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### REVIEW ON “EXTRACTION OF IN VITRO ANTHELMINTNIC ACTIVITY USING MENTHA SPEAR MINT”

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#### ABSTRACT

*Mentha cardifolia* [family: Lamiaceae], as known as Mint or spearmint is daily usage herb used to flavor food and herbal tea. Traditional medicinal plant in southeast Asia and Indo-China. It has been shown to possess antioxidant and antihypertensive effects. It is also used in the cure of headache, toothache, arthritis and dysmenorrhea. *Mentha* species are widely used in savory dishes, food, beverages and confectionary products. Different parts of the plant including its leaves, flowers, stem, bark and seeds have been also used widely in traditional folk medicine as antimicrobial, carminative, stimulant, antispasmodic and for the treatment of various diseases such as headache and digestive disorders. The present work aims at evaluation of anthelmintic property of *Mentha cardifolia* leaves extract against Indian adult earthworm *pheritmaposthuma*. Albendazole was used as the standard drug. Petroleum ether, chloroform, ethanol and extracts at concentration of 35mg/ml. Each were evaluated for anthelmintic activity. The time taken for paralysis and death of each worm were determined among chloroform ethanol, aqueous and petroleum ether extracts, chloroform extract by including paralysis within 2 min and death within 5 min. This shows the better anthelmintic activity when compared to standard drug.

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## INTRODUCTION

*Mentha piperita* (*menthacardifolia*) is a popular herb tonic wide, It is generally, used as a popular home remedy for digestive ailments from past two centuries in India, It is a perennial glabrous, strong scented herb the family MENISPERMACEAE The volatile Oil obtained from Antinociceptive Anti-inflammatory, Anti microbial & Antioxidant activity Helmentic infectionis one of the problem that effects human and live stock in the World, This problem commonly occurs in children. The Helmentic infection caused due to nematodes, trematodes, cestodes, The Helmentic infection would be prevented by maintaining environmental sanitary and treatment as well as Pharmacotherapy using synthetic drugs Traditional medicine as alternative one of them is MENTHA CARDIFOLIA. This review provide updated information about the properties of mentha cardifolia one of the Anthelmintic Plants which is being investigated for it mechanisms.

**COMMON NAME:** mentha spicata, mentha piperita, Mint

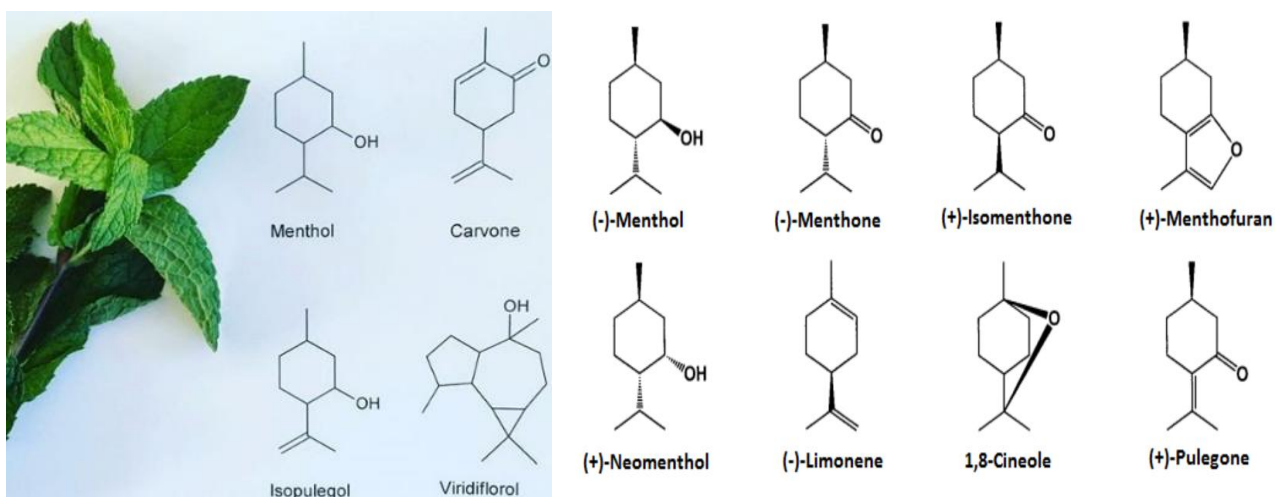


Leaves of MENTHA SPEAR MINT.

## BIO ACTIVE COMPOUNDS OF MENTHA CARDIFOLIA;

Many Plants Contain a wide variety of chemical substances that have significant biological effect on humans. Whether used for what Plant give the nature struggle for survival a number of thing's that they are already produced in their own structures. Plants also have living next In these grow and develop, feed & build up the next generation like others Creatures in this areas They are Subjected to while living many biotic & abiotic process while living they lives the Plants protected themselves from these factors in other ways they have no chance of getting ways or escaping. In order to protect themselves, plants Produce a number of Substances under the name of Secondary minerals during photosynthesis. These Secondary products are Very Important ingredients for plants in terms of maintaining harmony. Protection, defense and continuing their generations

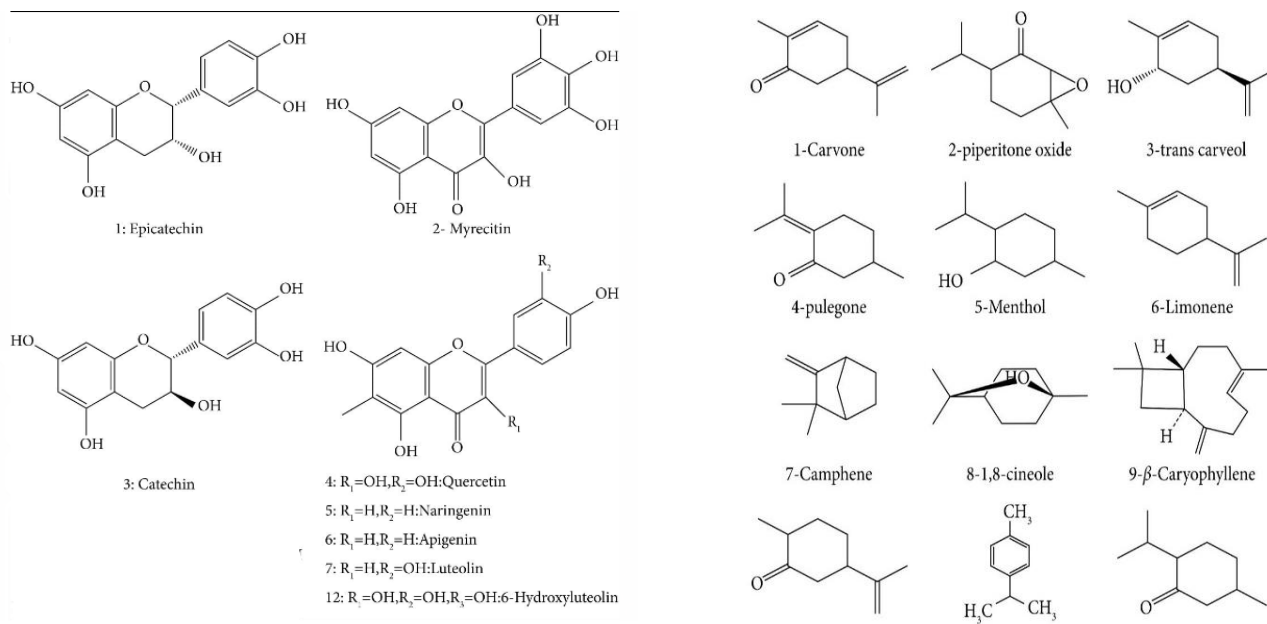
## STRUCTURES:



Chemical structure of bio active compounds in MENTHA CARDIFOLIA.

## NOMENCLATURE

The word mint descends from the Latin mentha, which rooted to the minthe meaning spearmint. The genus mentha (also known as mint, from Greek minta mi-ta is a genus of plants in the family (mint family) mentha cardifolia the genus has subcompolitan distribution across Europe. Africa (South Africa) Asia, Australia, North America and South America. It's a species found in many environments, but most grow in wet environments and moist soils, Greek mythology as minthe transformed into mint Sanskrit - mantha, mantha (Prema serratifolia) Spain & Central South America mint is known as mentha, Lusophone, Countries' especially in Portugal mint species are popularly known as Hortela. In many Indo-Aryan language it is called in many Indo Aryan language it is called pudina (Hindi) Sindhi (Bengali) version persian pudna & puna meaning Pennyroyal



## Description of Mentha Cardifolia;

### LEAF:

The green colour range from dark green and gray-green to purple, blue and sometimes, pale-yellow. They have wide spreading underground & overground stolons & erect square branched stems, mint will grow 10-20'cm (4-48 inches) Tall and leaves are arranged in opposite pairs, from oblong to lanceolate, often downy & with a serrated margin. The flowers are produced in long bracts from leaf axils. They are white to purple the fruit is a nutlet, containing one to four seeds.

### Traditional uses of mentha:

Mentha species, one of the World's most popular herbs, are widely used in working, in cosmetics and as alternative or Complementary therapy, mainly for the treatment of Gastrointestinal disorders like flatulence, Indigestion, nausea, vomiting, anorexia & ulcerative colitis. To treat throat ailments. The devotion of is used to treat diabetes, Headache & tiredness, uses to treat bronchitis, chest pain, Lung disorders, Kidney, diuretics & aphrodisial used to treat skin diseases

## MATERIALS AND METHODS

### Raw materials:

Raw materials fresh Mentha leaves was cultivated and collected from the local farms.

### Chemicals & glassware:

Chemicals, reagents, glassware and processing equipment required

## STEPS IN PREPARATION OF MENTHA POWDER

**Pre-treatment to mentha:** Fresh Mentha leaves was were washed using water to remove adhere material then chop into pieces with knife. Then 2% NaCl was sprinkled and kept that for 15 minutes. Then by using muslin cloth to remove the excess water in leaves.

**Drying:** The treated leaves are uniformly spread in a single layer on steel trays & shade dry for 2 days in room temperature

### Preparation of mentha leaves powder:

Mentha Cardifolia powder was prepared by grinding the dried leaves of mentha and pulverized continuously till the whole sample passed through 160-micron sieves. Obtained powder weighed and packed in HDPE pouch.

**DIFFERENT EXTRACTION METHODS:****Method 1: EXTRACTION USING SOXHLET APPARATUS**

SOXHLET extraction was carried out using a Soxhlet apparatuses. A 20g of grinded mentha leaves was added into round bottom flask with 200ml of different solvents each. The Soxhlet extraction takes about 6 hours to complete. The solvents were added distilled water, ethanol, dichloromethane & Petroleum ether with boiling point 100c, 78.37c, 39.6c & 42-62 at 1 atm respectively. The next step is solvents were removed via rotary evaporator at a temperature. Slightly above the boiling point of the solvents and remaining oil yield then were stored in freezer (20) for further analysis.

**Methods 2: EXTRACTION USING SONICATOR**

The dried powder was extracted with methanol using a sonicator at 25c for 30min and then kept in a shaking incubator for 24hr at 250rpm and 30c. The extract was centrifuged at 1200rpm for 10min. The solvents were then evaporated using a rotary evaporator at 45c, and the extract was weighed and kept at -80c until use. Crude seed extract also prepared in a similar manner.

**ANTHELMINTIC ACTIVITY:**

The extract of various plant parts of mentha cardifolia including leaf, seeds have been investigated and found to be pharmacologically active against helminths.

**CONCLUSION**

Leaves existing various biological activity such as anti-inflammatory, anti-bacterial, anti-viral, scolicidal, antitumor, neuroprotective among that one is anthelmintic activity. This present review has given the information regarding extraction, chemical constituent of Mentha Spear Mint.

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