ISSN: 0975-833X

Available online at http://www.journalcra.com

International Journal of Current Research
Vol. 8, Issue, 07, pp.34120-34123, July, 2016

INTERNATIONAL JOURNAL OF CURRENT RESEARCH

RESEARCH ARTICLE

PHARMACOGNOSTICAL REVIEW OF *MENTHA ARVENSIS* LINN

Nazima Ameen and *Sabeeha Shafi

Department of Pharmaceutical Sciences, University of Kashmir, Hazratbal, Srinagar, Kashmir, Jammu & Kashmir (India)

ARTICLE INFO

Article History:
Received 20th April, 2016
Received in revised form
09th May, 2016
Accepted 25th June, 2016
Published online 16th July, 2016

Key words:

Mentha arvensis, Herb.

ABSTRACT

Mentha arvensis Linn belonging to family Lamiaceae is native to the temperate regions of Europe and western and central Asia, east to the Himalaya and eastern Siberia, and America. It is a herbaceous perennial plant growing to 10–60 cm (rarely to 100 cm) tall. The leaves are in opposite pairs, simple, 2–6.5 cm long and 1–2 cm broad, hairy, and with a coarsely serrated margin. The flowers are pale purple (occasionally white or pink), in clusters on the stem, each flower 3–4 mm long. The plant is widely distributed throughout India.

Copyright©2016, Nazima Ameen and Sabeeha Shafi. *This is an open access article distributed under the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.*

Citation: Nazima Ameen and Sabeeha Shafi, 2016. "Pharmacognostical review of *Mentha arvensis* Linn", *International Journal of Current Research*, 8, (06), 34120-34123.

INTRODUCTION

Kashmir, with its megabiodiversity and knowledge rich ancient traditional systems of medicine and local health traditions, provides a strong base for the utilization of large number of plants in general healthcare. One of the plants is *Mentha arvensis* Linn. Vaious parts of the plant viz., leaves, aerial part and oil have been used for evaluating different pharmacological activities. Phytochemical constituents have shown considerable beneficial effects. This review gives a more detailed account of the whole plant so that more activities can be done on this plant which we often use in our daily cuisines.

***Mentha arvensis* Linn.**

Taxonomic classification

Kingdom : Plantae
Division: Magnoliophyta
Class: Magnoliopsida
Order: Lamiales
Family: Lamiaceae
Genus: Mentha
Species: M. arvensis

Corresponding author: Sabeeha Shafi,
Department of Pharmaceutical Sciences, University of Kashmir, Hazratbal, Srinagar, Kashmir, Jammu & Kashmir (India)

Vernacular names of the plant

Sankrit: Pudina
English: Mint
Kannada: Chetamarugu
Marathi: Pudina
Hindi: Pudina

Plant parts used: Leaves, aerial parts, oil. (Herbal medicine research centre, institute for medical research, kuala Lumpur. Compendium of medicinal plants used in Malaysia, 2002)

Distribution

An erect aromatic annual herb having pleasant odour leaves and is classified as industrial crop, distributed throughout Western Himalaya, also cultivated throughout India. It is mainly cultivated in damp soil.

1. Chemical constituents: (Dr.Duke's phytochemical and Ethnobotanical Databases, 1985)

Mentha arvensis consists of menthol (35%-70%), menthone (15%-30%), (-)-menthyl acetate (4-14%) and pulegone (1-4%). *Mentha arvensis* also consists of β pinene, β-phellandree, cadinene, methyl esters, amyl alcohol, acetaldehyde, cadinene, dimethyl sulphide, α-pinene, sabinene, terpinoline, trans-ocimene, α-thujone,β-thujone, citronellol and luteolin-7-O-

rutinoside, limonene (1.0-5.0%), cineole (3.5-14.0%), menthofuran (1.0 -9.0%), isomenthone (1.5-10.0%), isopulegol (max. 0.2%), pulegone (max. 4.0%) and carvone (max. 1.0%).

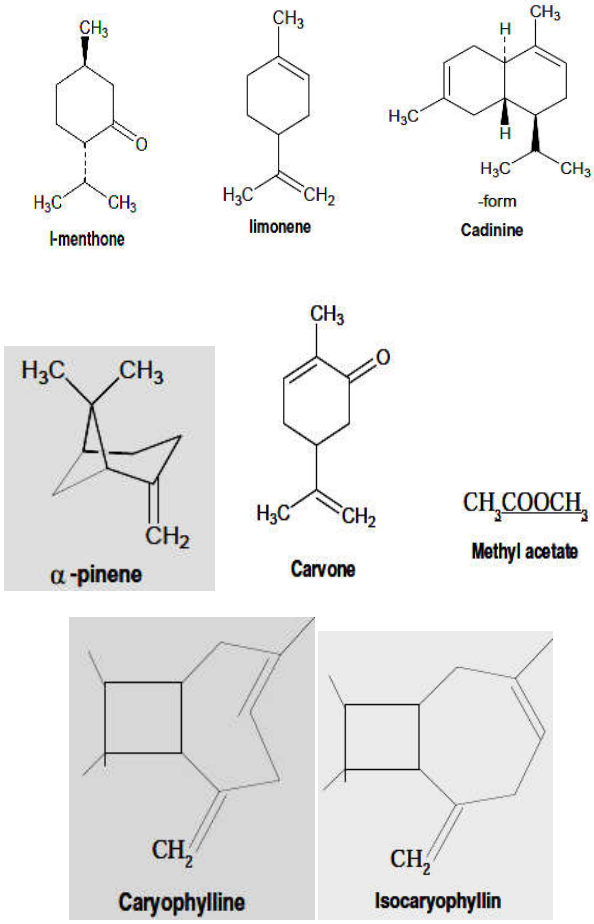
Morphological characteristics of *Mentha arvensis* Linn. (Blamey and Grey Wilson, 1989)

Plant -	An erect aromatic herb up to 60 cm height
Stem -	The color of the hairy stem varies from brownish- green to green.
Leaves -	Simple green leaves with toothed edges. They grow somewhere between 2 cm and 6.5 cm in length and 1 cm and 2 cm in breadth. They grow in opposite pairs. Each leaf in the pair is aligned in opposite directions to each other.
Flowers -	Flowers are pale purple; however, white or pink flowers can also be seen in some subspecies. They grow in clusters, each flower being an average 3-4 mm in size.

Various chemical constituents of *Mentha arvensis* Linn.

Traditional uses

In the traditional medicine the plant under study (*Mentha arvensis* Linn.) has been used as *antiseptic, carminative, Headache, stomachic, and a refrigerant. It is also used in Helmenthiasis, flatulence, Vomiting, Diarrhea, cough, Asthma, Bronchitis, skin diseases, dental caries, Jaundice, fever, general weakness* (Kirtikar *et al*., 1984), hypertension and ischemic heart diseases (Saima Gul *et al*., 2014).



Reported pharmacological action

Scientifically the plant has been proved to be useful in the following conditions:

Antiulcerogenic Effect: Petroleum ether, choloroform and aqueous extract of *Mentha arvensis* Linn. are repoted to have a protective effect against acid secretion and gastric ulcers in ibuprofen plus pyloric ligation,0.6mol/L HCl and 90% ethanol induced ulcers. (Berman *et al*., 1999)

Inflammatory bowel syndrome (IBS): A research on the oil of *Mentha arvensis* Linn. has revealed a protective role of mint oil in the inflammatory bowel syndrome (IBS) (Hunt *et al*., 2000).

Antibacterial: A study on the ethanolic extract of *Mentha arvensis* Linn. showed that the ethanolic extract inhibit the growth of E coli, S.aureus, P.aeruginosa, S. flexineri and K. pneumoniae (John A De Britto, Steena Roshan, 2012).

Antifungal: The hydroalcoholic extracts of *Mentha arvensis* Linn. showed antifungal activity against C. Albicans and a potential use for human antifungal use (Bina and Usha, 2013).

Cisplatin induced nephrotoxicity: A study on hydroalcoholic extract of *Mentha arvensis* Linn. has evaluated the nephroprotective activity of hydroalcoholic extract of the leaves of *M. arvensis* Linn. hydroalcoholic extract (MAHE) in the cisplatin-induced nephrotoxicity (Rajneesh Kumar Singh *et al*., 2014).

Anticancer: The study on the anticancer activity of *Mentha arvensis* Lin*n.* has shown in vitro cytotoxicity effect against human cancer cell line (Help G2 cell line), significant growth suppression and induction of apoptosis (Vikas Sharma and Shabir Hussain, 2014).

Hepatoprotective: The aqueous extract of *Mentha arvensis* Linn. have found to stimulate liver regeneration after 67% partial hepatectomy in rats (Kowti rajash *et al*., 2013).

Antidiabetic: The methanol extract of the root and aerial parts of *Mentha arvensis* Linn. were found to possess significant hypoglycaemic activity against alloxan induced diabetes (Mohd Habibullah Khan and Yadava, 2010).

Anti Candida: A study on the essential oil and ethanolic extract of *Mentha arvensis* Linn. showed anti-Candida activity (Karla *et al*., 2012).

Analgesic: The ethyl acetate, ethanolic and aqueous extract of both root and aerial parts of *Mentha arvensis* Linn. showed a very good central and peripheral analgesic activities (Nripendra Nath Biswas *et al*., 2014).

Antiallergic: Study on anti-allergic activity using a histamine inhibitory assay showed the ethanol extracts of leaf and root of *Mentha arvensis* Linn. markedly inhibited the release of histamine from mast cells (Farnaz Malik and Shahzad Malik, 2012).

Anti-inflammatory: On anti-inflammatory testing of the aqueous, ethanolic and methanolic extracts of *Mentha arvensis* Linn. using histamine induced paw edema model showed anti-inflammatory effect suggesting the presence of compounds capable of inhibiting histamine release from the mast cells and/or block histamine receptors (Farnaz Malik and Shahzad Malik, 2012).

Insecticidal: A research has revealed that the essential oil of the leaf of *Mentha arvensis* Linn. showed repellency against larvae and adults of T. castaneum, they strongly repels T. castaneum even at low concentration. The percent repellency for *Mentha arvensis* Linn. was 97.66% (Hana H. Mohammed, 2013).

Anti arthritic activity: The Methanolic leaf extracts of *Mentha arvensis* Linn. are reported to possess anti arthritic activity by complete freunds adjuvant induced arthritis arthritis induced male albino rats (Jaya V Sankar Reddy, 2014).

In vitro thrombolytic activity: The Ethanolic, Methanolic, Acetone and chloroform extracts of *Mentha arvensis* Linn. are reported to possess significant blood clots lytic activity In vitro (Shah Md. Shahik *et al*., 2014).

Sedative and Hypnotic: A study on methanolic and aqueous extracts of *Mentha arvensis* Linn. evaluated on mice showed potentiation of phenobarbitone induced sleeping time (Verma and Arora, 2003).

Anti-helmintic: Study evaluated the anti-helmentic activity of the petroleum ether extract of *Mentha arvensis* Linn. against Ascardia lumbricoides which resemble the nematode Ascaris lumbricoides (Nikesh *et al*., 2011).

Radio protective: Study of the aqueous and ethanolic extract of *Mentha arvensis* Linn. on mice showed benefit with pretreatment of mice with reduction in the severity of symptoms of radiation sickness and mortality (Ganesh and Manjeswar, 2002).

Antibiotic Resistance–Modifying: A report on the ethanolic extract of *Mentha arvensis* Linn. showed a potentiating effect on Gentamicin and presents a potential against bacterial resistance to antibiotics (Marta cristina texeira durate, 2005).

Conclusion

The utilization of herbal plants has drawn immense interest as they could accommodate therapeutic response and are promising candidate to be developed as pharmaceutical products like antioxidants, antibacterial, hepatoprotective, anti-inflamatory agents etc. *Mentha arvensis* is one of these herbal plants which has proved beneficial in a number of fields and research is going on.

REFERENCES

Berman BM, Swyers JP, Kaczmarczyk J. 1999. Complementary and alternative medicine. Herbal therapies for diabetes. *J Assocacad Mino Phys*, 10, 10–14.

Bina W, Usha B. 2013. Antifungal activity of essential oils and crude extracts of some aromatic plants against *Fusarium root Trichosanthes Dioica*. *Global Journal of Science Frontier Research Biological Sciences*, 13(3).

Blamey M, Grey Wilson C. 1989. Flora of Britain and Northern Europe. *ISBN*, 340.

Dr.Duke's phytochemical and Ethnobotanical Databases.

Farnaz Malik, shahzad Malik. 2012. Photochemical analysis, Antiallergic and anti inflammatory activity of *M.arvensis* in animals. *African journal of Pharmacy and Pharmacology*, 6(9), 613-619.

Ganesh CJ, Manjeswar SB. 2002. Influence of the leaf extract of *Mentha arvensis* Linn. (Mint) on the survival of mice exposed to different doses of gamma radiation /D01 10.1007/s00066-002-0841-y/Strahlentherapieund onkologie, 2, February, 178.

Hana H. Mohammed. 2013. Repellency of ethanolic extract of some indigenous plants against *Tribolium confusum*. *IOSR Indian journal of agricultural and veterinary sciences*, 2(6), 27-31.

Herbal medicine research centre, institute for medical research, kuala Lumpur. Compendium of medicinal plants used in Malaysia.2002; 2: 136.

Hunt LM, Arar NH, Akana LL. 2000. Herbs, prayer, and insulin: use of medical and alternative treatments by a

group of Mexican-American diabetic patients. *J Fam Pract.* 49, 216–223.

Jaya V Sankar Reddy. 2014. A review of anti arthritic activity of some medicinal plants. *JGTPS*, 5(4), 2061-2073.

John A De Britto, Steena Roshan, 2012. Antibacterial activity of selected species of Lamiaceae against Human pathogens. *Indian journal of Natural products and resources,* 3(3), 334-342.

Karla KAS, Edinardo FFM, Tintino, Saulo R, Braga, Maria FBM, Guedes, Glaucia MM. 2012. Anti candida activity of *Mentha arvensis* and *Turnera ulmifolia. Journal of Medici J Med food*, 15(3), 322-324.

Kirtikar KR, Blatter E, Cauis JF, Mhaskar (Eds), Basu BD. 1984. Indian Medicinal Plants Vol III. *Periodical expert book agency Delhi.* 3, 401.

Kowti rajash, AHM, Vishwanath swamy, Shivakumar S, Inamdar, Vedamurthy J, Abdul NK. 2013. Hepatoprotective and antioxidant activity of ethanol extract of *Mentha arvensis* leaves against carbon tetrachloride induced hepatic damage in rats. *International journal of Pharma tech research*, 5(2), 426-430.

Kumbhar, Umesh R. Screening of *Mentha arvensis* Linn. for anthelminitic activity. /hdl.handle.net/123456789/2376.

Marta cristina texeira durate. 2005. Anti-Candida activity of brazillian medicinal plants/doi:10.1016/j;jep.2004.11.016. *Journal of Ethnopharmacology,* 28 february 97(2), 305-311.

Mohd Habibullah Khan, PS Yadava, 2010. Antidiabetic plants used in Thoubal district of Manipur, Northeast India. *Indian journal of traditional knowledge*, 9 (3), 510-514.

Nikesh *et al*. 2011. Comparative In vitro anthelminthic activity of chloroform and acetone extract of *Mentha piperata*. *Int J of Pharm and Biol Archives,* 2(3),945-948

Nripendra Nath Biswas, Subarna Saha, Mohammed Khadem Ali. 2014. Antioxidant, Antimicrobial, Anticytotic and Analgesic activity of ethanolic extract of *Mentha arvensis L. Asian pacific journal of Tropical Biomedicine*, 4 (10), 792-797.

Rajneesh Kumar Singh, Rupash k Gautam, Karchuli MS. 2014. Evaluation of nephroprotective activity of *Mentha Arvensis l.* in cisplatin induced nephrotoxicity. *Asian Journal of Pharmaceutical and Clinical Research,* 7(4).

Saima Gul, Humaira Gul, Rukhsana Nawaz, 2014. Possible mechanism of action of *Mentha arvensis* in Cardiovascular Diseases. *International Journal of Endorsing Health Science and Research,* 2(1).

Shah Md. Shahik, Mohd Omer, Faruk Sikder. 2014. Invitro thrombolytic and Cytotoxic evaluation of *Mentha arvensis*. *IOSR journal of Pharmacy and biological sciences*, 9(5), 97-102.

Verma S.M, Arora H. 2003. Anti inflammatory and Sedative and Hypnotic activity of the leaves of *Mentha arvensis. Annual science of Life*, 23(2).

Vikas Sharma, Shabir Hussain, 2014. Invitro anticancer activity of extracts of *Mentha species* against Human cancer cells. *Indian journal of Biochemistry and Biophysics*, 51, 416-419.

****