

Fennel Seed (*Foeniculum vulgare*)

Common Name: Fennel fruit.

Location: This herb's origins are believed to be in the Mediterranean.

Description: The seeds of this herb are used medicinally.

Properties: Fennel Seed is known to be a diuretic, pain reducer, antispasmodic and fever reducer.

Uses: This herb can be used to stimulate menstruation, milk production, to treat asthma, coughs, tuberculosis, bronchitis, Crohn's disease, indigestion, colic, food poisoning, dermatitis and conjunctivitis.

Doses: This herb can be found in tea and essential oil form.

Warnings: If you are pregnant, have a history of alcoholism, liver disease, hepatitis, or have diabetes you shouldn't take this herb in large doses.

Fennel Seed and Powder Profile

Also known as

Foeniculum vulgare and *Anethum Foeniculum*, Bari-Sanuf, Bitter Fennel, Carosella, Common Fennel, Fennel Oil, Fennel Seed, Finnochio, Florence Fennel, *Foeniculi Antheroleum*, *Foeniculum Officinale*, *Foeniculum Capillaceum*, Garden Fennel, Large Fennel, Sanuf, Shatapuspha, Sweet Fennel, Wild Fennel.

Introduction

Fennel's name comes from the Latin *foeniculum*, meaning "little hay". The Roman historian Pliny recorded that when snakes shed their skins, they ate fennel to restore their sight (although he did not record how he made this observation). Pliny's observation led to the popular use in Europe of a cooled tea of fennel seed which was used as a wash for eyestrain and eye irritations. Chinese and Hindus employed fennel seed as a treatment for snakebite and Medieval Europeans used fennel seed as a treatment for obesity. Several liquors are flavored with fennel, including aquavit, gin, absinthe and fennouillete. All the above-ground parts of the fennel plant are edible. Fennel "seeds" are actually whole fruits, the most aromatic seeds found in the center of the seed head. In seed, a bright green color indicates quality. The herb should be stored in a tightly closed container in a cool, dry place.

Constituents

The essential oil contains anethole (50 to 80%), limonene (5%), fenchone (5%), estragole (methylchavicol), safrole, α -pinene (0.5%), camphene, β -pinene, β -myrcene and p -cymene. The seed also contains fiber and complex carbohydrates.

Parts Used

The "fruit" or seed dried and used whole or ground.

Typical Preparations

Used in cooking whole or ground as an excellent spice, also used to make herbal teas and in laxative preparations. Combined with chamomile and/or melissa in teas for colic. Combined with licorice, thyme, and/or poplar buds to treat colds, coughs, and congestion. Combined with chamomile, saffron, anise, fennel, caraway, licorice, and cardamom to treat asthma. For convenience, or if you do not like the flavor, it may be taken as an extract or capsule.

Summary

Fennel seed is antiseptic and secretolytic, that is, encouraging secretion of saliva and gastric juices. It also stops stomach cramps, often added to laxatives to ensure gentle action. Fennel seed teas break up congestion caused by colds and allergies. There are preliminary studies that suggest that regular consumption of fennel (as well as regular consumption of green beans, mushrooms, oranges, prunes, and celeriac) might slow the progression of osteoporosis. Fennel seed powder has almost exactly the same taste and medicinal effect as whole fennel seed, except it tends to lose anethole. Powdering makes fennel a less estrogenic herb, that is, less likely to stimulate the production of estrogen in women, a characteristic that may be desirable or undesirable depending on the user.

Precautions

Fennel seed teas are helpful for colicky infants, but fennel seed oil should never be given to infants or young children because of the danger of spasms of the throat.

Botanical: *Foeniculum vulgare* (GÆRT.)

Family: N.O. Umbelliferae

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---**Synonyms**---Fenkel. Sweet Fennel. Wild Fennel.

---**Parts Used**---Seeds, leaves, roots.

---**Habitat**---Fennel, a hardy, perennial, umbelliferous herb, with yellow flowers and feathery leaves, grows wild in most parts of temperate Europe, but is generally considered indigenous to the shores of the Mediterranean, whence it spreads eastwards to India. It has followed civilization, especially where Italians have colonized, and may be found growing wild in many parts of the world upon dry soils near the sea-coast and upon river-banks. It flourishes particularly on limestone soils and is now naturalized in some parts of this country, being found from North Wales southward and eastward to Kent, being most frequent in Devon and Cornwall and on chalk cliffs near the sea. It is often found in chalky districts inland in a semi-wild state.

For the medicinal use of its fruits, commonly called seeds, Fennel is largely cultivated in the south of

France, Saxony, Galicia, and Russia, as well as in India and Persia.

This plant was attached by Linnaeus to the genus *Anethum*, but was separated from it by De Candolle and placed with three or four others in a new genus styled *Foeniculum*, which has been generally adopted by botanists. (*Foeniculum* was the name given to this plant by the Romans, and is derived from the Latin word, *foenum* = hay).

This was corrupted in the Middle Ages into *Fanculum*, and this gave birth to its alternative popular name, 'fenkel.'

The *Anethum Foeniculum* of Linnaeus embraced two varieties, the Common or Wild Fennel and the Sweet Fennel. These are considered by De Candolle as distinct species named respectively *F. vulgare* (Gaertn.) - the garden form of which is often named *F. Capillaceum* (Gilibert) - and *F. dulce*.



Fennel

(*Foeniculum vulgare* GÆRT.)

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---**History**---Fennel was well known to the Ancients and was cultivated by the ancient Romans for its aromatic fruits and succulent, edible shoots.

Pliny had much faith in its medicinal properties, according no less than twenty-two remedies to it, observing also that serpents eat it 'when they cast their old skins, and they sharpen their sight with the juice by rubbing against the plant.' A very old English rhyming Herbal, preserved at Stockholm, gives the following description of the virtue of the plant:

'Whaune the heddere (adder) is hurt in eye
Ye red fenel is hys prey,
And yif he mowe it fynde
Wonderly he doth hys kynde.
He schall it chow wonderly,
And leyn it to hys eye kindlely,
Ye jows shall sang and hely ye eye
Yat befor was sicke et feye.'

Many of the older herbalists uphold this theory of the peculiarly strengthening effect of this herb on the sight.

Longfellow alludes to this virtue in the plant:

'Above the lower plants it towers,
The Fennel with its yellow flowers;
And in an earlier age than ours
Was gifted with the wondrous powers
Lost vision to restore.'

In mediaeval times, Fennel was employed, together with St. John's Wort and other herbs, as a preventative of witchcraft and other evil influences, being hung over doors on Midsummer's Eve to warn off evil spirits. It was likewise eaten as a condiment to the salt fish so much consumed by our forefathers during Lent. Like several other umbelliferae, it is carminative.

Though the Romans valued the young shoots as a vegetable, it is not certain whether it was cultivated in northern Europe at that time, but it is frequently mentioned in Anglo-Saxon cookery and medical recipes prior to the Norman Conquest. Fennel shoots, Fennel water and Fennel seed are all mentioned in an ancient record of Spanish agriculture dating A.D. 961. The diffusion of the plant in Central Europe was stimulated by Charlemagne, who enjoined its cultivation on the imperial farms.

It is mentioned in Gerard (1597), and Parkinson (*Theatricum Botanicum*, 1640) tells us that its culinary use was derived from Italy, for he says:

'The leaves, seede and rootes are both for meate and medicine; the Italians especially doe much delight in the use thereof, and therefore transplant and whiten it, to make it more tender to please the taste, which being sweete and somewhat hot helpeth to digest the crude qualitie of fish and other viscous meats. We use it to lay upon fish or to boyle it therewith and with divers other things, as also the seeds in bread and other things.'

William Coles, in *Nature's Paradise* (1650) affirms that -

'both the seeds, leaves and root of our Garden Fennel are much used in drinks and broths for those that are grown fat, to abate their unwieldiness and cause them to grow more gaunt and lank.'

The ancient Greek name of the herb, *Marathron*, from *maraino*, to grow thin, probably refers to this property.

It was said to convey longevity, and to give strength and courage.

There are many references to Fennel in poetry. Milton, in *Paradise Lost* alludes to the aroma of the plant:

'A savoury odour blown,
Grateful to appetite, more pleased my sense
Than smell of sweetest Fennel.'

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---Description---Fennel is a beautiful plant. It has a thick, perennial root-stock, stout stems, 4 to 5 feet or more in height, erect and cylindrical, bright green and so smooth as to seem polished, much branched bearing leaves cut into the very finest of segments. The bright golden flowers, produced in large, flat terminal umbels, with from thirteen to twenty rays, are in bloom in July and August.

In the kitchen garden this naturally ornamental, graceful plant, generally has its stems cut down to secure a constant crop of green leaves for flavouring and garnishing, so that the plant is seldom seen in the same perfection as in the wild state. In the original wild condition, it is variable as to size, habit, shape and colour of leaf, number of rays in the flower-head or umbel, and shape of fruit, but it has been under cultivation for so long that there are now several well-marked species. The Common Garden Fennel (*F. Capillaceum* or *officinale*) is distinguished from its wild relative (*F. vulgare*) by having much stouter, taller, tubular and larger stems, and less divided leaves, but the chief distinction is that the leaf-stalks form a curved sheath around the stem, often even as far as the base of the leaf above. The flower-stalks, or pedicels, of the umbels are also sturdier, and the fruits, 1/4 to 1/2 inch long, are double the size of the wild ones.

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---Cultivation---Fennel will thrive anywhere, and a plantation will last for years. It is easily propagated by seeds, sown early in April in ordinary soil. It likes plenty of sun and is adapted to dry and sunny

situations, not needing heavily manured ground, though it will yield more on rich stiff soil. From 4 1/2 to 5 lb. of seed are sown per acre, either in drills, 15 inches apart, lightly, just covered with soil and the plants afterwards thinned to a similar distance, or sown thinly in a bed and transplanted when large enough. The fruit is heavy and a crop of 15 cwt. per acre is an average yield.

The *roots* of Fennel were formerly employed in medicine, but are generally inferior in virtues to the fruit, which is now the only portion recognized by any of the Pharmacopoeias.

The cessation of the supply of Fennel fruits from the Continent during the War led to its being grown more extensively here, any crop produced being almost certain to sell well.

There are several varieties of Fennel fruit known in commerce - sweet or Roman Fennel, German or Saxon Fennel, wild or bitter Fennel, Galician Russian and Roumanian Fennel, Indian, Persian and Japanese. The fruits vary very much in length, breadth, taste and other characters, and are of very different commercial value.

The most esteemed Fennel fruit vary from three to five lines in length, are elliptical, slightly curved, somewhat obtuse at the ends and pale greyish green in colour. *Wild* fruits are short, dark coloured and blunt at their ends, and have a less agreeable flavour and odour than those of sweet Fennel - they are not official.

Fennel fruits are frequently distinguished into 'shorts' and 'longs' in commerce, the latter being the most valued.

The odour of Fennel seed is fragrant, its taste, warm, sweet and agreeably aromatic. It yields its virtues to hot water, but more freely to alcohol. The essential oil may be separated by distillation with water.

For medicinal use, the fruits of the cultivated Fennel, especially those grown in Saxony, are alone official, as they yield the most volatile oil. Saxon fruits are greenish to yellowish-brown in colour, oblong, smaller and straighter than the French or Sweet Fennel (*F. dulce*). This French Fennel, known also as Roman Fennel, is distinguished by its greater length, more oblong form, yellowish-green colour and sweet taste; its anise-like odour is also stronger. It is cultivated in the neighbourhood of Nimes, in the south of France, but yields comparatively little oil, which has no value medicinally.

Indian Fennel is brownish, usually smaller, straighter and not quite so rounded at the ends with a sweet anise taste. Persian and Japanese fennel, pale greenish brown in colour, are the smallest and have a sweeter, still more strongly anise taste and an odour intermediate between that of French and Saxon.

The Saxon, Galician, Roumanian and Russian varieties all yield 4 to 5 per cent of volatile oil, and these varieties are alone suitable for pharmaceutical use. In the ordinary way they furnish some of the best Fennel crops, and from their fruit a large portion of the oil of commerce is derived.

For family use, 1/2 oz. of seed will produce an ample supply of plants and for several years, either from the established roots, or by re-seeding. Unless seed is needed for household or sowing purposes, the flower stems should be cut as soon as they appear.

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---**Adulteration**---Commercial Fennel varies greatly in quality, this being either due to lack of care in harvesting, or deliberate adulteration. It may contain so much sand, dirt, stem tissues, weed seeds or other material, that it amounts to adulteration and is unfit for medicinal use, or it may have had some of its oil removed by distillation.

Fruits exhausted by water or steam are darker, contain less oil and sink at once in water, but those

exhausted by alcohol still retain 1 to 2 per cent, and are but little altered in appearance, they acquire, however, a peculiar fusel oil odour.

Exhausted, or otherwise inferior fennel is occasionally improved in appearance by the use of a factitious colouring, but old exhausted fruits that have been re-coloured may be detected by rubbing the fruit between the hands, when the colour will come off.

---Constituents---As found in commerce, oil Fennel is not uniform.

The best varieties of Fennel yield from 4 to 5 per cent of volatile oil (sp. gr. 0.960 to 0.930), the principal constituents of which are Anethol (50 to 60 per cent) and Fenchone (18 to 22 per cent). Anethol is also the chief constituent of Anise oil.

Fenchone is a colourless liquid possessing a pungent, camphoraceous odour and taste, and when present gives the disagreeable bitter taste to many of the commercial oils. It probably contributes materially to the medicinal properties of the oil, hence only such varieties of Fennel as contain a good proportion of fenchone are suitable for medicinal use.

There are also present in oil of Fennel, *d*-pinene, phellandrine, anisic acid and anisic aldehyde. Schimmel mentions limonene as also at times present as a constituent.

There is reason to believe that much of the commercial oil is adulterated with oil from which the anethol or crystalline constituent has been separated. Good oil will contain as much as 60 per cent.

Saxon Fennel yields 4.7 per cent of volatile oil, containing 22 per cent of fenchone.

Russian, Galician and Roumanian, which closely resembles one another, yield 4 to 5 per cent of volatile oil, of which about 18 per cent is fenchone. They have a camphoraceous taste.

French sweet or Roman Fennel yields only 2.1 per cent. of oil, containing much less anethol and with a milder and sweeter taste, probably due to the entire absence of the bitter fenchone.

French bitter Fennel oil differs considerably, anethol being only present in traces. The oil (*Essence de Fenouil amer*) is distilled from the entire herb, collected in the south of France, where the plant grows without cultivation.

Indian Fennel yields only 0.72 per cent of oil, containing only 6.7 per cent of fenchone.

Japanese Fennel yields 2.7 per cent of oil, containing 10.2 of fenchone and 75 per cent of anethol.

Sicilian Fennel oil is yielded from *F. piperitum*.

It was formerly the practice to boil Fennel with all fish, and it was mainly cultivated in kitchen gardens for this purpose. Its leaves are served nowadays with salmon, to correct its oily indigestibility, and are also put into sauce, in the same way as parsley, to be eaten with boiled mackerel.

The seeds are also used for flavouring and the carminative oil that is distilled from them, which has a sweetish aromatic odour and flavour, is employed in the making of cordials and liqueurs, and is also used in perfumery and for scenting soaps. A pound of oil is the usual yield of 500 lb. of the seed.

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---Medicinal Action and Uses---On account of its aromatic and carminative properties, Fennel fruit is chiefly used *medicinally* with purgatives to allay their tendency to griping and for this purpose forms one of the ingredients of the well-known compound Liquorice Powder. Fennel water has properties similar to those of anise and dill water: mixed with sodium bicarbonate and syrup, these waters constitute the domestic 'Gripe Water,' used to correct the flatulence of infants. Volatile oil of Fennel has

these properties in concentration.

Fennel tea, formerly also employed as a carminative, is made by pouring half a pint of boiling water on a teaspoonful of bruised Fennel seeds.

Syrup prepared from Fennel juice was formerly given for chronic coughs.

Fennel is also largely used for cattle condiments.

It is one of the plants which is said to be disliked by fleas, and powdered Fennel has the effect of driving away fleas from kennels and stables. The plant gives off ozone most readily.

Culpepper says:

'One good old custom is not yet left off, viz., to boil fennel with fish, for it consumes the phlegmatic humour which fish most plentifully afford and annoy the body with, though few that use it know wherefore they do it. It benefits this way, because it is a herb of Mercury, and under Virgo, and therefore bears antipathy to Pisces. Fennel expels wind, provokes urine, and eases the pains of the stone, and helps to break it. The leaves or seed boiled in barley water and drunk, are good for nurses, to increase their milk and make it more wholesome for the child. The leaves, or rather the seeds, boiled in water, stayeth the hiccup and taketh away nausea or inclination to sickness. The seed and the roots much more help to open obstructions of the liver, spleen, and gall, and thereby relieve the painful and windy swellings of the spleen, and the yellow jaundice, as also the gout and cramp. The seed is of good use in medicines for shortness of breath and wheezing, by stoppings of the lungs. The roots are of most use in physic, drinks and broths, that are taken to cleanse the blood, to open obstructions of the liver, to provoke urine, and amend the ill colour of the face after sickness, and to cause a good habit through the body; both leaves, seeds, and roots thereof, are much used in drink, or broth, to make people more lean that are too fat. A decoction of the leaves and root is good for serpent bites, and to neutralize vegetable poison, as mushrooms, etc.'

'In warm climates,' says Mattioli, 'the stems are cut and there exudes a resinous liquid, which is collected under the name of Fennel Gum.'

In Italy and France, the tender leaves are often used for garnishes and to add flavour to salads, and are also added, finely chopped, to sauces served with puddings. Roman bakers are said to put the herb under their loaves in the oven to make the bread taste agreeably.

The tender stems are employed in soups in Italy, though are more frequently eaten raw as a salad. John Evelyn, in his *Acetaria* (1680), held that the peeled stalks, soft and white, of the cultivated garden Fennel, when dressed like celery exercised a pleasant action conducive to sleep. The Italians eat these peeled stems, which they call 'Cartucci' as a salad, cutting them when the plant is about to bloom and serving with a dressing of vinegar and pepper.

Formerly poor people used to eat Fennel to satisfy the cravings of hunger on fast days and make unsavoury food palatable; it was also used in large quantities in the households of the rich, as may be seen by the record in the accounts of Edward I.'s household, 8 1/2 lb. of Fennel were bought for one month's supply.

---Preparations---Fluid extract, 5 to 30 drops. Oil, 1 to 5 drops. Water, B.P. and U.S.P., 4 drachms.