

Catnip Healing from Fever to Digestive Ease

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Abstract—*Nepeta cataria*, generally known as catnip, is a sweet condiment used in folk drug and as a pet toy for pussycats. Its essential oil painting has arthropod repellency exertion, effective against mosquitoes, canvases, ticks, and diminutives, similar to DEET. Nepetalactone, a bicyclic oxygenated monoterpene, is the main emulsion responsible for repellency and cat magnet. *Nepeta cataria* has numerous medicinal properties, including antioxidant, hepatoprotective, antidiabetic, dreamy, depressive, spasmodic, anti-nociceptive, and anti-inflammatory conditioning, Antimicrobial, nematocidal, and Allopathic parcels. Implicit anticancer and insecticidal parcels. Despite its eventuality, the lack of superior inheritable stocks has hindered large-scale product and meeting request demands.

I. INTRODUCTION

Traditional healing and medicinal plants are an ancient practice thousands of years old and founded on people's practices, belief systems, and traditions. Traditional medicine is used commonly for health maintenance prevention and treatment of disease, even diagnosing for health problems. Religious belief is what traditional medicine is founded upon in almost every country in the world. There is an initiative today in trying to develop real guidelines for what it means to research and test for efficacy a traditional medicine by means of clinical research, within the World Health Organization (WHO).

Catnip (*Nepeta cataria*), or catmint or catswort, is a medicinal plant has been in use dates back thousands of years in folk medicine

Nowadays, the term "herb" is used to refer to any Part of a plant, and medicinal herbs like catnip which have played a huge role in world health care; Around an

estimated 80 percent of population use herbal treatments for their primary medical needs.

Medicinal plants contain naturally occurring chemicals which repel disease and insects; in addition, an enormous number of such chemicals are shown or are potential leads towards human pharmaceuticals. There are fundamentally four such groups: alkaloids; glycosides; polyphenols; and terpenes. Plants are sometimes used directly as a raw drug in modern medicine; there is renewed interest in plant medicines since less than 5% of all plants had their medicinal potential explored.

Catnip is in the mint family (Lamiaceae) and its genus *Nepeta* contains roughly 300 species found throughout Europe, Asia, and some parts of North America. *Nepeta* species, including catnip, contain essential oils full of special chemicals referred to as iridoids as well as other chemicals. These plant chemicals are used for a variety of applications and were a component in folk medicine for reducing inflammation, alleviating spasms, [1]combating bacteria as well as viruses, antiseptic[2] use as a diuretic, as well as for heart issues as well as stomach issues. Catnip is especially famous for its activity in cats because of chemical known as nepetalactones, which make cats feel a short-term euphoric or excitable state[3].cat toys contain mostly catnip.

Other than entertaining cats, catnip essential oils as well as extracts are even used in medicine, agriculture, food industries mostly due to their biological activities such as insect repellent, antimicrobial, as well as antioxidant. But scientifically less explored and proven.



II. BOTANICAL INFORMATION

The genus *Nepeta* is set up substantially in temperate regions similar as central and southern Europe, the Near East, central and southern Asia, and some corridor of Africa. It has also come naturalized in North America. Numerous *Nepeta* species are native to specific regions,

especially Southwestern Asia(like Turkey and Iran) [4]. Utmost species are herbaceous and have been traditionally used for medicinal purposes by original and ethnical people in the hilly areas of Turkey, Iran, Korea, Japan, and especially the

Himalayan regions of India, China, Pakistan, Bhutan, and Afghanistan [5]. *Nepeta cataria* (catnip) itself is native to southern Siberia, Central Asia, China, and Eastern Europe but now grows extensively outside its original niche, including in Eurasia, North America, and Africa. It prefers slightly alkaline soil. The factory grows about 25 to 40 centimeters altitudinous, with a slate, hairy, opaque stem. Its leaves are contrary, stalked, heart- shaped with pointed serrations, and hairy underneath, measuring 5 to

7.5 cm long. The flowers are tubular, white with grandiloquent markings, about 0.5 to 1 cm long, and grow in tight harpoons. The whole factory is gathered during its flowering season from June to September. It has a strong scent and a taste analogous to mint.

Scientific Name- *Nepta Cataria* Other name- catnip, Cataire, Catmint, Catnep, Catswort, Field Balm, Herbe à Chat

III. ECOLOGY

The plant becomes resist in well-drained soil with a pH of around 5 to 7.5. It is resilient enough to thrive in the climate of Louisiana [6]. It wants full sun sites and does perfectly in temperatures ranging from around 45° to 65° F over the duration. Catnip (*Nepeta cataria*) is not native to India or Maharashtra, though it grows wild in northern regions like Kashmir at higher altitudes. Its native range covers Europe, Eurasia, the western

Himalayas, and Pakistan, with limited sightings in India confined to places like Kulgam and Srinagar wastelands. No natural growth occurs in Maharashtra's tropical lowlands, but cultivation or seeds are available online [4-6]

Chemical Constituents

Category	Constituent	% Content
Fixed oil contents	Major fatty acids	Palmitic (20.3%), Stearic (18.6%), Oleic (14.2%), Palmitoleic (9.6%), Linoleic (9.3%) [7-10]
Unsaponifiable Matter	Long chain hydrocarbons C sterols	Henetricontane (26%), β sitosterol (18.6%), Hexacosane (10.2%), Stigmasterol (8.9%), Nonacosane (6.8%), Campesterol (6.5%) [10-14]
	Other compounds	α -tocopherol (5.3%), Dodcane (4.0%), Dotriacontane (3.0%), Pentacosane (0.8%)

Essential oil characteristics	Colour	Colourless, mobile liquid
	Aroma	Herb-citrus with geranium like tones
	Main Constituents	Nepetalactones, geraniol, α -pinene
	Lemon catnip chemotype	Nerol, citronellal, neral, caryophyllene oxide
	Note	Oil sometimes lacked nepetalactone (distillation variability) [14-20]
Nepetalactones	Type	Iridoid monoterpenes
	Stereoisomers	Z,Z-; Z,E-; E,Z-; E,E-
	Plant part distribution	Flowers → Sesquiterpenes (54.8%); Leaves → Monoterpenes (54.6–94%, mainly Z,E- nepetalactone); Stems → Acids dominant
	Seasonal effect	Oil yield C profile vary with ecology/season; drying alters aroma
Distillation Effect	N. cataria var. citriodora	Rich in citronellol, geraniol, neral, geraniol
	Steam Distillation	Higher yield, richer in alcohol
	Hydro Distillation	Higher aldehyde Content
Proximate composition	Moisture Ash Crude lipids Crude protein Crude Fibers Carbohydrates	6.2% 7.9% 4.9% 9.1% 15.6% 62.5%
Non- volatile Compounds	-	Other phytochemicals aside from essential oils, contributing to activity [20-22]

IV. PHARMACOLOGICAL EFFECT OF CATNIP

Anti-inflammatory and Anti-nociceptive:

Nepeta cataria leaf extracts and their essential oil have been found to possess good anti-inflammatory and analgesic effects. Experiments conducted using animal models like tail immersion, acetic acid-induced writhing, and carrageenan-induced edema have revealed a reduction in inflammation and pain. [5] This indicates that catnip may have potential uses in managing inflammation and minor pain.

Cytotoxic Activity:

The essential oils and ethanol extracts of catnip have been found to be toxic to different types of cells. Clinical trials using MTT assays and involving human lung cancer cells (A549 cells), bronchial epithelial cells, and keratinocytes showed an anticancer effect in which the growth of cancer cells was suppressed. However, more trials are required. [1][8]

Antimicrobial and Antibacterial Activity:

Catnip, including their essential oils, extracts, and ethanol extracts, possess intense antibacterial

activities. In these passages, various bacteria like *Staphylococcus aureus*, *Escherichia coli*, *Salmonella typhi*, *Klebsiella pneumoniae*, *Pseudomonas aeruginosa*, and fungal organisms like *Candida albicans* were overcome by the potent compounds found in catnip. [16] This underscores the use of catnip for its infection-curing capability that dates back in time. Antioxidant activity:

Stem of catnip (like flavonoids) including the methanolic, ethanolic, and aqueous types, displayed good antioxidant activity. Studies using the DPPH, ABTS, FRAP, and scavenging of nitric oxide free radical methodologies confirmed the ability of catnip to neutralize oxidative free radicals [9]. Antioxidant properties of the plant help protect cells against oxidative illness caused by damage.

Anthelmintic, Nematicidal and Trypanocidal activity:

Leaves of *Nepeta cataria* contained extracts that showed anthelmintic activity against gastrointestinal parasites such as *Haemonchus contortus*. Observations of nematocidal activity were recorded against *Meloidogyne incognita*, while trypanocidal activity was displayed against *Trypanosoma cruzi* [2]. Therefore, there was efficacy in the treatment of parasitic diseases.

Antidepressant and Anxiolytic:

n-hexane and ethanol with catnip leaves have been shown to have anti-depressant and anxiolytic effects using behavioral studies on animals such as the elevated plus maze test, open field test, and behavioral despair test. This is consistent with traditional use of catnip as a tranquilizer[9] and mood elevator.

Liver Protective:

A research study indicated that catnip essential oil has liver-protective effects against liver damage induced by acetaminophen in experimental animals[3]. The results suggest that catnip could safeguard the liver against damaging effects of medications.

Calcineurin Inhibition:

Leaf stems treated with DMSO showed inhibitory activity against calcineurin, which plays an important role in regulating the immune response[17]. Inhibitions indicate that the plant has immunomodulatory activity.

Sexual Behavior s Penile Erection Activities:

Animal studies, which consisted of leaf-infused foods, found that the animal demonstrated increased sexual function, erection, and yawning. There is thus a potential for catnip as a sexual enhancer.

Spasmolytic and Bronchodil:

The essential oil of *Nepeta cataria* showed muscle relaxing activity through the inhibition of calcium channels and phosphodiesterase. The studies on the guinea pig trachea and atria showed bronchodilation, indicating its effectiveness in the treatment of asthma and bronchial spasms.

Larvicidal Activity: Oils isolated from above-ground parts of *Nepeta cataria* exhibited Larvicidal properties against *Aedes aegypti* larvae; thus, their potential use in preventing diseases caused by mosquitoes was supported.

Insect Repellent Activity :The oil of catnip, which has been found to contain generous amounts of nepetalactones, has been found to display strong insect-repelling[3][8] properties against mosquitoes, roaches, and other insects. Several studies suggest that it may prove to be more potent than DEET.

V. MARKETED PRODUCT OF CATNIP

Catnip products are also widely sold as branded products for cats to encourage playing and relaxing, with a human formulation emphasizing herbal teas or supplements for relaxation. However, the catnip formulation meant for consumption by pets cannot be ingested by humans because of the contaminants involved. There are brands available for both applications with Indian accessibility.

Catnip for Cats

1. Yeowww! Catnip- It's a strong organic catnip that provides a fragrant herb free from pesticides that can be sprinkled or made into toys.
2. SmartyKat Organic Catnip – offers a cost-effective, finely grounded organic choice that's safe to use as a scratching post or a bed filling material.
3. HRIKU Organic Himalayan Catnip- is an Indian brand that is suitable for local demands in toy or raw form for relieving stress in cats.

Human-Safe Catnip Products

1. Nature's Sunshine Catnip Capsules come with a dosage of 600 mg and are to be taken with meals as directed.
2. One Herb Catnip Tea from India is used to relieve stress and aid digestion; Prepare by brewing 1-2 tsp per cup; Do Not use during Pregnancy.
3. Full Leaf Tea Company Organic Catnip Tea functions as a herbal drink aimed at relieving stress as well as assisting with sleep.[21-30]

VI. USES

Food Use
Catnip leaves are used to add flavor to gravies, mists and stew dried leaves, seeds or powdered roots can be used as herbal tea
Non Food Use
The fresh, dried and crushed catnip leaves can be used to stuff cloth sacks to make cat toys, which encourages the cat to play, and it appears to be inoffensive and non-addictive.
Catnip oil can be used as natural insecticide.
Thymol extracted from Catnip can be used as germicide and preservative. Thymol is a crystalline phenol with sweet odor and antiseptic properties.[13]

Pharmacological uses:
Antispasmodic, sedative, Diaphoretic (induce sweating) ,anti-inflammatory agents, analgesic, carminative, insect repellent.

Traditional Uses:

N. Cataria has been long associated with the practice of traditional medicines of various people belonging to various tribes in various countries. The research suggests that the young French people used the young leaves and shoots of N. Cataria plant for seasoning. England’s common public hangmen used this plant during the course of their duties as they possess hallucinogenic properties. The tea made from its young leaves has been traditionally used as soporific, sedative, and in various gastrointestinal as well as respiratory diseases like diarrhea, asthma, cough, bronchitis, etc. [12] Some Iroquois, Cherokee, and Okanagan-Colville Indian tribes have used this plant as an antidote in various cases like curing colds, coughs, and stomach upsets. On the other hand, various Iroquois Indian tribes have used this plant to treat the following diseases: diarrheas, vomiting, sore throat, head headaches, etc. Menominee people have used this plant to induce sweating and treat pneumonia, Rappahannock people have used it for relieving pain, and the Cherokee people have used it to relieve ease of fever, blood, and female disorders.

Further, the Cherokee Indians have used this plant in treating various cases like treating convulsions, boils, worms, etc. Shinnecock people have dried the leaves of this plant in order to smoke it, which was further used to relieve rheumatism. Further, the research suggests that the flowering tops as well as dried leaves possess aromatic properties and have been used as diaphoretic, carminative, tonic, antiseptic, emmenagogue, refrigerant, soporific, and stimulant agents in treating various[18] conditions like toothaches, respectively., it has been used in the preparation of insect pheromones as well as various other methods of insect control. Further, it has been used in popular medicine, dyes, and tea preparations in North America. Further, this plant also induces sweating, besides being useful in insomnia, colds, flu, and various fevers as it is prepared as infusion. Additionally, it was also assumed to be beneficial in the alleviation of morning sickness and the prevention of miscarriages and premature deliveries. Besides the above, there were several biological activities

demonstrated by N. Cataria, which include anti-inflammatory, anti-nociceptive, antimicrobial, antifungal, antioxidant, anthelmintic, cytotoxic, feline-attractant, insect repellent, insecticidal, nematocidal, spasmolytic, and bronchodilatory activities, and trypanocidal activities.

Catnip (*Nepeta cataria*) is a traditional herbal medicine known for many years as a gentle herb in India and in many other countries as well. Its uses include it as a calming agent and a sweat inducer.

India, Catnip (*Nepeta cataria*) is far more than just a treat for cats; it has a storied history as a versatile healing herb across the globe. From the peaks of the Himalayas to the colonial gardens of North America, traditional medicine has long relied on this plant to soothe the body and mind. Here is an overview of how different cultures have utilized catnip’s therapeutic properties.

VII. AYURVEDIC AND INDIAN TRADITIONS

In India, particularly in the northern Himalayan regions, catnip is integrated into Ayurvedic practices for its cooling and calming effects.

Digestive Health: It is frequently blended with ginger and fennel to create a potent tea that eases bloating, flatulence, and indigestion by relaxing the intestinal muscles.

Gentle Sedative: Because of its mild nature, it is a preferred remedy for anxiety and restlessness in children or those with fragile health.

Women’s Health: It serves as an antispasmodic to relieve menstrual cramps and acts as an emmenagogue to help regulate menstrual flow.[21][28]

Respiratory Support: Warm infusions are a go-to treatment for managing the symptoms of the common cold and flu.

VIII. EUROPEAN FOLK MEDICINE

European herbalism, especially in France, England, and Italy, has documented the use of catnip since the Middle Ages.[30] **The “Sweat” Remedy:** Historically, catnip was used as a diaphoretic, meaning it was served as a hot tea to induce sweating and break fevers during bouts of influenza.

Culinary Roots: Before it was strictly a medicinal herb, catnip was a common kitchen staple in early Modern England, used to flavor soups, stews, and salads.

Nervous System: It has long been used to treat “hysteria,”

general nervousness, and insomnia.

1. North American Colonial Uses

European settlers introduced catnip to North America, where it quickly became a cornerstone of colonial “home pharmacies.”

Pediatric Care: It became famous as a “nursery herb,” used to soothe teething pain, calm colicky infants, and help restless babies sleep.

General Tonic: Settlers brewed catnip tea as a multipurpose cure for headaches, persistent coughs, and stomach upsets.

2. West and Central Asian Applications

In these regions, various species of the *Nepeta* genus are used to treat more systemic issues.

Organ Support: Traditional practitioners have used catnip to support kidney and liver function, acting as a mild diuretic to detoxify the body.

Respiratory and First Aid: It is used as an anti-tussive (cough suppressant) and, in some folk traditions, applied topically to help neutralize the venom from snake or scorpion

bites.[30][32]

Dosage Form of Catnip Products-

Drug used in traditional medicines include simple birth ways for grown-ups

1. **Herbal Tea/ Infusion** Dried leaves Camp; flowering covers; Used for its anesthetic, carminative, Camp; antispasmodic parcels.(30)
2. **tinctures and Fluid Extracts** Typical fluid extracts used in herbal remedies at a attention of 1.2- 12 grams of dried seasoning material per day.
3. **Decoction** It’s a concentrated liquid drug that can be made through boiling the catnip factory(28)

Topical and External specifics

Catnip is constantly prepared for external use, especially as follow, As a nonentity repellent.

1. **plasters** A 15 catnip essential oil painting oil ointment has been used clinically as an effective nonentity repellent.(29)
2. **Cataplasm** Grated raw or dried leaves applied to the skin in order to reduce lump or relieve tonsillitis.
3. **Essential oil Sprays** Dilutions ranging from 15 to 30 are employed for repellent efficacy in the control of stable and horn oils.(21)

Advanced and Experimental Dosage Forms-

There has been an ongoing quest for new delivery styles

aimed at enhancing both the stability and energy of the active constituents set up in catnip through the following

- i. **Microcapsules** Encapsulated catnip oil painting oil has been made in pilules analogous as 500 mg to meliorate the shelf life of the repellent action of catnip.
- ii. **Charcoal Micropowder** Combined with other gravies like *Rhizoma coptidis* to maximize bioavailability and sustain the release of certain alkaloids.
- iii. **Amended Chow** For the evaluation of antidepressant- suchlike exertion in brutes, 10 catnip- amended chow is employed.(35)

IX. CONCLUSION

Catnip (*Nepeta cataria*) is rich with excellent medicinal properties which create our urge to search other medicinal significance of catnip plant. Catnip essential oil exhibits a broad spectrum of biological activities, not just cat stimulation, but relaxant, antispasmodic, insect repellent, and other allopathic activities. The catnip plant open a new window for pharmaceutical industries by avoiding various diseases in a safe way.

The oil is usually dominated by the nepetalactone isomers, but compositions have varied extensively according to seasonal, environmental, and geographical conditions. There are many *Nepeta* species reported and although several of them have been described with regard to essential oil compositions and bioactivities, there are others to be explored and other bioactivities to be searched. Factual facts illustrate the extensive therapeutical application of catnip plant.

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