.

The dried flowers and leaves are used in pharmacy in France.

The Lemon is widely used in cookery and confectionery. A thousand lemons yield between 1 and 2 lb. of oil. The immature fruit yields less and the quality is inferior.

Messina alone exported 155,000 kilos of oil in 1919.

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**---Constituents---**Lemon Peel yields its virtues to alcohol, water, or wine. It contains an essential oil and a bitter principle. Crystals of the glucoside Hesperidin are deposited by the evaporation of the white pulpy portion boiled in water. Diluted acids decompose it into Hesperitin and glucose.

*Lemon Juice* contains from 6.7 to 8.6 per cent of citric acid. It is officially described as 'a slightly turbid yellowish liquor, possessing a sharp, acid taste and grateful odour.'

It contains also sugar, gum, and a very little potash. An imitation lemon juice has been made by dissolving tartaric acid in water, adding sulphuric acid and flavouring with oil of Lemon. It is useless therapeutically.

*Oil of Lemon* is dextrogyre. It contains 7 to 8 per cent of *citral*, an aldehyde yielding geraniol upon reduction, a small amount of pinene and citronellal, etc. It is stated that citral, citronellal, and an ester of geraniol are all necessary for the true odour.

The oil is not very active, and is used chiefly for flavouring.

**---Medicinal Action and Uses---**Lemon juice is probably the best of all antiscorbutics, being almost a specific in scurvy. English ships are required by law to carry sufficient lemon or limejuice for every seaman to have an ounce daily after being ten days at sea. Its value in this direction has been stated to be due to its vitamins.

It is valuable as a cooling drink in fevers, and for allaying thirst. When unobtainable, a solution of 8 drachms of crystallized citric acid in 16 OZ. of water, flavoured with oil of lemon, may be substituted.

The juice may be used in diaphoretic and diuretic draughts. It is highly recommended in acute rheumatism, and is sometimes given to counteract narcotic poisons, especially opium.

Locally, it is a good astringent, whether as a gargle in sore throat, in pruritis of the scrotum, in uterine haemorrhage after delivery, or as a lotion in sunburn. It is said to be the best cure for severe, obstinate hiccough, and is helpful in jaundice and hysterical palpitation of the heart. The decoction has been found to be a good antiperiodic, useful as a substitute for quinine in malarial conditions, or for reducing the temperature in typhoid.

It is probable that the lemon is the most valuable of all fruit for preserving health.

The *oil*, externally, is a strong rubefacient, and taken internally in small doses has stimulating and carminative properties.

Preparations of the rind are used as an aromatic addition to tonics, and also the syrup of the fresh peel, and the juice.

**---Preparations and Dosages---** Fresh juice (for rheumatism), 4 to 6 fluid ounces. Oil, B.P., 3 to 5 minims. Juice, B.P., 1/2 to 4 drachms. Tincture, B.P. and U.S.P., 1/2 to 1 drachm. Syrup, B.P., 1/2 to 4 drachms.

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**---Substitutes and Adulterations---** The most dangerous adulterant of the oil is *citrene*, the terpene left after extracting citral from oil of lemon which has been used in making terpeneless oil.

Fixed oils, alcohol, and purified oil of turpentine are sometimes found, the last causing a terebinthinate odour if evaporated from heated paper.

The pure oil should show scarcely any *pinene*.

Artificial lemon juice should not be used as an antiscorbutic.

**---Other Species---**

Lime juice, the product of *C. medica acida*, is recognized by the National Formulary under the name of *Succus Citri*.

Cedrat Lemon, or *C. medica cedra*, yields the essential oils of citron and cedra used in perfumery.

*Lippia citriodora*, yielding verbena oil, is commonly known as Lemon Verbena.

Java Lemon is *C. Javanica*. Median Lemon is a variety of *C. medica*. Pear Lemon is a variety of *C. Limetta*. Pearl Lemon is *C. margarita*. Sweet Lemon is *C. Lumia*. Water Lemon is *Passiflora laurifolia*. Wild Lemon or Ground Lemon is *Podophyllum peltatum*. Lemon Yellow is the name of Chrome Yellow, a neutral lead-chromate.