



## A review on therapeutic use of essential oils from traditional herbal plants

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### Abstract

From the beginning of time, human beings have lived in a symbiotic relationship with plants. Plants provide food, clothing, shelter, fire, smoke, scents and remedies for healing. Herbal medicine and the use of plant essences for healing, currently undergoing a revival, are not merely fad. Instead, this is an expression of a growing disillusionment with chemical drugs and their many side-effects. We are bestowed with a wide variety of fauna and flora in our country. Selecting herbal medicines means we choose to be helped by nature, of which we are a part. The advocate of all types of healing arts must admit that it is nature that heals. Essential oils are volatile substances obtained from aromatic plants. They contain a large number of medicinal substances, which is why the spectrum of their therapeutic applications is so broad. This article deals with the therapeutic use of essential oils obtained from traditional herbal plants.

**Keywords:** essential oils, traditional herbal plants, therapeutic use

### Introduction

The medical science of earlier ages was founded on wisdom, knowledge and experience. Today it is primarily a sum of highly specialised skills. Essential oils or aromatic plant essences are volatile, fragrant substances with an oily consistency which plants produce. They can be more or less fluid, are sometimes resinous, and often have a colouring which ranges from pale yellow to emerald green and from blue to dark brownish red. With a few exceptions, they are lighter than water and have a density between 0.75 and 0.98g/cm<sup>3</sup>. They are different from solid and liquid fatty substances because of their volatility, which increases with rising temperatures: the oily mark left by an essential oil on paper will quickly evaporate, leaving no trace. Accordingly, essential oils rapidly change from a liquid to a gaseous state; they are easily inflammable and burn with a brilliant flame. One of their physical properties is called diathermy, which means that the energy potential of an essential oil in gaseous form is increased by light passing through it since the oil retains the caloric energy of the light.

Most plants contain essential oils, but often in such minimal concentrations that either extraction would not be worth the effort or the price of the essential oil would be too high. Only the so-called aromatic plants produce essential oil in sufficient quantities. These types of plants mainly belong to the labiatae family (lavender, thyme, savory, sage, mint), the umbelliferae family (caraway, anise, fennel), the myrtaceae family (eucalyptus, cajeput, niaouli), the conifer family (pine, cedar, cypress, juniper), the rutaceae family (lemon, orange, bergamot) and the laurel family (cinnamon, borneol, saffras). Essential oils are principally contained in the flowers and leaves of plants, but are also found in their wood, fruit and peels, bark, seeds and roots. The essential oils are formed with the help of solar energy acting on the aromatic plants' secretory cells. The plant keeps it in tiny glandular

pockets which burst open, for example, when a leaf is rubbed. This is how their aromas are released. The difference between aromatic and non-aromatic plants can be determined in this simple manner. Essential oils are soluble in alcohol, ether and oils, but practically insoluble in water and then only dispersible with the aid of emulsifiers.

### Extraction

Most essential oils are extracted from the plants by steam distillation. (It would be more correct to call the common procedure "steam passage" rather than distillation). The following factors should be observed for distillation:

- The optimal time of harvest for the plant
- The treatment of the plants before distillation
- The correct distillation time in order to obtain the best yield
- The correct pressure/temperature ratio in the distilling kettle

The essential oils of some plants, such as cloves and the peels of citrus fruit, can be extracted easily. It is common to extract the essential oils of citrus fruit, for example, with a special technique in which the fruit peels were scraped and the oil collected with a sponge.

Tapping is another method used on some trees, like the commiphora tree (for myrrh), the laurel of Guyana or the camphor tree of Borneo (for borneol).

Another method is to use heat to separate various essential oils from raw resin. For example, turpentine is separated from pine resin in this manner. There are also other methods of extraction which in certain cases make it easier to obtain the essential oil or greatly increase its yield. However, this may be detrimental to the essence's quality. For instance, the plants are immersed in chemical solvents in order to obtain the volatile substances. The essential oils extracted in this manner

are intimately mixed with the solvent, from which they must be separated afterwards by either fractionated distillation or some other technique. But this never shows satisfactory results: traces of solvents (hexane, acetone, methanol, isopropanol, or chloric solvents) always remain in the essential oils made in this manner. The "enfleurage" method is similar. A fatty substance is used to absorb the essential oil, which is then separated from the substance. This method is suitable for cosmetic products since the fats loaded with essential oils can be processed into ointments, creams, and the like. Essential oils extracted with the help of solvents are not to be used for therapeutic or hygiene purposes. Before you buy essential oils, ask your supplier about the production methods for the respective oils, particularly when they are from low-yield plants.

### Traditional herbal plants containing essential oils

The traditional herbal plants from which the essential oils are obtained includes

#### Holy Basil



Fig 1

**Botanical name** – *Ocimum tenuiflorum*.

**Family** – Lamiaceae/Labiatae

**Parts used** – Whole plant

**Main components:** Methylchavicol, cineole, l-linalool, eugenol.

**Properties:** Soothes cramps, sedative for the nervous system; anti-inflammatory, analgesic, lowers blood congestion in the veins, protects against infections, bacterial and viral diseases.

**Indications:** asthenia, depression, anxiety, nervous disorders, weakness of the suprarenal cortex, stomach cramps, viral hepatitis, rheumatic polyarthritis.

#### Carrot



Fig 2

**Botanical name** - *Daucus carota* L.

**Family** – Apiaceae.

**Parts used** - Flowes and leaves

**Main Components:** carotol, daucol, bisabolene, l-carotene

**Properties:** regenerative for the liver and gallbladder, regulates intestines against diarrhoea, stimulant, tonic for nerves, blood purifier, promotes breast-milk production, has rejuvenating effect on skin, against wrinkles.

**Indications:** liver-gallbladder complaints, high cholesterol, breathing complaints, asthenia, uraemia, kidney inflammation, skin diseases, little broken veins, eczema, pus-infected fingers.

#### Cedar



Fig 3

**Botanical name** - *Cedrus deodara* (Roxb.) G.Don.

**Family** – Pinaceae.

**Part used** – Wood.

**Main components:** cedrol, l-alpha-pinene, himachalene, cadinene, aliphatic aldehyde, atlantol, alpha- and beta-atlantone, formic acid.

**Properties:** antiseptic for respiratory and urinary tract, supports wound-healing, aphrodisiac.

**Indications:** urethritis, cystitis, bronchitis, disorders of lymphatic system, sexual asthenia, ailments of scalp, skin diseases.

#### Cinnamon



Fig 4

**Botanical name** - *Cinnamomum verum* J.Presl.

**Family** – Lauraceae

**Part used** - bark

**Main components:** cinnamaldehyde, eugenol, furfural, l-alpha-pinene, pcymentene, l-phellandrene, l-linalool, amyl ketone.

**Properties:** stimulates heart circulation and respiratory tract, carminative, antispasmodic, antiseptic, haemostatic, important remedy against infections from bacteria, viruses and fungi, promotes menstruation, aphrodisiac.

**Indications:** circulatory disturbances, vein blockage, lung and cardiac insufficiency, physical and sexual asthenia, pyorrhoea, digestive cramps, intestinal infections, amoebic dysentery, tropical fever, diarrhoea, dysentery, spasmic bladder inflammation, ailments brought on by colibacteria, intestinal parasites, leucorrhoea, amenorrhoea.

### Clove



Fig 5

**Botanical name** – *Syzygium aromaticum* (L.) Merrill & Perry.

**Family** – Myrtaceae

**Parts used** – Flower bud

**Main components:** eugenol, methyl eugenol, caryophyllene, alpha methyl furfural, vanillin.

**Properties:** strong appetite stimulant, anti-spasmodic, aphrodisiac, nerve tonic, analgesic, strong antiseptic, bronchial diseases, intestinal disturbances, lowers blood pressure, fights against infection in tooth area and regeneration of gums.

**Indications:** stomach slackness, bacterial colitis, amoebic dysentery, viral intestinal inflammation and enterospasms, viral hepatitis, malaria, shingles, viral nerve inflammation; tooth neuralgia, tooth inflammation, complaints in throat-nose-ear region, bladder inflammation, physical and mental asthenia, rheumatic polyarthritis and eases birth.

### Cumin



Fig 6

**Botanical name** - *Cuminum cyminum* L.

**Family** - Apiaceae

**Part used** – Fruit

**Main components:** cuminol, pinene, terpineol, beta-caryophyllene, cumin aldehyde.

**Properties:** strengthens stomach, stimulates appetite, carminative, diuretic, antiseptic, analgesic, promotes menstruation and breast-milk production, relaxant for smooth (vegetative) musculature.

**Indications:** stomach pain, hepatitis, mumps, arthritis, rheumatism, insomnia, for breast-feeding, amenorrhoea, (nightly) muscle cramps

### Garlic



Fig 7

**Botanical name** - *Allium sativum* L.

**Family** – Liliaceae

**Part used** - Clove

**Main components:** diallyl sulphide, allacin, allisatin.

**Properties:** antiseptic, ailments of respiratory tract, circulatory disorders, diseases of urinary tract, dropsy and over-Weight, derivant, increases muscle tone, lowers blood pressure, vermifuge.

**Indications:** infectious diseases, influenza, chronic bronchitis, tuberculosis, asthma, whooping cough, runny nose, high blood pressure, vascular cramps, varicose veins, haemorrhoids, formation of urinary stones, gout, insufficient urinary excretion, oedema, intestinal parasites.

### Ginger



Fig 8

**Botanical name** - *Zingiber officinalis* Roscoe

**Family** -Zingiberaceae

**Part used** – Root

**Main components:** zingiberone, d-phellandrene, gingerol, cineole, isoborneol, citral.

**Properties:** stimulates digestion and respiratory organs, blood purifier, febrifuge, analgesic against rheumatism, aphrodisiac; fights against scurvy, antiseptic, good for the eyes, aromatic hydrolate (ginger water).

**Indications:** digestive complaints, constipation, chronic bronchitis, impotence, tooth neuralgia, rheumatism

### Jatamansi



Fig 9

**Botanical name -** *Nardostachys jatamansi* (D.Don) Dc

**Family –**Caprifoliaceae

**Part used -** Root

**Main components:** dihydroazulene, valerianol, valerianal, valeranine, nardostachone, jataminsinic acid, jatamansone.

### Properties

Analgesic, sedative for nerves (nerve plexus), vein tonic.

### Indications

Tachycardia, nervous disorders, varicose veins, haemorrhoids, psoriasis.

### Lemon



Fig 10

**Botanical name -** *Citrus limon* (L.) osbeck.

**Family –**Rutaceae

**Part used –** Peel/fruitpeel.

**Main components:** limonene, beta-pinen, gamma-terpinene.

**Properties:** stimulant, strengthens heart and sympathetic nervous system, strengthens stomach, carminative, promotes urination, antiseptic and antibacterial, thins blood, act against rheumatism, fights against sclerosis, vascular tonic, lowers blood pressure, promotes liver activity.

**Indications:** infectious diseases, digestive complaints, hyper acidity (too much acid in stomach), liver insufficiency, rheumatism, gout, vascular weakness, phlebitis, arteriosclerosis, high blood pressure, calcium deficiency, brittle nails, skin parasites, intestinal worms, malaria.

### Mint



Fig 11

**Botanical name –** *Mentha arvensis* L.

**Family –** Lamiaceae

**Part used –** whole plant

**Main components:** menthol, menthone, limonene, alpha-caryophyllene.

**Properties:** In weaker doses strengthens digestion and heart, in stronger doses stimulating and then sedating, analgesic, promotes bile production and drainage of gallbladder, acts against circulatory disorders in head, antibacterial (staphylococci, meningococci) and anti-parasite.

**Indications:** Nervous and digestive disturbances, stomach ulcers, liver and kidney colics, constipation, migraines, neuralgia, sciatica, rhino pharyngitis, sinusitis, worm diseases.

### Nutmeg



Fig 12

**Botanical name -** *Myristica fragrans* Houtt.

**Family –** Myristicaceae

**Part used -** nut

**Main components:** alpha-beta-pinene, sabinene, myrcene, alpha-gammaterpinene, limonene, myristicine, camphene, p-cymene, d-linalool. Borneo Camphor, geraniol, elemicine, safrol

**Properties:** general remedy for energy-strengthening and stimulating, especially for brain and circulation, strengthens stomach, stimulates appetite, promotes digestion, speeds up passage of food, promotes menstruation, acts against infections, antiseptic, analgesic, anaesthetic, muscle tonic, lowers blood pressure, sedative, anti-depressant, against rheumatism, against parasites.

**Indications:** general atony (brain, nerves, circulation, digestion, Intestines, musculature), physical and mental asthenia, nervous depression, flatulence, spasmic and infectious enterocolitis, diarrhoea, intestinal parasites, acute and chronic rheumatism, muscle cramps, sprains, paralysis, eases birth, dental neuralgia, bad breath, skin parasites.

### Onion



Fig 13

**Biological name -** *Allium cepa* L.

**Family -** Liliaceae

**Part used -** bulb

**Properties:** antiseptic against infection, slows bacterial multiplication, lowers blood sugar, strongly diuretic, helps eliminate urine and chloride, general stimulant for nervous system; promotes bile production and drainage of gallbladder, relieves coughs, reduces blood congestion in pelvic region, regulates glandular function, against sclerosis, promotes hair growth, aphrodisiac.

**Indications:** infection of respiratory tract, cardiac insufficiency, pericarditis, arteriosclerosis, physical and mental asthenia, infectious colitis, diabetes, corpulence, plethora, prostate inflammation, insufficient urination, oedema, rheumatism, arthritis, gout, intestinal parasites, abscess, boils, panaritium (pus-infected fingers)

### Pepper



Fig 14

**Botanical name -** *Piper nigrum* L.

**Family -** Piperaceae

**Part used -** fruit

**Main components:** beta-caryophyllene, alpha-humulene, alpha-gujene, selinene, cubebene, elemene, bisabolene, alpha-beta-pinene, phellandrene, piperonal, Borneo Camphor, chavicol

**Properties:** stimulates digestive and respiratory tract, expectorant, relieves coughs, carminative, analgesic, antiseptic for urinary tract and aphrodisiac.

**Indications:** improves digestion, insufficiency of liver, pancreas and intestines, angina, larynx inflammation, chronic bronchitis, bladder inflammation, dental neuralgia, rheumatic pain, cerebral and sexual asthenia.

### Rose



Fig 15

**Botanical name -** *Rosa damasceana* Herrm.

**Family -** Rosaceae

**Part used -** flower

**Main components:** phenylethyl alcohol, geraniol, citronellal, nerol, rhodinol.

**Properties:** tonic for heart, stomach, liver, and uterus, astringent, expectorant, mild laxative, promotes wound healing and scar formation, haemostatic, antiseptic and anti-inflammatory, antiviral and antibacterial, sedative, strengthens nerves, aphrodisiac.

**Indications:** chronic bronchitis and angina, tuberculosis, asthma, nervousness, impotence, exhaustion, skin ailments wounds, inflammatory processes, atonic ulcers, sprains, strains, little ruptured arteries, facial wrinkles, gum inflammation.

### Turmeric



Fig 16

**Botanical name** - *Curcuma longa* L.

**Family** – Zingiberaceae

**Part used** – rhizome

**Main components:** turmerol, turmerone, curcumone, cineole, camphene, d-alpha-pinene.

**Properties:** bactericide, stimulant for liver and gallbladder promotes bile production and drainage of gallbladder, against gallstones; lowers cholesterol; against cellulitis.

**Indications:** colitis; cellulitis; worm ailments; liver-gallbladder insufficiency; high cholesterol level; skin ailments; rheumatism.

### Vetiver



Fig 17

**Botanical name** - *Chrysopogon zizanioides* (L.) Roberty

**Family** - Poaceae

**Part used** – root

**Main components:** vetiverol, vetivene, a-b-vetivone, vetivenyl acetate, vetiverone, cadinene.

**Properties:** general strengthening and stimulating (glandular system, circulation), stimulates immune system, against rheumatism, promotes menstruation, against parasites, repels insects, germicide for the air.

**Indications:** mental exhaustion, circulatory weakness, coronaritis, liver and pancreas insufficiency, immune depression, rheumatism, arthrosis, amenorrhea, infrequent menstruation, urticaria, skin parasites.

### Ylang-Ylang



Fig 18

**Botanical name** - *Cananga odorata* (Lam.) Hook.f. & Thomson.

**Family** – Annonaceae

**Part used** – flower

**Main components:** germacrene, benzyl benzoate, linalool, cadinene-alpha-farnesene, beta-caryophyllene, anisol menthyl, benzyl benzoate, cinnamyl acetate

**Properties:** anti-spasmodic, anti-inflammatory, balancing, regulating, and stimulating for the heart, lowers blood pressure, dampens excitation of reflexes, against infection of respiratory tract and genitalia, sexual stimulant

**Indications:** cardiac insufficiency, tachycardia, high blood pressure, infection of respiratory tract and genitalia, impotence, skin and hair care.

### Conclusion

Through this study it is eminent that the aromatic essential oils can be used therapeutically for healing the ailments. Every illness is an alarm signal, which means that a person is transgressing against the fundamental laws of nature. True healing can therefore occur only if biological laws are respected. This means that in order to make healing possible we must change our lifestyle and choose natural, non-toxic products and therapies.

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