

Therapeutic and Medicinal Uses of Karpura-A Review

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Abstract: *The purpose of this literature review is to gain knowledge of the long history, wide variety and extensive applications of camphor, both in traditional and modern medicine. Camphor (Cinnamomum camphora) is obtained from the wood of camphor tree. It has been used for centuries, throughout the world as a remedy for treating variety of symptoms such as inflammation, infection, congestion, pain, irritation, etc. The studies have shown that some of the components of Cinnamomum camphora have suppressive and antimutagenic effect in number of human cancer cells without harming the healthy cells. In this paper our focus is on therapeutic and medicinal uses of karpura as a remedy for daily minor problems as well as reporting some information about the new applications of this traditional medicine to treat or prevent some serious life-threatening diseases such as cancer and diabetes.*

Keywords: Camphor, Cinnamomum camphora, Application, Treatment, Cancer

1. Introduction

Karpura is a small, glabrous, broad leaved tree, grows up to 40 m with a broad sweeping crown, has diameter of up to 3 m. the bark of the plant is of yellow brown color with rough surface and vertical fissures. The trunk of the plant can be grown up to 8 m long and 2 m wide. The leaves of the plants are of dark to light green color with glossy light color veins. These are 8 to 15 cm long and 3 to 7 cm wide. The leaves are penninerved with dormant buds that enclose in a large, silky, orbicular, imbricating caduceus scales. These give a strong smell when crushed. The shape of the leaves are very variable. It shows ovate to elongate range of structures. Each of them grows alternatively on twigs. The flowers of the plant are bisexual, white in color, hermaphroditic, actinomorphic have terminal panicles on the ends of the twigs. The flowers have one ovary with locular, basal ovule, stamens are very definite and free. Its anthers open through the valves or the slits. The embryos are very minute. By the November, the dark blue berries fruit ripen. These are very small up to 1 cm. the new foliage proliferates in spring season have purple red, then green color. In the end, after its full growth when previous year leaves fall down, it become of orange red color. Karpura is a tree of many faces as it is a giant, stately forest tree, native of the wet forests of tropical and subtropical regions of Asia. The species Camphora, refer to camphor, an important chemical constituent present in the oil found in the tissues of tree. The botanical name is derived from Greek language. It derived from the word 'kinnamomon' which means spice. This herb is recorded in Sanskrit also. This is also used by Egyptians as early 1485 BC for embalming purposes. Camphor tree is native to China, India, Mongolia, Japan and Taiwan and a variety of this fragrant evergreen tree is grown in Southern United States; especially in Florida.^{1,2} Camphor is obtained through steam distillation, purification and sublimation of wood, twigs and bark of the tree. ³There are many pharmaceutical applications for camphor such as topical analgesic, antiseptic, antispasmodic, antipruritic, anti-inflammatory, anti-infective, rubefacient, contraceptive, mild expectorant, nasal decongestant, cough suppressant, etc. ^{4,5} Camphor is

easily absorbed through the skin and can also be administrated by injection, inhalation and ingestion.⁶ Karpura plays various important properties useful in cure of certain diseases. It acts as antispasmodic, anti-inflammatory, analgesic, antiseptic, anti-infective, rubefacient, contraceptive, cough suppressant, mild expectorant and nasal decongestant. It can also be used for injection, ingestion or inhalation purpose. There is different cultivation seasons for this plant according to their regions. In India and China, flowers flourish in April-May and fruits occur during September to November. In Vietnam, flowering occurs in April to May and its fruiting starts in November – January. This plant has various active chemical constituents like its leaves contain 1% essential oil and wood contain around 3%. The essential oil of the plant contains cineol, pinene, thymol, menthol, 10-15% of 2-bornanon, terpineol and no safrole. But the brown variety has 80% safrole and some terpenoids. Its yellow variety also has safrole, and other components like esquiterpenes and sesquiterpene alcohol.

Morphology

It is a tall tree of height up to 100 feet. The bark is rough on the outside and smoother inside. All parts of the tree have the peculiar fragrance of camphor.

Leaves

The leaves are 2 -4 inches long, yellowish –green in color with a leathery texture. The leaves resemble the leaves of Tejpatra also known as Indian bay leaves.

Flowers

The flowers are yellowish – white in color and occur in clusters.

Fruits

The fruits are dark green in color resembling peas. The fruits dry out and later turn black.

Seeds

The seeds are small and have the peculiar fragrance of karpura.

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Habitat

It is the native of southern islands of Japan and Taiwan. It comes from the wet land forests. Today it is grown in many countries with tropical and subtropical climate as such in India, Sri Lanka, Egypt, Madagascar, South Africa and USA. Taiwan is the first most country which produces karpura, then comes the name of Japan. A tree native to China and Japan and often grown as a hedge plant. Camphor

plant is native of Taiwan, southern Japan, eastern China and India. Now days it is cultivated.

According to ayurveda it has been classified into three categories based on region. (a) Barus camphor, (b) Chinese camphor and (c) Indian camphor.



Occurrence

One of the varieties of this camphor is found in Borneo, Sumatra from where it derives its name. This plant exudes a resinous white fragrant extract. Another variety of the tree belongs to Chinese and Japanese main land. It is also cultivated in India. Another, third variety of camphor is native to the Indian subcontinent and occurs in Dehradun, Maharashtra, Mysore, Kolkata etc.

Classification

Kingdom - Plantae
Subkingdom - Viridiplantae
Infrakingdom - Streptophyta
Superdivision - Embryophyta
Division - Tracheophyta
Subdivision - Spermatophytina
Class - Magnoliopsida
Superorder - Magnoliales
Order - Laurales
Family - Lauraceae
Genus - Cinnamomum
Species - Camphor

Botanical Name- Cinnamomum Camphora Nees & Eberm

Family- LAURACEAE

Names in different languages:

Hindi & Bengali Name- Karpur

English Name- Camphor tree, Camphor laurel

Kannada Name – Pache karpooora

Telugu Name- Karpooram Chettu

Tamil Name- Karpooram, Pachai Karpooram

Marathi & Gujarati Name- Karpur

Sanskrit Synonyms-

Ghanasara,

Chandrapradha – the shining resembles to that of moonlight

Sheetabhra, Sheetala Raja – coolant to touch

Hima, Himavaluka – appears similar to ice particles

Surabhi – emits fragrance

Sphatika – as white as alum

Vernacular Names of the Karpura

- Sanskrit name - Karpura
- Hindi name – Karpur, karpuram
- English Name - Camphor tree, Camphor laurel, Japanese camphor
- Kannada Name – Pache karpooora
- Bengali Name - Karpur
- Telugu Name - Karpooram Chettu
- Marathi name - Karpur
- Gujarati Name - Karpur
- Tamil Name - Karpooram, Pachai Karpooram
- Chinese - Xiang-zhang, Zhang-shu
- Creole - Kafm, bom zangle
- Dutch - Kamferboom
- French - camphrier, camphre, baume anglais, Arbre a camphre
- German – Kampferbaum
- Italian - Canfora, confora
- Japanese - kusu-no-ki, kuso-no ki, hon-sho
- Nepali - Kapur
- Portuguese - Alcanforeira
- Spanish - Alcanfor, alcanforero, alcanfor del Japón
- Swahili - Mkafuri maita
- Swedish - Kamfertraed

Different Varieties- This plant has different kinds of varieties which explained in different ancient texts. These are:-

Dhanvantari Nighantu Sodhala explained Chinaka, Pakva (artificial) and Apakva (natural) varieties of Kurpura.

Kaiyadeva explained there are three varieties – Ishavasa, Hima sanjnaka & Potashraya. Later he explained that there are two types based on their processing, Pakva (prepared) and Apaka (natural).

Raja Nighantu explained around 14 types of Karpura on the basis of Rasa, Guna and Veerya.

Camphor has several chemical varieties, each with different essential oil compositions.⁷The leaf of *Cinnamomum camphora* contains camphor, as the main component along with cineol, linalool, eugenol, limonene, safrole, α -pinene, β -pinene, β -myrcene, α -humulene, p-cymene, nerolidol, borneol, camphene and some other components.^{8,9,10}

Dhanvantari Nighantu Sodhala mentioned Pakva (artificial), Chinaka and Apakva (natural) varieties of Kurpura.

Bhava Prakasha and Raja Nighantu also mentioned similar varieties. According to Kaiyadeva, there are three varieties – Ishavasa, Hima sanjnaka & Potashraya. Later, he quoted that Karpura is two types basing on the processing i.e Pakva (prepared) and Apaka (natural). He further explained that Chinaka variety is artificial camphor. In Raja Nighantu about 14 types of Karpura on the basis of Rasa, Guna and Veerya

Usually, the camphor found on the tree pits and branches is called Apakva (natural) Karpura. The camphor prepared by using distillation procedure is the Pakva (artificial) variety of Karpura. The former variety will be heavier than the later and sinks in the water.

There is a variety called Bhimseni Karpura – which is correlated to *Dryobalanopas camphora* Colebr (DIPTEROCARPACEAE)

Chunekarji explained four varieties of camphor viz.

- 1) Bhimseni or Baras Karpura (D. Camphora)
- 2) Cini or Japani Karpura (D. camphora)
- 3) Patri or Nagi Karpura- *Blumea balsamifera*; *B.Lacera B. desiflora* etc.
- 4) Krutima Karpura- Synthetic variety camphor.
- 5) Now a days camphor is being synthetically prepared by using turpentine. This is however used for offerings to god. It is not meant for medicinal use.

2. *Cinnamomum Camphora* – Chemical Composition

Menthol, Thymol, Phenol, Salicylic acid and Naphthol are amongst the fragrant chemical constituents obtained from this plant. Campher, Campherol, Cineol, Camphene, dipentene, terpineol, candinene, safrole, camphorace, laurolicsine, reticuline etc. Its bark contains a major constituent as cinnamaldehyde that imparts it the very peculiar odor and flavor. The oil is extracted from the leaf that contains eugenol and iso eugenol that imparts it a very harsh odor; besides these it contains minerals a active component known as camphor that imparts it the properties. The plant contains a volatile oil comprising camphor, safrole, linalool, eugenol and terpineol. It also contains lignans (including secoisolaricresinol dimethyl ether and kusunokiol). Safrole is thought to be carcinogenic. The leaf oil is a natural source of linalool (94.9%); also contained citronellal (2.4%).

Camphor – Medicinal Properties

Rasa (taste) – Tikta (bitter), Katu (pungent), Madhura (sweet)

Guna (qualities) – Laghu (light to digest), Rooksha

(Dryness)

Vipaka-Katu – undergoes pungent taste conversion after digestion.

Veerya – Sheeta – coolant in nature.

Effect on Tridosha – Balances Kapha and Pitta Dosha.

Part Used- Niryasa (extract)

Dosage- 125-375 mg, in divided dose per day (The Bhavprakash nighantu with elaborated Hindi commentary by Padmashri prof. K.C. Chunekar, edited by Dr. G.S. Pandey: Edition of 1998, verse 4, page no. 175 to 178.)

Indication

- Mental weakness
- Body ache
- Arthritis
- Fevers
- Skin diseases
- Nervous weakness
- Eyes disease
- Tooth paste
- Cold and cough
- Convulsions
- Mouth related disorders.
- Indigestion
- Abdominal distension
- Weakening of heart muscles.
- Urinary tract related problem
- Bad breath
- Pyorrhoea
- Digestive problems
- Microbial infections
- Blood disorders
- Heart problems
- Muscular cramps
- Joint pains
- Mental debility
- Sinusitis
- Chest congestion
- Obesity
- phrodisiac

Camphor uses:

- **Paste-** paste is used in applying on the skin disorders and in relieving from pain. It also vaso-dilates the area it is applied on.
- **Powder-** it acts as pain killer, it also maintains the blood circulation and strengthens the heart muscles. It helps in dehydrating the body. It removes indigestion and increases appetite. It increases salivary secretion in the body and removes all kind of infections in the oral cavity. It is a good fungicidal and bactericidal. It also acts on the skin related problems by purifying the blood.
- **Decoction-** it acts as good cough remedy as it expels out the excess of mucus accumulated in the respiratory tract. It also helps in curbing the poisoning in the body. It also maintains the urinary tract and provides strength to it.

3. Therapeutic Uses of Camphor

It is indicated in all disease that involves the three dosha i.e. vata, pitta and kapha. It is a very good pain reliever. It is very effective in convulsions and respiratory disorders. It removes the bad odor from mouth. It improves taste of mouth. It stimulates heart and improves blood circulation. It first vaso-dilates the arteries and afterwards constrict them. It has a good role in respiratory system as it helps in expelling extra amount of mucus in the respiratory tract. It improves the condition of throat. It increases the urine output. It also works as aphrodisiac agent when given in calculated amount. Amount of sweat also increases by it. It also works as antipyretic agent hence it decreases the aggravated body temperature. Main indication of camphor is in skin infections and fungal invasion on the body thus acting as anti fungal agent

Camphor is a rare herb which, being coolant, balances Kapha Dosha and reduces fat and cholesterol levels. Camphor used for medicinal use is slightly different than the camphor used in Pooja / Spiritual practices. In the market, you get the edible camphor usually in powder form. Though modern science categorizes it as unsafe for oral consumption, in a very low specified dose, it is useful in certain diseases.

Camphor taken internally in small doses (toxic in large doses) acts as a carminative, reflex expectorant and reflex stimulant of heart and circulation as well as respiration. Also used as a sedative and nervous depressant in convulsions, hysteria, epilepsy, chorea. Topically used as a rubefacient and mild analgesic. Key application Externally in catarrhal diseases of the respiratory tract and muscular rheumatism; internally in hypotonic circulatory regulation disorders, Catarrhal diseases of the respiratory tract. (German Commission E.)

Camphor as an essential oil has the properties of an antispasmodic, stimulant, anti-neuralgic, decongestant, sedative, anti-inflammatory, anesthetic, antiseptic, and nervous pacifier, disinfectant, and insecticide substance.

Camphor was also used in ancient Sumatra to treat sprains, swellings, and inflammation. It also dates back to the 18th century, where camphor was used by Auenbrugger to treat mania. Camphor dissolved in alcohol was used in 1854-1855 to treat the cholera epidemics in Naples.

Camphor is readily absorbed through the skin, producing either a coolness or warmth sensation,^{11,12} and acts as slight local anesthetic and antimicrobial substance.

Camphor is an active ingredient (along with menthol) in vapor-steam products, such as Vicks VapoRub. It is used as a cough suppressant and as a decongestant.¹³

Camphor may also be administered orally in small quantities (50 mg) for minor heart symptoms and fatigue.¹⁴ Through much of the 1900s this was sold under the trade name Musterole; production ceased in the 1990s.

Camphor was used in ancient Sumatra to treat sprains, swellings, and inflammation.¹⁵ Camphor is a component of paregoric, an opium/camphor tincture from the 18th century. Also in the 18th century, camphor was used by Auenbrugger in the treatment of mania.¹⁶ Based on Hahnemann's writings, camphor (dissolved in alcohol) was also successfully used to treat the 1854-1855 cholera epidemics in Naples.¹⁷

It has long been used as a medical substance in ancient India, where it generally goes by the name Karpūra. It has been described in the 7th-century Āyurvedic work Mādhavacikitsā as being an effective drug used for the treatment of fever. The plant has also been named Hima and has been identified with the plant *Cinnamomum camphora*. According to the Vaidyaka-śabda-sindhu, it is one of the "five flavours" used in betel-chewing, where it is also referred to as Candrabhasma ('moon powder'). Camphor has a very healing effect on the skin problems. It effectively controls the inflammation and pain and has a cooling and soothing effect. Any itching, pruritis or rashes are also controlled by the use of camphor locally over the affected area. For this reason it is used in the treatment of many kinds of skin disorders.

- It helps relieve muscle cramps and pains when mixed with an effective oil base for example Mustard oil.
- It is very effective for treating acne and acne scars etc. when mixed with coconut oil, olive oil etc.
- It is a great chest decongestant and can be used in vapor form to relieve severe cough and cold.
- It can be used as an effective treatment for hair loss. It is applied when mixed with coconut oil or mustard oil or any of the other such skin friendly oils and massaged over the head. It can help cure dandruff, head lice, itchy scalp.
- It is a great stimulant for the heart and the whole circulatory system.
- It can be used as a mouth cleanser to cleanse the saliva and improve the sense of taste.
- It improves the digestive secretions but it is only to be consumed in small amounts as over dosage of camphor causes indigestion, nausea and vomiting.
- It is a great diuretic and keeps the urinary system free of bacterial infestations.
- It is used in general to control excessive sweating and burning sensation of skin

4. Research

Camphor is a natural product with many applications in traditional and modern medicines. Traditionally, camphor has been used as a cold remedy for the relief of chest congestion and the treatment of inflammation related diseases such as rheumatism, sprains, bronchitis, asthma and muscle pain.¹⁸ Camphor is usually prepared as a balm, oil or cream to relieve the pain and inflammation in joints and muscles. Camphor oil (20% camphor in cotton seed oil), when applied on the skin produces the feeling of coolness which is related to the stimulation of nerve endings sensitive to cold. Camphor activates some of TRP (transient receptor potential) channels like TRPV1, TRPV3, TRPM8 and inhibits TRPA1, causing warm sensation, excitation and desensitization of sensory nerves, relieving the pain, itch and

irritation in applied area.^{19,20,21} There are many reports which prove that the use of camphor, solely or in combination with other treatments can be very effective for treating and preventing some serious diseases. A cancer study says that the use of camphor odor as a conditioning agent for the cancer cells of YC8 lymphoma in mice could have a suppressive effect on the growth of YC8 tumor, when it is combined with immunotherapy treatment.²² Camphor also can be potential radiosensitizing agent in radiotherapy. Treatment with camphor prior to a radiation showed reduced growth of tumor volume²³

A camphor based drug called 714-X, was developed by a Canadian researcher more than forty years ago and it is reported by some institutions, to be effective on the treatment of some patients with cancer, especially breast and prostate cancer.²⁴ Padma 28 is another multi compound herbal preparation, based on camphor formula which has shown to be effective against chronic inflammatory diseases. The result of a study indicates that Padma 28 has the ability to suppress the development of autoimmune diabetes in female non-obese diabetic (NOD) mice which could be an experimental model for type 1 diabetes mellitus in humans²⁵

There are a number of applications for different parts of *Cinnamomum camphora* tree. The study of *Cinnamomum camphora* leaves extract (CLE) has shown the protective effects against DNA damage and biochemical changes in mice caused by atrazine (AT) which is one of the commonly used grass and weed herbicides.²⁶ The widespread usage of AT has caused contamination in the environment, resulting in genotoxicity and biochemical disturbances in animals and human cells. In this experiment, all the tested tissues which were treated with CLE showed a significant and time dependant decrease in chromosomal abnormalities and DNA damage. Two ribosome inactivating proteins (RIPs), cinnamomin and camphorin are found in the seeds of *Cinnamomum camphora*; studies have shown their inhibitory effect on the cultured carcinoma cells. In addition, cinnamomin has shown to have inhibitory effect on the growth of solid melanoma in the skin of the nude mouse.²⁷ The application of RIPs can be very significant in drug development and crop-plant technology due to their toxicity against viruses, tumor cells, insects and plant fungal pathogens.²⁸

One use of camphor is for carbon nanotubes (CNT). In recent years, the finding of CNT which are made of very light and strong fibers of one atom-thick sheet of carbons, rolled in tubes, have been very exciting developments with many applications in medicinal and industrial fields.²⁹ One of the most important uses of CNT is in the cancer treatments. Single wall CNT can be used as a drug delivery vehicle with high surface area to deliver chemotherapy drugs to the tumor cells and later, these purely carbon-made nanotubes can be excreted out of the body by biliary pathway without causing any toxicity.³⁰ Carbon nanotubes to this point are synthesized from purified petroleum products like methane, benzene, acetylene, etc. However, camphor can be the environment-friendly, alternative new option. Camphor is a botanical hydrocarbon which is very cheap and can be easily cultivated without fear of shortages unlike

petroleum products. Therefore, camphor is an excellent carbon source for the production of a high yield, high purity and high efficiency carbon nanotubes in future.³¹

The essential oil of *Cinnamomum camphora* and some other aromatic camphor containing plants such as sage, rosemary and basil which are widely used in traditional medicines contain monoterpenes. The studies have shown that some essential oil components, especially monoterpenes have suppressive and anti-mutagenic effect in number of human cancer cells including colon cancer, gastric cancer, liver tumor, breast cancer, leukemia and others.³² Most cancer chemotherapy treatments include highly cytotoxic drugs against proliferating cancer cells as well as healthy cells which can be harmful for the body. With a different mechanism of action, essential oils with their monoterpene components can have multiple pharmacological tumor-suppressive activities, mostly without such harm.

Many studies have been done about the various applications and benefits of camphor in pharmaceutical, industrial and environmental fields. Camphor has been used traditionally for many years as a remedy for the relief of pain, inflammation and irritation in the body and skin. Recent studies have focused on the role of camphor in preventing and curing serious and life-threatening diseases, when it is used purely or combined with other treatments. The study on some species in the Lauraceae family, shows that a number of extracts have significant antioxidant, anti-inflammation and anti-tumor activities.³³ These studies indicate that Lauraceae tree species and other camphor containing plants could have very important potential nutraceutical and pharmaceutical applications in the future, [22] taking medicine just another step forward.

5. Practical Uses of Karpura

Digestive system

This plant helps in secreting juices and enzymes helps to improve digestive system.

Anti-oxidant

It acts as antioxidant and suppresses the effect of oxidative stress. So helps to cure kidney and heart problems.

Anti-spasmodic

It provides instant relief from spasms and cramps, so provides relief to stomach.

Anti-inflammatory

It helps to heal muscular pains and aches as well as rheumatism. It also helps to decrease cholesterol levels in the body.

Strong decongestant

It acts as very powerful decongestant as instantly blocks the congestion that can create the problem in bronchi, pharynx, nasal tracts and lungs.

Fungicide

This cures fungal infections that occur on nails and skin.

Cold and cough treatment

It can be taken as steam as it form a covering over the organs and gives relief from throat irritation and treating bronchitis.

Aphrodisiac

This plant helps to stimulate hormones levels that tend to increase sexual desire and urge.

Act as narcotic

It helps to relax the brain and nerves. So act as narcotic.

Antiarthritic

It helps to cure swelling of various body parts so give relief to joints pain and help to improve

Camphor as an Anesthetic & Nervous Pacifier

Camphor when applied to an area causes lack of sensation of the sensory nerves and reduces the severity of nervous disorders and convulsions, nervousness, epileptic attacks, and chronic anxiety; hence it acts as a good anesthetic and is very effective for local anesthesia.

A study on 'The anaesthetic effect of camphor (Cinnamomum camphora)' was conducted, where the aim of this study was to assess the use of camphor (Cinnamomum camphora), mint (Mentha arvensis), and clove (Syzygium aromaticum), essential oils as anesthetics on clown anemonefish (Amphiprion ocellaris).

The result proved that "all of the essential oils exhibited the biological activity of an anesthetic on the specimen A. ocellaris. The 27, 70 and 500 µL L-1 concentrations of clove, mint, and camphor oils promoted surgical anaesthesia after 310.5, 312.0, and 535.0 s (medians) respectively."

Camphor in Treatment of Cancer, Diabetes & Alzheimer's:

Camphor has been used traditionally for many years, on its own and in combination with other chemicals in the treatment for inflammation and irritation in body and skin, and for the relief of pain. It has been used for centuries, all around the globe in the treatment of a variety of symptoms such as inflammation, infection, congestion, pain, irritation, etc.

Several studies have proved that some of the components of Cinnamomum camphora achieve suppressive and anti-mutagenic results on a variety of human cancer cells without harming the healthy cells.

A study on 'Camphor (Cinnamomum camphora), a traditional remedy with the history of treating several diseases' focused on making use of camphor as a quick household medication to solve day to day minor problems; as well as looking into information about the new applications of this traditionally used, naturally occurring medication to treat or prevent some critical acute diseases such as cancer and diabetes.

Since Cinnamomum camphora has been very effective in treating and preventing some serious, life threatening

diseases; Camphor and its components should be investigated further as a viable option in the treatment of different types of cancer.

Additionally, more studies on the application of camphor for patients with memory disorders and brain dysfunctions such as in autism and Alzheimer's are needed.

Camphor for heart, fat and cholesterol –

Chedana, Lekhana – has scraping property, useful in balancing Kapha, in respiratory disorders and in cholesterol / clot deposition in blood vessels

Medohara – reduces fat and cholesterol levels

Camphor acts as a blood thinning agent. It is also used in low blood pressure.

Camphor for oral disorders:

Mukhashoshahara – Relieves mouth dryness

Mukha vairasyahara – relieves bad breath problem. This is why camphor has been used as an ingredient in betel leaf combination – Pan – Tambul

Kanta Doshahara – clears throat.

It relieves toothache.

Vishahara, Vishapaha – Anti toxic

Chakshushya – improves vision, good for eyes, useful in eye disorders

Madakaraka – over-dosage may cause intoxication.

Yogavahi – acts as a catalyst

Dahahara – being a coolant, it relieves burning sensation

Vrushya – acts as aphrodisiac in lower doses. However, higher doses decrease sexual performance.

Medhya – improves intelligence

Kruminashana – relieves intestinal worm infestation

Cheenaka variety of Karpoora is Ati Pittala – increases Pitta Dosh.

Its vapors inhaled lead to relief from chest congestion due to excessive sputum. It is also used in cough treatment.

External application:

Camphor oil is used externally to treat arthritis pain and rheumatism. A teaspoon of Camphor oil is mixed along with 100 ml of olive oil / sesame oil. This is applied externally to improve blood circulation. Camphor is FDA approved for external application in a concentration of 3 – 11 %

In preparing liniments:

Herbal oils are mixed with camphor, menthol, thymol, Eucalyptus oil etc, to prepare pain relieving liniment. This liniment gives a coolant / counter-irritant effect to the liniment. It also makes the liniment to evaporate from the applied body part.

6. Camphor Side effects

For external application, in any product, the camphor concentration should not be more than 11% Artificially prepared camphor prepared from turpentine is not suitable for oral consumption. Do not get confused it with the edible camphor.

Camphor is used in treating low blood pressure. Hence, it is not suitable for people with high blood pressure. It is best to avoid its usage in epilepsy and Parkinson's disease patients.

Its oral usage should only be done under strict medical supervision. It is not meant to be consumed by children, pregnant and lactating mother. However, it can be safely used by external application method. Camphor oil should not be directly given for asthmatic patients to inhale. It may trigger spasms. Camphor poisoning – over-dosage may lead to seizures, confusion, restlessness, nausea, vomiting etc.

Ayurvedic medicines with camphor as ingredient:

Karpoor rasa, karpoor asava, ark karpoor and amrit bindu. Vayu Gulika – used in treating cough, cold, fever etc. It is used mainly in respiratory and gastric conditions. Kombanchadi Gulika – used in treatment of fever, cough and cold

Gandhaka Malahara – An ointment used in eczema and itching skin disorders

Karpoorasava – used in the treatment of vomiting and diarrhoea.

Manasamitra Vatakam – used in Ayurvedic treatment of psychiatric conditions, to improve intelligence, speech problems, etc

Camphor like any other medication should be used for certain patients within the indicated dosages and contraindications. [3] The concentration of 3–11% has been approved by the FDA for topical use as a pain reliever and anesthetic. [23] Camphor and other terpenoid compounds do not accumulate in the environment since many soil bacteria like *Pseudomonas putida* readily degrade these compounds. [24] Although herbal medicines and essential oils have been widely used in folk and modern alternative medicine for many years and have shown to be very effective in curing many symptoms and diseases, the misuse of them can be very harmful for the body causing serious problems. [25] Camphor intoxication has been reported in humans and especially children but mostly because of accidental ingestion or exceeding the recommended amount. [3]

Camphor is toxic at 2–20 g.

Dosage Concentrate—125—375 mg

7. Conclusion

Camphor has been used traditionally for many years, solely or in combination with other treatments for the relief of pain, inflammation and irritation in body and skin. It can also be very effective in treating and preventing some serious, life threatening diseases. Considering the growing number of cancer patients, Cinnamomum camphora and its components should be investigated further as a viable option in the treatment of different types of cancer. In addition, more studies on the application of camphor for patients with memory disorders and brain dysfunctions such as in Alzheimer's and autism are needed.

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