



Mini Review Paper

An Overview of Badranjboya (*Melissa officinalis*)

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Abstract

Melissa officinalis L., is a perennial plant, which belongs to the family labiatae. It is basically cultivated in Mediterranean region and native to Europe, Northern Africa and West Asia. It is called lemon balm, bee balm, melissa, sweet balm. It has a lemony flavor and fragrance. Traditionally this herb was used for longevity, healing wound, relaxing the heart, treating tooth ache. Nowadays it is used in anxiety, mild depression, restlessness, irritability, indigestion, acidity, nausea, bloating and colicky pains, and cold sores. It is also called as a hormonal herb due to its antithyroid activity.

Keywords: *Melissa officinalis*, Badranjboya, lemon balm, depression, antithyroid activity.

Introduction

Melissa is also called as bee balm because the word Melissa comes from a Greek word which means bee and as melissa has great attraction towards bee hence it is called so¹. It is called as Badrangboya², taragarbha in Persian, Mufarrehal qhalb^{2,3} Utrajul Raihath⁴, Warqe habaqe Rauhawi⁵ in Arabic, Billi lotan^{2,3,4} in Hindi, Mountain balm, sweet balm or Lemon balm in English⁶. Lemon balm is a medicinal plant as well as most important commercial plants during the recent decades⁷. It is used in traditional medicine for various ailments like a plant juice, cream or tea infusion is used for nervous agitation, and for promoting sleep, and ameliorates functional gastrointestinal complaints, hysteria, melancholia, chronic bronchial catarrh, migraine, toothache, earache, headache and high blood pressure and, externally, for rheumatism, nerve pains and stiff necks (compress)⁸. In Unani system of medicine its grass and seeds are used in it is used in epilepsy, paralysis, bells palsy, arthritis, Mastitis, halitosis, its syrup and distillate are made for different ailments⁹.

Origin and Distribution

Melissa is a native of southern Europe, Western Asia, Northern Africa, east as far as the Caucasus and northern of Iran but now it grows throughout the world, In India it is found in temperate Himalaya from Garhwal to Sikkim and Khassia mountains⁷. Lemon balm in India is found to grow on sandy, scrubby area, damp wasteland, at elevations ranging from sea level to the mountains. It has been used traditionally for different medicinal purposes but nowadays for several applications in pharmacy, nutritional and sanitary industrials, lemon balm is being used enormously¹⁰.

Botanical Description

Macroscopic: The leaves are broadly ovate, or ovate-lanceolate, crenate. The petiole varies in length from 1-1.2 cm while lamina is about 2.5x1-3.5x1.2 cm.

Microscopic: In transverse section the leaf shows single layered upper and lower epidermis provided with glandular and non glandular hairs. The glandular hairs are characterized by the presence of unicellular circular head and uni to multi celled tail. The non glandular hairs are unbranched, uniseriate, multicellular, with the outermost cells tapering. These are ornamented with small bristles. Upper epidermal cells are mostly larger than the lower ones, while both are covered with cuticle. The epidermis is followed by single layer of palisade tissue continuous to lamina whereas it discontinues at the veins or midrib which is replaced by 3 to 4 layered collenchymatous tissue on the upper side and 3-6 layered on the lower side of the leaf. The collenchymas is followed by circular parenchyma tissues with large intercellular spaces. The vascular bundle is kidney shaped and is collateral. The vessel members are mostly with spiral to reticulate thickenings with simple perforations plates and tracheids are mostly pitted. The stomata are indistinct⁵.

Unani Description of *Melissa officinalis*

Badranjboya is a grass fragrant, greenish black and bitter in nature. It is called as billi lotan because the cat loves to play on it. It is of 2 types: i. Shorter species whose leaves are short and light and thin, and its edges are protruded and it has many bands as teeth of the saw, its flowers are bluish red in colour and many times it is cooked as a vegetable. It usually blooms in mousam e rabeeh, its root do not branch. Its seeds resemble seeds of als, but are smaller than that and colour is brownish this type is called as utrajiya and turanjan, ii. Bigger species, fragrance is same as that of smaller species but much stronger and its leaves are not long but round, colour is greenish on rubbing it gives smell of lemon and leaves resemble like that of jangli tulsi. Some scholars have stated that its leaves are rough, broad and appear same as that of nana (pudina). Its root gives many branches and flowers are white in colour and according to some colour is bluish white and seeds are very less. its seeds are equal

to that of isapghoal, its colour is blackish and has fragrance it is usually found in damp areas its potency is same as that of farasiyoon and is said that it is a type of raihan²⁻⁴.

Taxonomical Classification: Kingdom: Plantae, Division: Tracheophyta, Subdivision: Speramtophyta, Class: Magnoliopsida, Superorder: Asteranae, Order: lamiales, Family: Lamiaceae, Genus: Melissa, Species: *Melissa officinalis* L.

Phytochemical Studies

The leaf of *Melissa officinalis* contains monoterpenoid aldehyde, flavonoids (quercitrin, rhamnocitrin), polyphenolic compounds (rosmarinic acid, caffeic acid and protocatechuic acid), triterpenes (ursolic and oleanolic acids), monoterpenoid aldehydes, sesquiterpenes, tannins and monoterpenoid glycosides¹¹, essential oils (citral) and flavonoids (luteolin)¹². A study on *Melissa officinalis* L. (lemon balm) leaf extract has shown to contain more than 5% hydroxycinnamic acid content is known to have anti anxiety effects¹³.

Pharmacological Activities

Antiviral activity: In one of the study 10% aqueous extracts of *Melissa* inhibited the replication in vitro of herpes simplex virus type 2, influenza virus A2 (Mannheim 57), influenza viruses and myxoviruses in vitro and vaccinia virus¹⁴⁻¹⁶. In a study where tannin isolated from aqueous extract of the *Melissa* leaves inhibited haemagglutination induced by Newcastle disease virus or mumps virus^{14,17}, tannin-free polyphenol fraction of an aqueous extract inhibited herpes simplex and vaccinia viruses in egg and cell culture systems^{14,18} aqueous extracts of the leaves have also been reported to have activity against Semliki Forest virus^{14,19}.

Antispasmodic activity: An ethanol extract of the leaves and essential oil inhibited histamine- and barium-induced contractions of guinea-pig ileum in vitro which in turn inhibited the contractions guinea-pig ileum which exhibited smooth muscle relaxant activity in tracheal muscle while an aqueous extract was inactive. A 30% ethanol extract did not inhibit acetylcholine- and histamine-induced contractions in guinea-pig ileum in vitro at concentrations up to 10ml/ml^{14,20,21}.

Psychoneurological activity: An acute treatment with *Melissa officinalis* L. had shown to improve cognitive performance and mood, reduces induced stress and anxiolytic effects in humans²²⁻²⁴.

Gastrointestinal Tract: Traditionally *Melissa* has been used for GIT disorders, to promote digestion and for griping pains of the belly. According to the German commission E monograph *Melissa is indicated* in functional gastrointestinal complaints especially for spasm in the digestive tract and flatulent dyspepsia and carminative properties²⁵.

Antioxidant Property: *Melissa* essential oil has been shown to have antioxidant properties which is due to the presence of mono and sesquiterpenes components, caffeic acid and flavonoids. A study on mice *Melissa* containing rosmarinic acid had an activity to protect the liver from damage with its antioxidant action. These studies indicate that *Melissa* has a strong antioxidant property²⁶.

Some recent studies on *Melissa* has shown that, it is useful in treating hyperthyroidism and Graves' disease. Firstly, In a dose dependant freeze dried extract of *Melissa* has inhibited the binding of Graves' disease immunoglobulins to the thyroid. These studies suggest that *Melissa* is potentially useful in treating Graves' disease and hyperthyroidism²⁷.

Pharmacological Uses according to Unani Medicine: Mufarreh Qhalb, Muqhawwi e qhalb, Munzij e sauda, Musaffi e khoon, Mutayyab e Nikhath, Muhallil^{2,3,4}, However *Melissa* is known to cause some of the side effects like headache, burning micturation and problematic to hot temperament people as the temperament of *Melissa* is Hot and dry in 2nd degree.

Conclusion

Melissa officinalis L. which is called as lemon balm, bee balm, melissa, sweet balm has enormous health advantages as mentioned in traditional advantages when these were analysed were proven to be scientific. A lot more number of upcoming researches are being done which would be much more worthwhile.

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