



Pharmacopeia of Aromatic Herbs and Spices

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Cardamom (Elettaria cardamomum)

Part of plant used

Seeds/pods (ground, volatile oil)

Short description/Overview:

Cardamom is a widely used spice produced from the seeds of several perennial leafy plants in the Elletaria and Amomum genera, belonging to the Zingiberaceae family (that also holds ginger, turmeric and galangal). There are several cardamom plants varieties, usually named after their region of origin. It is the third most expensive spice in the world. Cardamom is used as a spice or aromatic plant in several oriental cuisines and it is included in the daily diet. In traditional medicine it has been use as a therapeutic for various conditions – mainly digestive and respiratory – in several parts of the world such as Asian, Mediterranean and even Scandinavian.

Brief Description of the therapeutic functions

Cardamom is extensively used as a therapeutic in several regions, in folk medicine to treat oral infections, teeth and gums problems, bad breath, throat sores, lung congestions, colds, flu, dyspepsia, gas, indigestion, nausea, vomiting, constipation, bloating and other digestive symptoms.

Modern herbal medicine usually uses cardamom primarily as a basis and a flavoring agent for preparations for indigestion, flatulence or respiratory infections.

List of specific therapeutic actions

Digestive: regulates digestive functions, relieves gas and bloating, treats indigestion and dyspepsia, stimulates bile production

Respiratory: clears airways (especially as aromatherapy), aids expectoration, adjuvant in colds and flu

Topical: insect repellent

Ayurvedic medicine:

Taste: spicy, sweet, pungent

Post digestive: pungent

Potency: warm

Quality: light, oily

Tissues: digestive, circulatory

Channels: digestive, respiratory

Important scientific data:

The therapeutic use of cardamom is related to its content of essential oil. Several volatile oils, summing up to 8% of the whole seed are available. Amongst them the most notable are: alpha-terpineol, limonene, menthone, cineol, sabinene and heptane.

Several studies revealed that cardamom acts both in protecting the digestive system and in regulating its activity. In vitro research showed relevant effects in indigestion, colic, gas, bloating, constipation and diarrhea.

In the respiratory system the volatile oils from cardamom act as a decongestant, clearing airways and enabling breathing. While it's not a direct therapeutic in respiratory infections and inflammations, cardamom is an effective adjuvant, clearing the pathways for other active ingredients.

In aromatherapy, cardamom oil has soothing, calming and sedative effects that can be of help in stress, anxiety, insomnia and depression.

Popular therapeutic recipes:

Immune system booster/anti-colds and flu drink:

- ½ liter water
- 4 cardamom pods
- 4 black peppercorns
- 4 cloves
- 1 cinnamon stick
- a few slices of fresh ginger

Place all ingredients in the water, heat to boiling point, and leave it covered for 20-30 minutes. Strain. Sweeten with honey. Drink 1-2 cupfuls a day.

Dosage and frequency:

- Powder: ¼ tsp for adults and 1/8 tsp for children, dissolved in a glass of warm water, sweetened (preferably with honey) 3-4 times/day
- Tincture: 10 – 20 drops 2 – 3x day in water

Cautions, Warnings and Contraindications:

Caution:

Cautious use is recommended in gastritis, ulcer and other ulcerous intestinal diseases, open wounds and ulcerations.

Warnings:

Oral overdose can lead to mild stomach and intestinal irritation.

Topical overdose of essential oil can lead to contact dermatitis.

Possible herb / drug interactions:

Cardamom is considered generally safe when following normal dosages.

Clove (Syzygium aromaticum)

Part of plant used

Flower buds (dried, powder, tincture, oil)

Short description/Overview:

Cloves are the aromatic flower buds of an evergreen tree called *Syzygium aromaticum* belonging to the Myrtaceae family. The lower buds change their color during the growth from pale to green, eventually turning pink to red when they are proper to harvest. Once harvested the flowers are dried and ready to use. Whole or powdered cloves have been used as a spice and a food preservative for centuries in several Asian countries, and in traditional cuisine. Multiple therapeutic utilizations are found mostly in the Ayurvedic, Chinese and Tibetan medicine.

Brief description of the therapeutic functions

Cloves are traditionally used in Ayurvedic and Chinese medicine, as well as in herbal medicine all over the world as a carminative that regulates the digestive system peristalsis, treats gas and bloating, as an antihelmintic, as a broncho-dilator and adjuvant in colds and flu. The essential oil is used as a topical painkiller that relieves toothache in dental medicine. Topically used it acts like a local anesthetic, stimulates peripheral circulation, relieves pain and strengthens the muscles, is antibacterial and antifungal. In aromatherapy cloves aid in decongesting the airways and lungs, and also have an anti-anxiety effect. Cloves are also used as a aromatic ingredient in several herbal and OTC supplements, along other natural ingredients with similar or additional actions.

List of specific therapeutic actions

Digestive: carminative, regulates digestive functions, relieves gas and bloating, eliminates intestinal parasites

Respiratory: clears airways, aids expectoration, adjuvant in colds and flu, decongestant

Nervous: alleviates anxiety, calms nervousness

Circulatory: stimulates peripheral circulation, anesthetizes

Topical: relieves joints and muscular pain, muscular tonic, antibacterial, antifungal

Ayurvedic medicine:

Taste: spicy, sweet, pungent

Post digestive: pungent

Potency: warm

Quality: light, oily, sharp

Tissues: blood, nerves

Channels: digestive, respiratory, circulatory

Chinese medicine:

Clove (*ding xiang*) is considered acrid, warm, and aromatic, entering the stomach, and spleen meridians being efficient in warming the middle.

Important scientific data:

Cloves have numerous active substances in composition such as: flavonoids, triterpenes, tannins, volatile oil (mainly eugenol), steroids and vitamins.

Several studies showed that a diet enriched with clove, no matter the preparation form, is effective in maintaining a healthy digestive system, regulate peristalsis, eliminate gas and fight bloating. Also, in the digestive system cloves have antiparasitic and antihelminthic effects.

The flavonoids and eugenol in the cloves have a combined action with anti-inflammatory effects both when administered orally or topically. In the oral diet, cloves showed a 15-30% reduction of inflammatory processes and systems while in topical use it not only reduces inflammation but also acts like an analgesic.

The high content in eugenol is also responsible for the clove anesthetic effect, proved in several medical studies targeting primarily tooth aches. The research feedback indicated that the maximum effect is obtained by applying clove oil directly on the painful tooth.

Incipient studies focus on the clove active ingredients and their capacity to fight cancer and stop its proliferation. There are several active ingredients with antioxidant activity that show promising results in fighting free radicals, preventing DNA damage and inhibiting mutant cell proliferation.

Popular therapeutic recipes:

Aromatic vata relieving infusion:

- 2 whole cloves
- 1 tablespoon dried basil leaves (or a couple of crushed fresh leaves)
- 1 tablespoon dried mint leaves (or a couple of crushed fresh leaves)
- ½ tablespoon cardamom powder
- 2 cups of water
- (optional) honey

Pour the hot water over the herbs. Cover and infuse for 10-15 minutes. Strain, sweeten. Drink 1/4 cup 2 – 4x day.

Tonic massage oil

- 4 tablespoon powdered clove
- 1 cup of carrier oil

Mix the powder with the oil. Infuse the mixture for minimum 24 hours. Use it on tender muscles, painful joints or just as massage oil. Avoid sensitive areas.

Dosage and frequency:

- Infusion: 2 cloves infused in a cup of hot water for 10-15 minutes, strained and optionally sweetened; ½ cup 2-3 times/day
- Tincture: 10-20 drops 2-3 times/day
- Therapeutic bath: 1 liter boiling water over 8-12 whole cloves, infused 15 minutes, strained, added to the bath water; whenever necessary for fatigue, muscular pain, anxiety.

Cautions, Warnings and Contraindications:*Caution:*

Cautious use is recommended in severe cases of chronic diseases.

Warnings:

Oral overdose can lead to stomach and intestinal irritation.

Possible herb / drug interactions:

Clove is considered generally safe when following normal dosages.

Cinnamon (Cinnamomum zeylanicum, C. verum)

Part of plant used

Bark (dried, powder, tincture, oil, essential oil)

Short description/Overview:

Cinnamon is a widely used spice produced from the inner bark of several small, evergreen trees from the genus Cinnamomum. Cinnamon is the generic name for several species of trees, all belonging to the Lauraceae family. "True cinnamon" is Cinnamomum zeylanicum, also referred to as C. verum, that comes from Sri Lanka. Many other species of cinnamon are found on the market, and frequently referred to as "cassia".

The spice was used by several ancient civilizations not only as a condiment in the daily diet but also as a food preservative, antibacterial and antifungal disinfectant, and in acute and infectious digestive and respiratory diseases.

Brief description of the therapeutic functions

Cinnamon use is reported in the folk medicine of several cultures for digestive problem such as: flatulence, dyspepsia, IBS, distension, digestive bacterial and fungal infections, indigestion, poor appetite, colic, peristaltic problems, respiratory problems such as flu, fevers, coughs, respiratory viral and bacterial infections, sinus congestion, allergies, and other conditions such as urinary infections, amenorrhea, dysmenorrhea, fungal infections. Topically applied in very low dilution it stimulates peripheral circulation and relieves joints and muscle pain.

In modern herbal medicine cinnamon is used primarily as an aromatic mixed with other therapeutic herbs with similar or complementary effects. It is also known as an herb that supports healthy blood sugar metabolism. The spice is well tolerated by the human body, with virtually no toxicity.

List of specific therapeutic actions

Digestive: regulates digestive functions, relieves gas and bloating, treats indigestion and dyspepsia, stimulates bile production, eliminates intestinal parasites

Respiratory: clears airways, aids expectoration, adjuvant in colds and flu, decongestant

Nervous: alleviates anxiety, calms nervousness

Circulatory: stimulates peripheral circulation, protects blood vessels

Reproductive: regulates menstrual flow, reduces menstrual pain

Excretory: fights urinary infections

Immune: tonic, adjuvant in viral and bacterial infections

Topical: relieves joints and muscular pain, antibacterial

Ayurvedic medicine:

Taste: spicy, sweet, pungent

Post digestive: pungent

Potency: warm

Quality: light, oily

Tissues: blood, nerves

Channels: digestive, respiratory, circulatory

Important scientific data:

Cinnamon has several active constituents that have therapeutic uses. Amongst them, the most important are: flavonoids, tannins, bitters, essential oil, and vitamins.

Cinnamon's carminative properties were demonstrated by several in vitro studies that showed considerable improvement in the digestive function, less bloating and gas and better peristaltic movements.

Cinnamon efficiency as an antibacterial agent is the subject of several in vitro studies. Researches involving *C. aromaticus* showed the potential utilization in keeping bacterial population under control and killing harmful bacteria including harmful digestive bacteria such as *E.coli* and *Candida albicans* or the antibiotic resistant bacteria such as *Staphylococcus aureus*.

Studies have shown that cinnamon is also an effective antifungal. Cinnamon showed impressive results in inhibiting aflatoxin, one of the most deadly substances to the human body that can be found in certain foods such as milk.

Due to its antibacterial and antifungal properties studies showed *C. aromaticus* potency in treating urinary tract and reproductive system infections.

One of the most important research areas is focused on cinnamon's capacity to enhance insulin potency and increase its metabolism hence allowing diabetic patients to use less insulin. Several studies showed that small amounts of cinnamon ingested with the meal can triple the insulin efficiency. Further clinical studies are needed in order to exhaustively evaluate *C. aromaticus* contribution in improving the diabetic patient lives.

Dosage and frequency:

- Tea: 1cup of hot water poured over $\frac{1}{4}$ - $\frac{1}{2}$ tsp cinnamon bark/powder, infused for 10 minutes, strained, optionally sweetened with honey; 2-3 cups/day preferably at mealtimes
- Powder: $\frac{1}{2}$ - 1 tsp consumed with food 2-3 cups/day
- Tincture: 10 – 20 drops, 2-3 times/day

Cautions, Warnings and Contraindications:

Caution:

Cautious use is recommended in severe cases of chronic diseases

Warnings:

Oral overdose can lead to mild stomach and intestinal irritation.

Contraindications:

Pregnant women and infants should avoid use unless recommended.

Possible herb / drug interactions:

Cinnamon is considered generally safe when following normal dosages.

Chamomile

Anthemis nobilis (Roman chamomile) and *Matricaria chamomila* (German chamomile)

Overview:

Chamomile is a daisy-like perennial plant belonging to the Asteraceae family and native to Europe some parts of Asia. Chamomile is one of the most popular therapeutic plants. Its medical properties were highly revered by ancient civilizations. There are several chamomile species and cultivars that have medicinal properties. However, two of them, Roman Chamomile (*Anthemis nobilis*) and German Chamomile (*Matricaria chamomile*) are the most widespread and most used.

Roman chamomile is a compact, low growing shrubby plant native to the Mediterranean region. It has feathery leaves and a daisy-like florescence that lasts from spring to autumn. Its scent, that some associate with apples, is unique and easily recognizable. Roman chamomile was used since ancient time to treat internal conditions (especially digestive) and topical problems, especially for its antiseptic, wound healing properties. The whole Roman chamomile plant contains its unique aroma, due to its essential oil.

German chamomile is an annual, herbaceous plant that spontaneously grows in various regions of Europe and Asia. Unlike Roman chamomile, in *Matricaria chamomile* only the flowers are scented. That is why various forms of preparation of the flowers were used to treat a wide range of ailments. German chamomile is less bitter, hence better tolerated for human consumption in the form of infusion or decoction.

Therapeutic Actions and Benefits:

Chamomile contains a wide variety of active ingredients: bisabolol and its derivatives with strong anti-bacterial and anti-inflammatory, flavonoids such as quercetin, apigenin with antioxidant and nervine action, fatty acids, polysaccharides and vitamins – particularly B2 that have benefic therapeutic properties. Roman and German chamomile have almost identical active constituents, but the concentration is different. German chamomile has more bisabolol and chamazulene (gives the oil the blue color) while the Roman chamomile has more fatty and phenolic acids.

Chamomile is perhaps the most widely used herbal tea in the world along with peppermint. This fact speaks to its usefulness and overall safety profile. Its effects are most pronounced at the interface of the nervous and digestive systems where it is calming to the enteric gut and will relax a nervous, crampy and irritable digestive system. Some ailments that will be improved with chamomile's combination of anti-spasmodic, anti-inflammatory functions are gastritis, colitis, stomatitis, gingivitis, and many kinds of ulcerated conditions. Its cooling nature also excellent for topical application: eczema, rashes, allergic dermatitis, and essentially any hot and damp issues anywhere. Another key aspect to this herb is its gentle but pervasive diaphoretic effect. It is an important remedy for the combination of fever, aches and pains, and irritability that accompanies the flu. It has a calming and sedative

action excellent for children or adults. Many underestimate the power of this simple benevolent herb to calm and relax the system.

Both types of chamomile are used to treat and alleviate a wide range of illnesses and symptoms such as inflammatory digestive problems, diarrhea, constipation, colic, flatulence, distension, heartburn, acidity, gastroenteritis, peptic gastritis and ulcers, colitis, IBS, hyperactivity, ADHD, teething, febrile convulsions, insomnia, nervousness, anxiety, irritability, eczema, acne, hives, rashes, dermatitis, inflammatory eye problems, catarrh, sinusitis, conjunctivitis, dysmenorrhea, mastitis, PMS, migraines, tension, menopausal symptoms, arthritis, gout, carpal tunnel syndrome, fevers, infections, sore throats, colds, flu, asthma, inflamed bladder, cystitis and urinary infections.

ROMAN CHAMOMILE (*Anthemis nobilis*)

List of specific therapeutic actions

Respiratory / ENT: helps in respiratory and ENT infections, soothes sore throat, aids in airway decongestion, relieves toothaches and earaches, soothes teething pain

Digestive: controls acidity, prevents heartburns, soothes colic, supports gastroenteritis healing, regulates peristalsis, treats constipation, treats diarrhea, relieves gastritis and ulcer related pains, prevents IBS episodes, stimulate bile production

Skin: promotes wound healing, especially in slow healing ulcerations, helps in skin infection and inflammations, alleviates eczema, rashes and dermatitis, mild on the skin, highly compatible with all skin types, helps in the treatment of broken capillaries and varicose veins, treats diaper rash

Urinary: alleviates cystitis, reduces bladder inflammation

Reproductive: regulates menstrual flow, reduces menstrual pain

Immune: has antiseptic, antibacterial and antifungal properties, relieves fever, promotes natural healing

Musculoskeletal: relieves muscular and joint pains, aids in rheumatism, relieves neuralgias, soothes sore muscles, aids in carpal tunnel and restless leg syndrome

Nervous: fights stress and anxiety, reduces nervousness, has soothing and calming properties, supports a positive, aids in sleep disorders and insomnia, helps in migraines and headaches, helps in ADHD

Energetic: has relaxing properties, soothes emotions and calms nerves, induces euphoria, supports clarity, encourages connection with the higher conscience gives peace of mind, promotes emotional balance, helps in children's hyperactivity and lack of concentration

Ayurveda:

Roman chamomile is calming and soothing, useful for pitta excess – fever, infection, anger, and impulsivity. It also balances vata and has cooling properties.

Traditional Chinese Medicine:

In TCM Roman chamomile encourage and regulates the Qi energy flow through the body. It is used to ease pain, relieve spasms and as a calming, soothing herb.

GERMAN CHAMOMILE (*Matricaria chamomile*)

List of specific therapeutic actions

Respiratory / ENT: helps in respiratory and ENT infections and inflammations (especially the superior tract), soothes sore throat, aids in airway decongestion, relieves toothaches and earaches, soothes teething pain

Digestive: calms stress-related digestive problems, attenuates heartburn and acidity, soothes colic, treats swollen and sore gums, regulates peristalsis, treats constipation, treats diarrhea, relieves gastritis and ulcer related pains, prevents IBS episodes, stimulate bile production

Skin: promotes wound healing, especially in slow healing ulcerations, helps in skin infection and inflammations, alleviates eczema, rashes and dermatitis, mild on the skin, highly compatible with all skin types, helps in the treatment of broken capillaries and varicose veins, treats diaper rash

Urinary: alleviates cystitis, reduces bladder inflammation

Reproductive: regulates menstrual flow, reduces menstrual pain, aids in PMS and menopause, helps in post-partum depression

Immune: has antiseptic, antibacterial and antifungal properties, promotes natural healing

Musculoskeletal: relieves muscular and joint pains, aids in rheumatism, relieves neuralgias, soothes sore muscles, aids in carpal tunnel, reduces inflammations

Nervous: fights stress and anxiety, reduces nervousness, has soothing and calming properties, supports a positive, aids in sleep disorders and insomnia, helps in migraines and headaches, and helps in ADHD

Energetic: has relaxing properties, soothes the mind, balances emotions and calms nerves, induces euphoria, supports clarity, encourages connection with the higher conscience gives peace of mind, promotes emotional balance, helps in children's hyperactivity and lack of concentration

Ayurveda:

Chamomile is calming and soothing, useful for pitta excess – fever, infection, anger, impulsivity, recklessness. It also balances vata and has cooling properties.

Traditional Chinese Medicine:

It is considered calming and soothing for the shen (mind). It cools the heat in the liver and supports the Liver Qi. German chamomile is also used in yang excess ailments that are associated with anxiety, restlessness or insomnia.

Important scientific data:

Chamomile contains a wide variety of active ingredients such as bisabolol and its derivatives with strong anti-bacterial and anti-inflammatory, flavonoids such as quercetin,

apigenin with antioxidant action, fatty acids, polysaccharides and vitamins – particularly B2.

Several clinical trials focused on orally administered chamomile (infusion, tincture, oil) potency in treating various gastrointestinal problems, either chronic or acute. Relevant results were observed in treating intestinal inflammation and spasms, especially due to the bisabolol effects.

The polysaccharides in Chamomile activate macrophages and lymphocytes supporting wound healing and the fatty acids helps restoring the skin barrier and moisturize the treated area.

The bisabolol in the Chamomile extract acts as an antifungal and antibacterial with effects in wound healing and in treating skin inflammations, cold sores and ulcerations.

Apigenin is a neuro-relaxer and causes overall calming and relaxing effects without determining drowsiness.

Herb infusion can be used for oral hygiene, helps the cold sores and toothaches and it's used for colic and throat sores in children. It is also safe and successful in treating sleep disorders and hyperactivity in children.

Dosage and frequency

- Tea: 1 tablespoonful steeped into a cup of hot water for 5-10 minutes; 3-4 times/day, preferably between meals.
- The tea can be also used for mouthwash and gargle, with the fresh tea infusion several times per day.
- Tincture: 10 – 30 drops in water, 3-4 times/day
- Therapeutic bath: 1 cup of dry flowers infused into 1 liter of hot water – added to the bath water

Cautions, Warnings and Contraindications:

Caution:

Chamomile pollen may cause hypersensitivity reactions.

Contraindications:

Chamomile is contraindicated in patients who are allergic to chrysanthemums, ragweed, milk-thistle, daisies, or other herbs.

Possible herb / drug interactions:

Chamomile is considered generally safe when following normal dosages.

Propagation

Easy to propagate by seed, high germination rate in 7 to 10 days usually. Plant indoors in flats and transplant outdoors in early to mid spring after about two months.

Planting and cultivation

Chamomile should be planted fairly early on in the spring. They like the cool moisture of early springtime. Plant about 6-12 inches apart and two or three across a bed at 12-24 inches spacing. You can crowd these a bit and let them spread into one another, this crowds out the weeds as well. It seems to grow in any kind of soil, needs full sun, and is not bothered by pests.

Ginger (Zingiber officinale)

Overview:

Ginger is a perennial, shrubby, rhizomatous flowering plant belonging to the Zingiberaceae family and native to South China and other Asian regions. It favors humid areas, with rich precipitations and high temperatures. Due to its popularity as a spice and a therapeutic herb ginger is now cultivated all over the world for both its spice and medicinal uses. The plant's rhizomes are aromatic, thick, lobed, pale yellowish, varying in shape and size with maturity and the different cultivated types.

The rhizome has been used for thousands of years in the oriental traditional cultures – especially Chinese and Indian - in the daily diet and in special preparations in the treatment of various diseases. There are sources claiming that ginger is the most ancient spice used by humans. Therapeutic use of ginger is documented as early as antiquity in Asia. It was one of the spices that travelled to the Roman and Greek empires, where it was considered a warming herb with aphrodisiac properties. Ginger became a popular spice and a medical herb in Europe, where it was used during plagues for its diaphoretic properties.

Brief Description of the therapeutic functions

In traditional, herbal and alternative medicine ginger has multiple uses: potent cure for travel sickness, nausea and indigestion, a strong carminative and is used for gas, dyspepsia, colic, irritable bowel, loss of appetite, an immune system booster in chills, cold, flu, treatment in poor circulation, menstrual cramps, cholesterol and blood pressure regulator and topically used for joint pains, dermatitis, rash, allergic skin reactions.

In modern medicine, ginger therapeutic forms are standardized and used to treat several acute or chronic conditions: travel sickness, nausea and indigestion, dyspepsia, poor peripheral circulation, high blood pressure, joint and muscular pain.

Therapeutic Actions and Benefits:

Ginger is rich in sesquiterpenes and monoterpenes and other active ingredients such as benefic alcohols, esthers and ketones. In traditional and herbal medicine ginger has been used for centuries as a potent cure for travel sickness, nausea and indigestion, a strong carminative and is used for gas, dyspepsia, colic, irritable bowel, loss of appetite, an immune system booster in chills, cold, flu, treatment in poor circulation, menstrual cramps, cholesterol and blood pressure regulator and topically used for joint pains, dermatitis, rash, allergic skin reactions. Modern scientific research validates its use, confirming that ginger's active ingredients are efficient in addressing a wide spectrum of medical conditions and health issues. Ginger essential oil has tonic and uplifting effects on the nervous system. It is particularly effective during stressful periods associated with fatigue and exhaustion.

List Of Specific Therapeutic Actions

Respiratory: has decongestant properties, clear sinuses, aids in sore throat, helps treating colds, flu, sore throat and bronchitis, supports the respiratory system during seasonal changes, improves cardio-pulmonary circulation, increases oxygenation, attenuates chronic allergies and asthma

Digestion: promotes a healthy digestive function, relieves gas and bloating, prevents and treats nausea, helps in morning sickness, balances appetite, alleviates dyspepsia, helpful in motion sickness, fights constipation, treats colic and cramps

Circulatory: enhances peripheral circulation, lowers high blood pressure, lowers cholesterol levels, protects the circulatory system, treats arteriosclerosis

Immune: immune system booster, adjuvant in viral and bacterial infections, fights against tumor proliferation, anti-oxidant

Reproductive: regulates menstrual flow, reduces menstrual pain

Topical: lowers joint pain, alleviates muscular and ligament strain, treats skin irritations and dermatitis

Immune: immune system booster, adjuvant in viral and bacterial infections, fights against tumor proliferation, anti-oxidant

Musculoskeletal: alleviates muscular aches and pains, relieves stiff joints, aids in arthritis and rheumatism, soothes sore muscles

Nervous: neuro-tonic, stimulates and strengthens nerves, helps in exhaustion and fatigue, supports the nervous system

Ayurveda:

Ginger is a fundamental herb in Ayurveda. It is considered beneficial for all, especially for conditions associated with vata imbalance. It is a potent detoxifier, a supporter of the digestive function, and a cleanser of the respiratory system.

Ayurvedic medicine:

Taste: spicy, pungent

Post digestive: pungent

Potency: warming

Quality: oily, light, sharp

Tissues: digestive, plasma, blood,

Channels: digestive, circulatory, lymphatic, respiratory

Traditional Chinese Medicine:

Ginger is one of the most widely used medicinal herbs in TCM. It is considered warming and used to treat both interior and exterior cold. It also considered a tonic, strengthening and circulating Qi energy. It warms the Lung and Liver meridians, supports circulation of the blood and fortifies the Yang.

Important scientific data:

Ginger contains numerous active and pungent ingredients specific to its plant family such as sesquiterpene hydrocarbons (predominantly zingiberene), shogaols, zingerone, paradol, the complete spectrum of vitamin B, vitamin C and others.

The majority of the scientific studies revolve around ginger's antiemetic properties. While the mechanisms of action are not fully comprehended the conducted experiments suggest that it is a direct action on the gastrointestinal tract, a combination of carminative, absorbent and antispasmodic effects combined with vestibular involvement of the central nervous system.

Several clinical trials, double-blind, placebo controlled, involving hundreds of participants showed that ginger extract considerably lowers the nausea and sickness triggered by motion. The *Z. officinalis* group showed improvement in all the measured parameters and furthermore, the extract proved to be as effective as the pharmaceutical antiemetic but without any manifestation of side effects.

Pregnancy related nausea is also alleviated by ginger, as it is proved by several placebo controlled studies involving first-trimester pregnant women. Overall, 77% of the ginger group, comparing to only 20% in the placebo group reported a sensible decrease in the nausea and pregnancy-related vomiting.

Studies have investigated and successfully proved ginger potency in post-operative and during/post-chemotherapy sickness and nausea but with considerably lower percentages compared to the motion and pregnancy related sickness.

Z. officinalis extract orally administered has been also studied as an alternative to non-steroid therapy for joint pain and arthritic conditions. Though the results were comparable to ibuprofen administration but without the side effects, more studies need to be done to clinically assess the ginger efficiency.

The effect of ginger extract usage on the cardiovascular system showed results especially in lowering the cholesterol levels and lowering blood pressure. Besides lowering the cholesterol levels, ginger also fights arteriosclerosis and prevents heart attacks. High blood pressure was reportedly lowered by oral administration of ginger extract. These benefic effects seem to be the result of the phenolic anti-oxidants found in the ginger rhizome.

Incipient studies led to promising results in anti-cancer therapy. The potent anti-oxidant active ingredients found in ginger showed inhibiting effects tumor genesis and tumor proliferation, especially in hepatic and skin cancer.

Radioprotective

Extracts of ginger have been found to have protective effects against gamma radiation induced sickness and mortality, that have been attributed to it free radical scavenging, antioxidant, anti-inflammatory and anti-mutagenic effects. Its actions were specifically protective of the GI tract and bone marrow. It has also been found to selectively protect normal tissues against the tumoricidal effects of radiation treatments.

Dosage and frequency

- Dry/fresh: ¼ tsp 1 – 3x day

- Fresh: ½ - 1 tsp 1 – 3x day
- Decoction: 1 tsp grated fresh per cup water, simmered 10 – 20 minutes; ½ - 1 cup 2 – 4x day
- Tincture: 5 – 10 drops in water, 2 – 4x day
- Topical: apply compress of fresh root to the painful area

Cautions, Warnings and Contraindications:

Caution:

Ginger should be cautiously used in individuals using anticoagulant treatment.

Warnings:

Oral overdose can lead to stomach and intestinal irritation. It is recommended that the ginger is orally administered concomitant with the meal, or post-meal.

Contraindications:

Ginger is contraindicated in patients with gallstones.

Possible herb / drug interactions:

Ginger is considered generally safe when following normal dosages, no drug or herb interactions are currently known.

Lemon Balm (Melissa officinalis)

Part of plant used

Leaves (dried leaves, tea, capsules, tincture, essential oil)

Short description/Overview

Melissa officinalis, a member of the mint (Lamiaceae) family, is a perennial herbaceous plant. It is naturally occurring but also purposely grown - initially by bee keepers and lately in crops for medicinal, cosmetic or industrial use. Its leaves vary in color from dark green to yellow, depending on the soil and maturity, and have a lemony, minty smell.

Lemon balm has been used for centuries for numerous purposes such as calming, soothing, wound healing, and treating insect bites. It has been highly regarded as a nervine that fights depression and melancholy and strengthens the nerves, and as a digestive aid, especially for nervous digestive conditions. Lemon balm is also used as an ingredient in various European cuisines.

Lemon balm contains several active ingredients such as quercetin, citral, citronellal, and flavonoids, all used in herbal medicine for their anti-oxidant and anti-inflammatory properties.

Brief description of the therapeutic functions

The various forms of preparation of lemon balm leaves are known to have antispasmodic, anti-anxiety, calming, soothing, diaphoretic, antiviral and carminative properties, documented by both traditional and modern medicine.

List of specific therapeutic actions

Nervous: alleviates insomnia, alleviates anxiety, calms nervousness, improves cognitive functions, lessen Alzheimer's symptoms, relieves phobias

Respiratory: improves oxygenation, helps with colds and flus

Digestive: regulates digestive functions, relieves gas and reduces bloating

Skin, topical: treats oral and genital herpes

Immune System: adjuvant in colds and flu

Ayurvedic medicine:

Taste: sweet, sour, astringent, pungent

Post digestive: pungent

Potency: cooling

Quality: light, dry, sharp, penetrating

Tissues: plasma, blood, nerve, reproductive

Channels: digestive, nervous, reproductive, respiratory

Important scientific data:

Academic studies showed relevant results in using orally administered lemon balm as a calming ingredient, usually in mixtures with other similar effect actives. A double blind placebo study with 88 volunteers showed considerable improvement in sleep quality without experiencing important side effects.

Clinical studies proved the efficiency of topically applied lemon balm ointments in healing herpes induced lacerations.

Dosage and frequency

Adults:

- Infusion: 1 tablespoonful of dried lemon balm leaves in a cup hot water, steep 10 – 15 minutes; ½ - 1 cup, 2 – 4x day
- Tincture: 20 – 40 drops in water, 2 – 4x day

Cautions, Warnings and Contraindications

Use with caution in cases of diabetes and alcohol dependence and liver disease

Avoid using together with alcohol

Pregnant women and hypothyroidism patient should not use lemon balm

Melissa is generally considered an extremely safe and versatile herb.

Combinations

w/ Valerian root for insomnia

w/ Chamomile for tense digestive issues

w/ Bugleweed for hyperthyroid

w/ Hawthorn berry for neuro-cardiac excess i.e. palpitations, rapid heart beat

Propagation

Lemon Balm grows easily from seeds in the greenhouse. It has a high germination rate, usually within 3 to 4 weeks if given plenty of light and proper moisture. It is also possible to propagate from cuttings or root divisions but not especially practical.

Planting & cultivation

Lemon Balm needs mostly sun but can take partial shade. It requires a good amount of moisture to thrive, but is potentially susceptible to mildew if conditions are too wet.

Harvesting & processing

Lemon Balm can be harvested when in flower or close to it. It is especially good to harvest during the heat of mid-day when the oils are at their peak. One can easily get several cuttings per season. Lemon balm dries well in a week or so and is not exceptionally difficult to garble.

Long pepper (Piper longum)

Part of plant used

Fruit (dried, powder)

Short Description/Overview:

Long pepper, or Pippali, is a flowering plant belonging to the Piperaceae family cultivated for its fruit, which is usually dried and used as a condiment. Originally from India (it is also referred to as Indian long pepper) the plant favors warm and humid weather and a sandy soil. Due to its Indian origin reference to its use as a therapeutic in several conditions are often found in Ayurvedic medicine but also in other Asian and North-African folk medicine.

Brief description of the therapeutic functions

In herbal medicine long pepper is used for treating headache, toothache, asthma, bronchitis, cough, diarrhea, fever, stomachache, heartburn, indigestion, insomnia, lethargy, muscle pain, menstruation problems. Orally administered P. longum is utilized to increase appetite, stimulate bile flow, improve digestion and induce sweating. It also has analgesic, antifatulent, aphrodisiac, astringent, bactericide, diuretic, larvicide, sedative, stimulant, tonic and vermifuge properties.

List of specific therapeutic actions

Digestive: regulates digestive functions, relieves gas and bloating, treats indigestion and dyspepsia, stimulates bile production, eliminates intestinal parasites, stimulates appetite

Respiratory: clears airways, aids expectoration, adjuvant in colds and flu, decongestant, has broncho-dilating effects, alleviates asthma

Circulatory: stimulates peripheral circulation

Reproductive: regulates menstrual flow, reduces menstrual pain

Immune: tonic, adjuvant in viral and bacterial infections

Topical: relieves joints and muscular pain, antibacterial, antifungal

Ayurvedic medicine:

Taste: spicy, pungent

Post digestive: pungent

Potency: hot

Quality: oily, sharp

Tissues: blood, nerves

Channels: digestive, respiratory, circulatory

Important scientific data:

The majority of the research involving P. longum is focused on one of its active ingredients called piperine (up to 6% of the dried fruit). Piperine is a strong alkaline antioxidant with numerous clinical applications – from antibacterial to anti-cancer.

Several studies covered long pepper influence in normalizing the digestion function, with positive results. The long pepper group showed improvement in the digestive function and less digestive trouble, overall its carminative action being confirmed. *P. longum* is also used in stimulating appetite, even in severe anorexia cases.

Long pepper's efficiency as an adjuvant in respiratory infections was also tested with positive results, especially in children. Standardized 1% extract orally administered led to a considerable improvement of the respiratory function.

Piperine, one of the long pepper active ingredients also has shown stress reliever, anti-depressant and anti-anxiety properties in several in vitro studies.

Long pepper proved efficiency beyond its condiment status, acting as an antibacterial and antifungal agent in the food and when applied to contaminated surfaces. It was also successful as an anthelmintic – killing intestinal parasites.

Anti-tumor and anti-proliferation properties in cancer treatment are investigated in several incipient studies, with encouraging results.

Radioprotection

The tincture of *Piper longum* fruit had radioprotective effects on irradiated mice. Its primary mechanism of actions was maintaining white blood cell levels, enhancing bone marrow cells and increasing the production of reduced glutathione, the major endogenous antioxidant produced by the cells, and reducing elevated levels of lipid peroxidation.

Dosage and frequency:

- Powder: ¼ tsp in water or mixed with honey, 2 – 3x day

Cautions, Warnings and Contraindications:

Caution:

Never ingest the powder by itself, always use it dissolved or mixed.
Cautious use is recommended in severe cases of chronic diseases.

Warnings:

Oral overdose can lead to mild stomach and intestinal irritation.

Contraindications:

Pregnant women and infants should avoid use.

Possible herb / drug interactions:

Long pepper is considered generally safe when following normal dosages.

Marjoram (*Origanum marjorana*)

Part of plant used

Leaves (fresh, dried, infusion, tincture, oil, essential oil)

Short Description/Overview:

Marjoram is a perennial fleshy plant, a member of the Lamiaceae (mint) family. Marjoram is used as a condiment in the diet in several cultures, especially in the Mediterranean countries both in its fresh or dry form. Therapeutic uses of marjoram are reported from antiquity, especially in the Greek and Roman cultures.

Brief Description of the therapeutic functions

Marjoram is used in treating and ameliorating digestive and respiratory symptoms, and as an oral and topical analgesic even since ancient times. Its leaves, in various forms of preparation, were used in case of colds, flu, fevers, coughs, respiratory viral and bacterial infections, asthma, sinus congestion, hay fever, allergies, headaches, muscle and joint pain, gout, flatulence, dyspepsia, distension, intestinal worms, Candida and other bacterial and fungal infections, indigestion, poor appetite, colic, peristaltic problems, poor circulation, menstrual problems, fungal infections, anxiety, insomnia, headaches.

Herbal medicine utilizes marjoram's potency in treating or alleviating several digestive and respiratory problems and also as an antiseptic, antibacterial, antifungal, antiparasitic and anthelmintic. Marjoram is well tolerated by the human body.

List of specific therapeutic actions

Digestive: regulates digestive functions, relieves gas and bloating, treats indigestion and dyspepsia, stimulates bile production, eliminates intestinal parasites

Respiratory: clears airways, aids expectoration, adjuvant in colds and flu, decongestant

Immune: fights harmful bacteria, fungi and viruses, boosts immune reaction

Urinary: treats urinary infections, fights water retention, diuretic

Reproductive: regulates menstrual flow, reduces menstrual pain

Topical: relieves joints and muscular pain, insect repellent

Ayurvedic medicine:

Taste: bitter, pungent

Post digestive: pungent

Potency: warming

Quality: dry, sharp, penetrating

Tissues: blood, nerve, reproductive

Channels: digestive, respiratory, reproductive, immune

Important scientific data:

Marjoram has a high content of active ingredients such as flavonoid glycosides, arbutin, methylarbutin, tannins, caffeic acid, carnolic acid, carnosol, labiatic acid, rosmarinic acid, steroids, triterpenoids, paraffins (e.g., n-triacontane), vitamins (especially A, E and C). Marjoram is also rich in minerals, especially calcium and iron.

Rosmarinic acid, found in marjoram, has proved anti-inflammatory properties comparable to ibuprofen but without its side effects.

Several in vitro studies showed marjoram's antibacterial potency including the case of harmful and / or antibiotic-resistant bacteria. Studies have shown that *O. marjorana* is also an effective antifungal. Marjoram oil showed effectiveness in combating several types of internal parasites.

Popular therapeutic recipes:

- *Anti-inflammatory infusion:*
 - o 1 tablespoon marjoram
 - o 1 tablespoon meadowsweet
 - o 1 tablespoon nettle
 - o ½ tablespoon feverfew
 - o 1 liter water

Pour the boiling water over the fresh or dried herbs. Infuse for 15min. Recommended dosage: 2-3 cups per day.

Dosage and frequency:

- Infusion: 1 tsp infused per cup hot water; ½ - 1 cup, 2 - 3x day
- Tincture: 5-10 drops 2-3times/day
- Therapeutic bath: 1 liter boiling water over 1 cup dried marjoram, infused 15 minutes, strained, added to the bath water; whenever necessary for fatigue, muscular pain, anxiety

Cautions, Warnings and Contraindications:

Caution:

Cautious use is recommended in chronic digestive or respiratory diseases.

Warnings:

Oral overdose can lead to stomach and intestinal irritation.

Possible herb / drug interactions:

Marjoram is considered generally safe when following normal dosages.

Oregano (Origanum vulgare)

Part of plant used

Leaves (fresh, dried, infusion, tincture, oil, volatile oil)

Short Description/Overview:

Oregano is a perennial flowering herb, sometimes cultivated annually due to its low resistance to cold; it is a 20-80 cm tall member of Lamiaceae, (mint) family. It is sometimes called wild marjoram due to its resemblance to marjoram, a member of the same family. Oregano is used in several cultures, especially in the Mediterranean countries as a condiment in the daily diet. Therapeutic uses of oregano date back to antiquity, reportedly being use by Hippocrates as an antiseptic and a cure for digestive and respiratory problems.

Brief Description of the therapeutic functions

Several traditional medicine and folk recipes report the use of oregano in treating and ameliorating digestive and respiratory symptoms, and as an oral and topical analgesic. Oregano, in various forms of preparation, is used in cases of colds, flu, fevers, coughs, respiratory viral and bacterial infections, asthma, sinus congestion, hay fever, allergies, headaches, muscle & joint pain, gout, flatulence, dyspepsia, distension, intestinal worms, Candida and other bacterial and fungal infections, indigestion, poor appetite, colic, peristaltic problems, poor circulation, amenorrhoea, dysmenorrhoea, fungal infections, anxiety, unwanted depression, insomnia, headaches, herpes.

Modern medicine recognizes oregano's effectiveness as an adjuvant in some digestive and respiratory problems and also as an antiparasitic and antihelmetic. Oregano is well tolerated by the human body, with virtually no toxicity and possibility of overdosing.

List of specific therapeutic actions

Digestive: regulates digestive functions, relieves gas and bloating, treats indigestion and dyspepsia, stimulates bile production, eliminates intestinal parasites

Respiratory: clears airways, aids expectoration, adjuvant in colds and flu, decongestant

Reproductive: regulates menstrual flow, reduces menstrual pain

Topical: relieves joints and muscular pain, insect repellent

Ayurvedic medicine:

Taste: bitter, pungent

Post digestive: pungent

Potency: warming

Quality: dry, sharp, penetrating

Tissues: blood, nerve, reproductive

Channels: digestive, respiratory, reproductive

Important scientific data:

Oregano is rich in active molecules such as flavonoids, phenols, caffeic acid derivatives, vitamins, monoterpenoids and monoterpene.

The majority of scientific studies focus on oregano's antimicrobial, antibacterial and anthelmintic properties.

Several in vitro studies showed oregano's potency in keeping bacterial population under control and killing harmful bacteria. Oregano showed efficiency even in the case of highly aggressive and antibiotic resistant bacteria, such as staphylococcus and streptococcus. Excellent results were reported in fighting off food borne bacteria that is dangerous upon consumption, confirming that oregano is much more than a spice, but rather an antibacterial food-additive.

Dosage and frequency:

- Infusion: 1 tsp infused per cup hot water; ½ - 1 cup, 2 – 3x day
- Tincture: 5-10 drops 2-3times/day
- Therapeutic bath: 1 liter boiling water over 1 cup dried oregano, infused 15 minutes, strained, added to the bath water; whenever necessary for fatigue, muscular pain, anxiety

Cautions, Warnings and Contraindications:

Caution:

Cautious use is recommended in chronic digestive or respiratory diseases.

Warnings:

Oral overdose can lead to stomach and intestinal irritation.

Possible herb / drug interactions:

Oregano is considered generally safe when following normal dosages.

Peppermint (*Mentha piperita*)

Part of plant used

Leaves (dried, infusion, tincture, essential oil)

Short description/Overview:

Peppermint is a hybrid mint crossed between watermint and spearmint belonging to the Lamiaceae family. Originally from Europe and the Middle East, peppermint is currently spread worldwide and purposely cultivated for medicinal and cosmetic use. Due to its pleasant smell determined by the high content of volatile oils, peppermint has been used for centuries as a spice and a food preservative especially in the oldest European cultures of Greek and Roman. In herbal and folk medicine peppermint was used to treat and alleviate a wide spectrum of diseases. Currently peppermint one of the most widely used flavoring agent in the food and beverage industry both due to its unique, pleasant and easily recognizable flavor and due to its preservative properties.

Brief Description of the therapeutic functions

In folk and herbal medicine peppermint is used in treating and ameliorating a wide variety of acute and chronic conditions: irritable bowel syndrome (IBS), nausea, vomiting, flatulence, dyspepsia, distension, indigestion, poor appetite, colic, peristaltic problems, colds, flu, fevers, coughs, respiratory viral and bacterial infections, sinus congestion, asthma. Topically used it has a cooling and soothing effect on the treated area being useful in joint and muscular pains.

Modern herbal medicine uses peppermint mainly for its high volatile oils content, as an aromatic in herbal or OTC preparations, in combination with other similar ingredients.

List of specific therapeutic actions

Digestive: regulates digestive functions, calms nausea, stops vomiting, relieves gas and bloating, treats indigestion and dyspepsia, stimulates bile production

Respiratory: clears airways, aids expectoration, adjuvant in colds and flu, decongestant

Nervous: alleviates anxiety, calms nervousness

Immune: tonic, immune system booster, adjuvant in viral and bacterial infections, fights against tumor proliferation, antioxidant

Topical: relieves joints and muscular pain

Ayurvedic medicine:

Taste: sweet, pungent

Post digestive: pungent

Potency: cooling

Quality: dry, sharp, light, penetrating

Tissues: blood, nerve

Channels: digestive, respiratory, nervous, reproductive

Important scientific data:

Peppermint, like other members of its family, has a high content of volatile oils that not only make its scent recognizable but have numerous therapeutic applications. Besides menthol and menthone, the principal volatile oils peppermint also contains flavonoids, tannins and vitamins.

Several trials have been focused on peppermint's efficiency in IBS (irritable bowel syndrome), with encouraging and relevant outcomes.

Radioprotective

Peppermint leaf extract was found to have modulatory and protective effects on the histology, lipid peroxidation, and phosphatase levels in testis. The untreated control group had decrease of testis weight, severe testicular atrophy and degeneration of germ cells; in contrast, the treated group had increase of testis weight, normal testicular morphology and germ cells. The results were attributed to the high amounts of phenolic and flavonoid compounds found in peppermint, and their antioxidant and radical scavenging activity.

Peppermint was found to have a radioprotective effect against chromosomal damage in bone marrow from gamma radiation.

Dosage and frequency:

- Infusion: 1 tsp infused per cup hot water; ½ - 1 cup, 2 – 3x day
- Tincture: 5-10 drops 2-3times/day

Cautions, Warnings and Contraindications:

Caution:

Cautious use is recommended in severe chronic digestive or respiratory diseases.

Warnings:

Oral overdose can lead to stomach and intestinal irritation.

Topical overdose of essential oil can lead to contact dermatitis.

Contraindications:

Pregnant women and infants should avoid use of the essential oil

Possible herb / drug interactions:

Peppermint is considered generally safe when following normal dosages.

Rosemary (Rosmarinus officinalis)

Part of plant used

Leaves and flowers (dried, tea, capsules, tincture, extract, essential oil)

Short description/Overview:

Rosemary is a member of the mint family (Lamiaceae). It is a perennial plant with evergreen, needle shaped leaves, woody texture with yearly florescence in various colors (white, pink, purple or blue). The plant is native to the Mediterranean region but it can also be found in North Africa and Middle Asia. Though many know about the rosemary being used as a spice in various foods and beverages less know about its healing properties and its long history in traditional medicine. Documented therapeutic use of rosemary dates back to antiquity where it was used to treat a wide variety of conditions from renal problems, abdominal colic, dysmenorrhea, respiratory diseases, pain, hair growth stimulator, memory and concentration and others. It contains over 240 active ingredients – the most important being: carnosol, carnosic acid, rosmarin and diosmin – powerful and potent antioxidants.

Brief description of the therapeutic functions. Indications and Usage

Modern medicine acknowledges rosemary's potency in regulating blood pressure, alleviating dyspeptic stomach symptoms, stimulating appetite and relieving rheumatic pains.

Traditional and folk medicine usage includes ameliorating digestive symptoms, headaches and migraines, bile stimulation, fatigue, exhaustion, menstrual problems, dizziness, and memory problems.

List of specific therapeutic actions

Digestive: regulates digestive functions, relieves gas and bloating, treats indigestion and dyspepsia, stimulates bile production

Respiratory: clears airways (especially as aromatherapy), aids expectoration, adjuvant in colds and flu

Excretory: treats renal colic, regulates perspiration

Skin: fights dandruff, promotes wound healing, supports hair growth, ameliorates alopecia, improves eczema; essential oils stimulates scalp and hair, insect repellent

Muscle/Bones/Joints: relieves muscular and joint pain

Nervous: alleviates anxiety, calms nervousness, improves cognitive functions, aids memory

Reproductive: regulates menstrual flow, reduces menstrual pain

Ayurvedic medicine:

Taste: bitter, pungent

Post digestive: pungent

Potency: heating

Quality: light, oily, sharp, penetrating

Tissues: plasma, blood, nerves

Channels: digestive, nervous, reproductive, respiratory

Important scientific data:

The majority of in vivo and in vitro studies and clinical trials concerning *Rosmarinus officinalis* focus on its antioxidant, antimicrobial, antibiotic and antifungal properties and their vast applications.

Rosemary extract has been found useful in alleviating joint and muscular pain due to its increasing blood circulation effect locally.

Anti-depressive like effects following the use of rosemary was observed.

Spasmolytic properties on the biliary tract and stimulating effect on the bile flow from the gall bladder and a hepato-protective effect was revealed.

Anti-mutagenic and tumor inhibiting effects of rosemary were shown in different animal studies.

Radioprotective

Rosemary was found to have radioprotective effects of lessening radiation sickness and increasing survival rates, with the typical findings of increasing glutathione and reducing lipid peroxidation levels.

Several trials have proven Rosemary's ability to kill numerous harmful and potentially deadly organisms including candida, salmonella, *Staphylococcus aureus*, *E.coli*, *Aspergillus* and other gram negative bacteria.

Studies have led to encouraging evidence that rosemary (delivered by aromatherapy) acts as a memory aid, anxiety inhibitor, and booster of academic performance.

Dosage and frequency

- Infusion: 1 tsp infused per cup hot water; ½ - 1 cup, 2 – 3x day
- Tincture: 5-10 drops 2-3times/day
- Therapeutic bath: 1 liter boiling water over 1 cup dried rosemary, infused 15 minutes, strained, added to the bath water; whenever necessary for fatigue, muscular pain, anxiety

Cautions, Warnings and Contraindications:

Caution:

Cautious use is recommended in gastritis, ulcer and other ulcerous intestinal diseases, open wounds and ulcerations.

Warnings:

Oral overdose can lead to stomach and intestinal irritation; extremely high doses could trigger seizures

Contraindications:

Pregnant women and infants should avoid use of the herb and essential oil

Possible herb / drug interactions:

Rosemary can accelerate the metabolism of certain pharmaceuticals. It is considered generally safe when following normal dosages.

Propagation

Rosemary should be propagated from tip cuttings using a liquid rooting hormone. This can happen in a warm moist greenhouse, but be careful of root rot from too much moisture.

Transplant in early summer when temps really warm up.

Planting & cultivation

Plant rosemary spaced about 12-15 inches in full sun. It grows well without a lot of water, and likes a well-drained soil.

Harvesting & processing

Harvest the aerial parts in late summer or any time throughout the growing season. Leave most of the plant alone and you can count on vigorous new growth continuously. Dries very well and quite quickly, and is easy to garble.

Thyme (Thymus vulgaris)

Part of plant used

Leaves and flowering tops (dried, infusion, tincture, oil, essential oil)

Short description/Overview:

Thyme is a perennial, flowery and herbaceous plant that belongs to the Lamiaceae, (mint) family. It is used in several traditional cuisines as a spice and condiment on a daily basis. Therapeutic uses of thyme date back to antiquity, being mentioned in Greek, Roman and Egyptian writings.

Brief description of the therapeutic functions

In traditional and herbal medicine thyme is considered useful in treating and ameliorating a wide variety of acute and chronic conditions: irritable bowel syndrome (IBS), flatulence, dyspepsia, distension, indigestion, poor appetite, colic, peristaltic problems, intestinal worms, colds, flu, fevers, coughs, respiratory viral and bacterial infections, asthma, sinus congestion, asthma, allergies, headaches, bacterial and fungal infections, poor circulation, amenorrhea, dysmenorrhea, urinary infection, anxiety, depression, insomnia, headaches, herpes. Used topically it fights bacteria and fungi and alleviates joint and muscular pains. In aromatherapy it has calming and soothing effects on anxiousness and nervousness.

Modern herbal medicine focuses on the use of thyme in treating and relieving digestive and respiratory symptoms, and as an oral and topical antibacterial and antiviral. It is usually associated with herbs that have similar or complementary effects. Thyme is well tolerated by the human body, with virtually no toxicity and possibility of overdosing.

List of specific therapeutic actions

Digestive: regulates digestive functions, relieves gas and bloating, treats indigestion and dyspepsia, stimulates bile production, eliminates intestinal parasites

Respiratory: clears airways, aids expectoration, adjuvant in colds and flu, decongestant

Nervous: alleviates anxiety, calms nervousness

Circulatory: stimulates peripheral circulation, protects blood vessels

Reproductive: regulates menstrual flow, reduces menstrual pain

Excretory: fights urinary infections

Immune: tonic, immune system booster, adjuvant in viral and bacterial infections, fights against tumor proliferation, antioxidant

Topical: relieves joints and muscular pain, antibacterial

Ayurvedic medicine:

Taste: bitter, pungent

Post digestive: pungent

Potency: heating

Quality: dry, sharp, penetrating

Tissues: blood, nerve

Channels: digestive, respiratory, nervous, reproductive

Important scientific data:

Thyme has several active constituents that have therapeutic uses. Amongst them, the most important are: flavonoids (apigenin, luteolin, thymonin), tannins, bitters, essential oil (thymol, carvacrol), terpenes, saponins, caffeic acid and salicylate.

The majority of the scientific studies revolve around thyme efficiency as an antibacterial agent. Studies involving *T. vulgaris* showed its potency in keeping bacterial population under control and killing harmful bacteria including the drug-resistant ones such as staphylococcus and streptococcus. Important results were reported in controlling bacteria population in the food industry.

Studies have shown that thyme is also an effective antifungal.

T. vulgaris antioxidant properties are observed in several studies, assessing their anti-cancer properties. Thyme's force against tumor and their proliferation was assessed with promising results.

Dosage and frequency:

- Infusion: 1 tsp infused per cup hot water; ½ - 1 cup, 2 – 3x day
- Tincture: 5-10 drops 2-3times/day
- Therapeutic bath: 1 liter boiling water over 1 cup dried thyme, infused 15 minutes, strained, added to the bath water; whenever necessary for fatigue, muscular pain, anxiety

Cautions, Warnings and Contraindications:

Caution:

Cautious use is recommended in severe chronic digestive or respiratory diseases.

Warnings:

Oral overdose can lead to stomach and intestinal irritation.

Possible herb / drug interactions:

Thyme is considered generally safe when following normal dosages.

Tulsi, Holy Basil (*Ocimum sanctum*)

General information

Tulsi, which translates as “the incomparable one”, is among the most sacred herbs in all of Ayurvedic medicine. It is commonly grown in and around Hindu homes and holy places for its atmosphere-purifying effects. Tulsi has an important place within the daily rituals and holy celebrations performed by Hindus throughout the year. It is worshipped as an emanation of the goddess Lakshmi, the lover of Vishnu. Tulsi provides a beautiful example of how certain cultures remember that to worship nature and god is one in the same.

Therapeutically, Tulsi has a long and impressive list of indications, its benefits extending throughout the body. It is considered to be a Rasayana or rejuvenative as defined by Ayurvedic medicine. This is a similar definition to the Western concept of adaptogenic, which points to an herb’s ability to improve adaptation and functioning in an individual by optimization in virtually every body system. It is also defined as a Sattvic herb, increasing the qualities of clarity, tranquility, joy, and vitality according to traditional Ayurvedic philosophy. A member of the mint family, this special basil is usually seen in three main varieties: Rama, Krishna, and Vana Tulsi. Each has special properties yet all can be used interchangeably as well.

In the West, Tulsi is known as “Holy Basil” yet if you were to ask someone from the Mediterranean they would undoubtedly consider Greek or Genovese Basil equally holy. One way to understand Tulsi’s unique attributes is to look at the energetic similarities common among members of this genus. For instance, like other basil, Tulsi is a carminative with aromatic pungency and a heating nature. This makes it an excellent digestive remedy for conditions characterized by low digestive fire, gas, bloating, damp stagnation and general sluggishness. It increases appetite, calms spasms and cramps and helps to normalize blood sugars and fats. In Ayurvedic physiology it enhances the function of Samana and Apana Vata subdoshas and increases the activity of Pachaka Pitta. These are the energetic forces that orchestrate proper secretion, circulation, and peristalsis within the GI tract and combine to create healthy Agni (digestive fire). Robust digestive fire is essential for metabolizing the excess Kapha and Ama contained in the blood as seen in conditions such as hypercholesterolemia and diabetes. It has attracted a great deal of interest from Western bio-medicine lately as a treatment for lowering blood sugar in diabetes. It has shown great promise in mild to moderate cases and is a likely to figure prominently as a treatment for this current epidemic.

Tulsi’s warming and stimulating nature is also very beneficial for the respiratory system. It is very effective at clearing excess mucous and congestion from the lungs caused by dampness and constriction. It improves expectoration of turbid mucous that could otherwise lead to heat and infection. It activates the Prana Vata within the chest, vitalizing

breathing and increasing vital lung capacity. It can be used for acute or chronic bronchitis, rhinitis, respiratory allergies, coughs, and asthma. It is most suitable when respiratory conditions are characterized by excess cold and damp as opposed to dryness and heat. When conditions are characterized by dryness and irritation it is best to combine Tulsi with cooling and moistening herbs such as Shatavari, Licorice, and Andrographis.

Tulsi has the special ability, or Prabhava in Ayurvedic language, to lower fevers regardless of their origin. It benefits fevers of an acute or chronic nature, improving the manifestation as well as the underlying causes. This function is a common attribute of mint family plants. Their energetic nature is to warm and stimulate the core and circulate energy towards the periphery. This opens the pores and vents the excess heat of fever. This diaphoretic property is also beneficial in a variety of eruptive skin issues characterized by itch and irritation. Tulsi's traditional use for fever and infectious disease has been confirmed by western science, as they have shown it to be a broad-spectrum immune stimulant. Drinking a cup or two of hot Tulsi tea during the cold and flu season can be a useful addition to a preventative healthcare regimen.

Another target of Tulsi's unique attributes is the nervous system. It would be classified as a calmative, rejuvenating nervine according to traditional Western herbalism. It is used for clarifying awareness and heightening mental acuity. It reduces overall tension in the nervous system and allows the Prana Vata to circulate freely. This is the maestro of Vata energy that orchestrates nerve current in the brain and throughout the body. Prana Vata governs and harmonizes the interface where we receive and interpret reality and how that is translated into physiological reality. Tulsi smoothes and stimulates the flow of Prana within the nervous system resulting in crisper mental functioning, increased energy, and a calmer disposition. It can be used when there is a preponderance of mental torpor and lethargy known as *tamas* in Vedic philosophy. Long-term exhaustion, excessive studying, overuse of stimulants, or the heaviness associated with depression and grief are conditions where Tulsi can be used to good effect.

Tulsi also has a general tonic effect upon the heart by way of its circulatory enhancement and calmative properties. Its affinity for Prana Vata opens and enhances circulation to and from the heart. While its high antioxidant and flavanoid content strengthens the vessels and increases their elasticity. Its pungency helps the body to dissolve and metabolize thick Kapha cholesterol and lipid material in the blood making the heart have to work less to circulate it around the body. This also results in a mild but persistent hypotensive effect, especially when combined with other herbs in formulation.

Externally, Tulsi is equally versatile in its function. It can be made into a poultice for fungal and bacterial infections and to draw out boils. The herb can treat insect bites and is an effective repellant when applied as a spray or ointment. The fresh juice is effective for irritated or inflamed, and itching eyes. The tea or juice can also protect the mouth, gums, and teeth from bacteria, caries, and ulcerated conditions.

The essential oil can be diluted in a 1% solution of sesame oil and applied to the chest in bronchial conditions. Likewise the oil can be diffused for colds flus and respiratory conditions such as asthma, and to stimulate appetite.

Radioprotective

A polysaccharide isolated from *Ocimum sanctum* was found to prevent oxidative damage from gamma radiation; it had free radical scavenging effects, and could prevent splenocyte cell deaths.

Holy basil extract was found to give in vivo protection against chromosome damage from radiation in mice, and faster recovery than untreated animals; free radical scavenging was the proposed mechanism of action.

Two flavonoids from leaves of *Ocimum sanctum* were found to significantly reduce chromosomal aberrations at low doses and with no toxicity.

Other species of basil have also been found to have radioprotective effects (*Ocimum gratissimum*, *Ocimum basilicum*, *Ocimum canum*, and *Ocimum kilimandscharicum*). The extracts had modulatory effects against gamma radiation induced chromosomal damage, and increased the levels of reduced glutathione.

Parts used

Leaves are the primary parts used as medicine for the above mentioned conditions. The seeds and roots are quite demulcent and are often used for skin and intestinal issues such as diarrhea. They are rarely seen in commerce outside of India however. The fresh juice is also commonly used in India for many things but is difficult to obtain here. Tulsi beads, made from the woody stalks, are commonly strung in necklaces, bracelets, belts, and meditation malas or rosaries, which are believed by many to have spiritual as well as physical protection benefits.

Herbal Actions: Expectorant, Diaphoretic, Nervine, Carminative, Febrifuge, Anti-bacterial, Anti-septic, Anti-fungal. Rasayana.

Taste: Pungent, Bitter

Temperature: Heating

Moisture: Drying overall

Preparation & Dosage

Infusion of dried leaves, 1-9g per day.

Tincture of fresh or dried plant, 5-15ml per day.

Fresh juice preparation, Powdered herb, Medicated Ghee, Honey infusion.

Combinations

w/ Fennel, Ginger, Cardamom, Rose, for digestive sluggishness and flatulence.

w/ Passionflower and Lemon Balm for calmative effects.

w/ Rosemary and Gotu Kola for promoting clarity of thinking.
w/ Osha and White Pine for cold damp coughs.
w/ Elder flower and Peppermint for fever.
w/ Ashwaganda and Licorice for overall tonification.
w/ Hawthorn, Linden, and Arjuna for hypertension & hypercholesterolemia.

Cautions & Contraindications: Tulsi is contraindicated in high Pitta conditions unless combined with other herbs. Fever is the one exception here due to its Prabhava.

Botany

Tulsi is a bushy perennial shrub. It is a member of the Basil genus (*Ocimum*), and the Lamiaceae family. In warm climates it grows as a perennial and in northern locations it is grown as an annual only. Typically there are three types of Tulsi grown as medicine and seen in commerce: Rama Tulsi (*Ocimum sanctum* = *O. tenuiflorum*) with stems and leaves of green, Krishna Tulsi (*Ocimum sanctum* = *O. tenuiflorum*) with stems and sometimes also leaves of purple, and Vana Tulsi (*Ocimum gratissimum*), which is unmodified from its wild form. Basils are native to tropical Asia, likely having originated in India. Robust Tulsi varieties readily grow wild in many areas of Asia and Africa. Leaf color ranges from light green (Vana) to dark purple (Krishna); the tiny flowers from white to reddish purple. Highly aromatic, different varieties of Tulsi may smell and taste of peppermint, cloves, licorice or lemon, as well as having distinct characteristics of their own.

Propagation

Tulsi is usually cultivated annually from seed, although it can also be propagated from tip or root cuttings. The seeds have a very reliable and high rate of germination. They should be started in the greenhouse about six weeks before planting in northern locations and potted up once they have their true leaves. Sow Tulsi seeds just under the surface of the soil and press in firmly. Keep Tulsi seed watered and warm until germination, which occurs within 1 to 2 weeks.

Planting & Cultivation

Tulsi prefers full sun, warm temperatures, rich soil, and plenty of water. Thin or transplant to 1 to 2 feet apart. Tulsi does well in pots or window boxes, and is traditionally grown for good luck near the front door of the house. Tulsi may grow to a meter or more in height and be ready for harvest in a few months. In warm climates an individual plant may live for a decade or more.

Harvesting & Processing

Harvest Tulsi when the plant is 12-14 inches tall, usually by mid-summer. Harvest no more than 40-60% of the plant and it will continue to grow, providing you with a second or third harvest. It is also useful to pinch off and dry the flowers as the plant is growing in order to send most of the energy into the leaves for a higher volume of plant material. Harvest leaves in the mid-morning, after the sun has dried the dew but before the heat of the day has set in. Herbs like Tulsi have a stronger flavor if harvested earlier in the day, before the sun has the opportunity to dry out some of the volatile oils. Post-harvest one can rinse the

leaves with cold water, but only if they are dirty as this can degrade the quality of the essential oils.

Tulsi dries well in the drying room at a temperature of 90 degrees or so in just a few days. Rama is the easiest to garble as the stems are quite soft, while the Krishna and Vana are a bit woodier. Store dried Tulsi in a cool dry environment and it will typically last a year or more, although the sooner it is used the higher the content of essential oil and thus better effects.