



Herbal Significance of Horse Mint (*Mentha longifolia*) [A review]

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Abstract

Mentha longifolia is a herbaceous plant and it is a type of mint which is bigger than other mints. It is also herbal medicine. Now a day's *mentha longifolia* has great importance and it is used as a traditional medicine for the treatment of fever and jaundices and scientific research found the phytochemicals of the plant and the different extractions as chemical compounds, bio compounds and botanical uses. The plant *Mentha longifolia* (horse mint) is found in Gojal upper Hunza especially in moorkhun Gojal. *Mentha longifolia* (whadaan) is used for the treatment of jaundice, intestinal infection, fever and cough. Its height is between 0.5-1m and the leaf is longer about 9cm. The ancient people use this plant as a tea and as a salad. The horsemint is widely spreader plant it has a unique smell and taste. *Mentha longifolia* grow in July to September and some people dried it with the whole parts of the plant for further use. It is also treated for the healing of wounds as a paste of its leaf. All the parts of *Mentha longifolia* are essential for the cure of diseases.

Keywords: *Mentha longifolia*; Herbal medicine; Phytochemicals; Traditional uses.

Introduction

Mentha longifolia is a perennial, herbaceous plant and one of the bigger mints. *Mentha longifolia* is also herbal medicine it can reach a height between 0,5m and 1m.the leave get 9cm long. Due to that, the mint was named 'longifolia 'meaning longleaf. The older leaves are greyish-green but the young leaves are fresh light green .the flowers are 3-4 mm long and produced in the top of the tall branch which is in the cluster form. The flowering period starts in

July and ends in September. *Mentha longifolia* is also found in the essential oils. In the research, menthol is the most important component which is responsible for the pharmacological effects of the plant and the menthol is (19.4-32.5 %). The root is a rhizome. With that rhizome, the mentha longifolia can spread itself. The horsemint contains essential oils 0.23-2.03% and flavonoid and phenolic acid. All parts of *Mentha longifolia* like leaves, root, stem etc for the use of flavouring, perfumery, and pharmaceuticals it can also use as a tea for the digestion and stimulant. Horsemint has also an antimicrobial and antioxidant activity.

Occurrence and botanical description

Mentha longifolia originated from Asia, Europe, and South Africa. It is mainly found in rivers of spring, on bank, ditches and in a wet meadow habitat. *Mentha longifolia* is a very variable herbaceous plant. It has separated rhizome, the stem is 80-150cm tall and it is a perennial growing to 1m (3ft-3in) it separate as a colony. *Mentha longifolia* is propagated mainly vegetative from cuttings and rhizome. Its leaves are broad; long and greenish and below the leaves are white. The flower of *Mentha longifolia* is purplish which is a cluster in number. The flowers are found on the tall branched area and it has tapering spikes. when horse mint grows its flowers begins from September to October. *Mentha longifolia* is a hermaphrodite has both female and male organs stigma and anther respectively and it is pollinated by insects, wind and by bees the flowers attract all wildlife. *Mentha longifolia* needs a soil which is rich in nitrogen and it cannot tolerate direct sunlight.

Medicinal use of *Mentha longifolia*

This is used as a domestic herbal remedy. The antiseptics properties of mentha longifolia are used and its valuable effect on the digestion. The leaves and flowering stems are antiasthmatic and antispasmodic. A tea made from the leaves has traditionally been used in the treatment of fevers, headaches, digestive disorders and used for jaundices. The leaves are harvested as the plant comes into flower and can be dried for later use. It is also used for chronic cough, cold and gastrointestinal disorder.

Use of *Mentha longifolia* in Gojal hunza

Mentha longifolia is a herbal medicine which is found in Gojal in large amount so, in areas of Gojal people use it as medicine from ancestor's time. In the local language of wakhi we called (whadaan) this plant is very common in khunjerab, avgarch and these places are moist and shady. In our area, we use this for jaundice, for wounds healing, Stomach disorders and also use as a tea. Some people use this as a salad in cooking remedies. This plant is dried for long term used in winter. Its taste is not good but it cures the disease quickly. The local people use the whole part of the plant for the treatment of jaundice regularly as a tea and take half cup once a day so, it finishes the yellowish colour which is caused by jaundice. It can also be used externally to fight skin diseases like dandruff. *Mentha longifolia* has antimicrobial and antioxidant activity. The oil of horsemint is used as an insecticide.

Edible parts of *Mentha longifolia*

They are used as a flavoring in salad and cooked foods. Herb tea is made from leaves it has a peppermint taste. *Mentha longifolia* can also help against insect stings. A compress with mint on the insect sting mitigates the pain and the itching and cools from outside.

Propagation

Germination is usually fairly quick. Prick out the seedlings into individual pots when they are large enough to handle and plant them out in the summer. *Mentha* species are very prone to hybridization, seedlings and the seed cannot rely on the breed true. Even without hybridization, seedlings will not be informed and so the content of medicinal oils etc will vary. When growing plants with a particular smell it is best to propagate them by division. Division can be easily carried out at almost any time of year; though it is probably best done in the spring or autumn to allow the plant to establish more quickly. Virtually any part of the root is capable of growing into a new plant. Larger division can be planted out direct into their permanent position.

Cultivation of *Mentha longifolia*

Mentha longifolia is an easily grown plant in soil but the soil is not too much dry. Horsemint is easily grown in clay soil and the sunlight is best for the production of essential oil but the plant also needs semi-shade for better growth. It can grow in suitable PH acid, neutral and alkaline soils. Horsemint especially produces in moist soil and damp places. Most horsemint has separated roots or rhizome. We can plant them in a container with a suitable condition, soil, sunlight etc we also grow them in gardens it has great fragrances and is easy to use as a salad and cook them. The flowers are attractive and purplish so butterflies and bees attract toward them. *Mentha longifolia* has more values for its antiseptic properties and it has great benefits on digestion. The flowers and leaves are important due to their antiasthmatic and stimulant properties. The leaves are harvested as the plants come into flower and it can be dried for later or further uses. The essential oil in the leaves is antiseptic so the use of horsemint in large amount is toxic.

Phytochemicals analysis of a plant

Mentha longifolia also contain important oils 0.23-2.03 flavonoid and phenolic acid. All the parts of *Mentha longifolia* or the essential oil are used for flavouring, perfumery and in pharmaceuticals.

Antimicrobial activity

Mentha longifolia is treated for throat irritation, sore throat and mouth scientifically research has shown that the genus of *mentha* plants have significant antimicrobial activities. The important and essential oil of horsemint has antimicrobial activity against some bacteria e.g. *Escherichia coli* and *Microsporium canis*. It's due to the occurrence of oxygenated monoterpenes in their chemical compositions. The essential oil of horsemint is stronger and wide as compared to methanolic extract. The studies of horsemint oil have shown that it has antifungal and fungicidal agents against ringworm and other fungal infections. The gram-positive bacteria are mostly exposed by the essential oil of horsemint as compare to gram-negative bacteria Menthol extract is an antimicrobial and antifungal agent and also effective against dental bacteria.

Effects on the nervous system

The research on *mentha longifolia* has shown that the extraction of the aqueous leaf of horsemint has antinociceptive and antipyretic properties. *Mentha longifolia* contains (50) lethal dose values which are obtained for oral and intraperitoneal administration of the plant extract is not toxic. *Mentha longifolia* essential oil shows a stronger decrease in the central nerves system and physiological activities.

Gastrointestinal system

The leaves of *Mentha longifolia* are used in herbal medicines which are used for the disorder of gastrointestinal. The leaves of *Mentha longifolia* are boiled traditionally in water as a tea for children's. It is used as antiemetic for the cure of diarrhoea. It is also beneficial for the treatment of abdominal pain. The extractions of *Mentha longifolia* methanol give the relaxant effect on intestinal smooth muscle. This is a traditional herbal medicine which is very beneficial for the treatment of diarrhoea and colic.

Antioxidant effect

The study shows that the antioxidant activates of essential oil and methanol. It also shows that the drawn part shows the much better antioxidant effect as compared to the essential oil. The phenolic compound causes the better antioxidant effect of methanol extract than the essential oil. *Mentha longifolia* showed significant antioxidant activity (79%).

Nutritional usage

In turkey it is used as van herbal cheese it is a traditional milk product and includes Horsemint. It was shown that this milk product has a great effect on the growth of two pathogenic microorganisms and also appropriate for the cure of sensory evaluation. The essential oil of *Mentha longifolia* has a great relationship with the capability and cellular ultrastructure of bacteria (*L.casei*).during the process of ripening and storage of probiotic feta cheeses. The concentration of essential oil ranging from 0.0% and 0.03% were tested. The 0.03% was more capability *L.casei* to live. The electron microscope has shown that the essential oil case no harm to *L.casei*. The study shows positive effects of *mentha longifolia* on good preservation of *L.casei* at the end of cheese storage time.

Conclusion

Mentha longifolia belongs to the lamiaceae or labiatae and is a herbaceous flowering plant. Its common name is (horsemint).it is mainly found in damp, moist, shady places and around the spring and lack. It is a herbal medicine which is used for different disorders like fever, headache, and cough, jaundice. It is mixed with other herbal and medicinal plants to make another type of herbal medicines. Horsemint is also used as a salad and make a tea of it .it is also preserved for a long time in dried form. In ancient time people not only use this as medicine they also use it for preserving foods in the summertime from spoiling. It occurs in moist soil and also in specific PH.*mentha longifolia* has essential oil which is used for the cure of diseases in large quantities. High dose taking of *Mentha longifolia* may cause toxicity due to it has active compounds and phytochemical compositions. *Mentha longifolia* shows a wide range of antibiotic activities against a different type of bacteria, yeast, and insect etc. The essential oil of *Mentha longifolia* is more effective antimicrobial than the hydroalcoholic extract. It raises the liver activity even it is taken in a safe dose. *Mentha longifolia* is dried because from drying it decreases the amount of compound in the plant. Horsemint has extracted methanol which is antioxidant and used for the digestive system, abdominal pain, diarrhoea, intestinal muscles and also for skin disease. People can also cultivate it in gardens in favourable conditions.

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