

Melissa

By Salvatore Battaglia



BOTANICAL NAME

Melissa officinalis L.

SYNONYMS

Lemon balm, balm,
common balm, bee balm

FAMILY

Lamiaceae



*Like a beam of light on a dark winter's day, melissa softens extreme emotions, eases resentment, gladdens the heart and engages the soul in its own graceful rhythm.*¹

Robbi Zeck's description of melissa beautifully describes the oil's unique revitalizing qualities on our psyche.

BOTANY AND ORIGINS

Melissa is a sweet-scented perennial herb which grows up to 0.9 m high with serrated leaves and tiny white or pink flowers. Melissa is distilled in the south of France, Germany, Italy and Spain; however, the total production of genuine melissa oil is only a fraction of the quantity commercially offered.²

The name is from the Greek word signifying *bee*, indicative of the attraction the plant has for bees and the word *balm* is an abbreviation of the term *balsam*.³

METHOD OF EXTRACTION

Melissa oil is steam-distilled from the leaves and flowering tops of *M. officinalis*.

CHARACTERISTICS

Melissa oil is a pale-yellow or pale-amber-coloured, mobile liquid with an intensely fresh and sweet citrus and herbaceous odour.²

CHEMICAL COMPOSITION

The chemical composition of melissa oil from Turkey was reported as follows:

α -pinene (0-1.0%), β -pinene (0-10.7%), citronellal (0-20.3%), linalool (0-4.2%), neral (3.2-32.1%), geranial (37.7-84.6%), geraniol (0-19.7%).⁴

The chemical composition of melissa oil from Germany was reported as follows:

ocimene (1.7%), citronellal (6.6%), neral (26.2%), geranial (37.3%), neryl acetate (4.8%), β -caryophyllene (11.2%), α -humulene (0.6%), caryophyllene oxide (0.7%).⁵

ADULTERATION

Arctander states that melissa oil enjoys the reputation of being the most frequently adulterated essential oil. The herb may be distilled with lemon oil, Spanish verbena oil, lemongrass oil, citronella oil and various mixtures or fractions thereof.²

TRADITIONAL USES

History

Melissa herb was highly esteemed by Paracelsus, who believed it could completely revivify a man. Herbalist John Evelyn (1620-1706) described melissa as the ruler of the brain, strengthening the memory and removing melancholy.³

Avicenna recommended melissa for strengthening the heart. A spirit of balm made by combining lemon peel, nutmeg, angelica root and other herbs and spices enjoyed a great reputation under the name of Carmelite water. This was considered beneficial for the treatment of nervous headaches, digestive problems and neuralgic affections.³

In traditional European medicine, melissa herb was used for the treatment of melancholy and for enhancing the memory. Greek physicians used melissa to treat wounds.⁶

PHARMACOLOGY AND CLINICAL STUDIES

Melissa is a herb native to the eastern Mediterranean region and western Asia that has a long traditional use for a range of therapeutic purposes such as an antispasmodic, carminative, sedative/hypnotic and for strengthening the memory and relief of stress-induced headaches.

However, Sorensen states that in order to evaluate the different claims made for melissa oil we should differentiate between studies using melissa alcoholic extract or melissa essential oil.⁷

Many studies involving melissa use hydroalcoholic extracts.

Review of traditional uses and clinical data support the use of melissa oil for modulation of mood and cognitive performance.

Antibacterial activity

An in vitro study confirmed that melissa oil had excellent antibacterial activity when used on its own and when used with standard antibiotics. The results suggest that in some cases, essential oils could be used in synergy with antibiotic in some bacteria, however, an antagonistic effect was observed in some bacteria.⁸

Melissa oil displayed very high antibacterial activity against four bacterial strains responsible for nosocomial infections – *Pseudomonas aeruginosa*, *Klebsiella pneumonia*, *Staphylococcus aureus* and *Citrobacter koseri*. Melissa oil displayed stronger antibacterial activity when compared to standard antibiotics used as controls – cefaclor, oxacillin and vancomycin. However, the antibacterial effect of melissa was lower when compared to imipenem standard antibiotic.⁹

Anticarcinogenic activity

The anticarcinogenic activity of melissa oil was investigated and compared with the anticarcinogenic effects of Methotrexate and Vepesid. The results confirmed that melissa oil has anticarcinogenic activity.¹⁰

An in vitro study examined the cytotoxicity of melissa oil against a range of human cancer cell lines. At dilutions between 1:50,000 and 1:2000, the essential oil induced a significant dose-dependent inhibitory effect on all the cancer cell lines.¹¹

Antidiabetic activity

An in vitro study found that melissa oil

may play an important role on the effect of antidiabetes.¹²

Mice administered with melissa oil for 6 weeks showed significantly reduced blood glucose and improved glucose tolerance and significantly higher serum insulin levels compared to the control group. It was suggested that the hypoglycaemic mechanism of melissa oil was due to the enhanced glucose uptake and metabolism in the liver and adipose tissue and the inhibition of gluconeogenesis in the liver.¹³

Anti-inflammatory activity

An in vivo study using mice confirmed that melissa oil showed significant reduction and inhibition of oedema when compared with control and standard drug – indomethacin. It was concluded that melissa oil possesses potential anti-inflammatory activities.¹⁴

An in vitro study confirmed that melissa essential oil demonstrated good to moderate activity in inhibiting the enzyme 5-lipoxygenase. The mechanisms of inflammation involve the metabolism of arachidonic acid which begins with its oxidation by 5-lipoxygenase.¹⁵

Antioxidant activity

An in vitro study confirmed that melissa oil exhibited very strong free radical scavenging capacity and very strong inhibition of lipid peroxidation.¹⁶

Antispasmodic activity

An in vitro study confirmed that melissa oil exhibited strong antispasmodic activity on isolated rat ileum.¹⁷

Antiviral activity

Hot water extracts of melissa have strong antiviral properties against mumps, *Herpes simplex*, and other viruses. Polyphenols and the tannin present have been identified to be responsible for these antiviral properties.¹⁸

An in vitro study confirmed that melissa oil was able to reduce the viral infectivity of three different infective doses of *herpes simplex* virus (HSV) type 2. The antiviral effect of melissa oil was not statistically different from that of acyclovir that was used as a control.¹⁹

The results of an in vitro study indicate that melissa oil affects the *Herpes simplex* virus before adsorption, but not after penetration into the host cell. It was suggested that considering the lipophilic nature of melissa oil, which is able to penetrate the skin, it may be suitable for a topical treatment of herpes infections.²⁰

Clinical studies indicate that melissa oil reduces the infectivity of acyclovir-resistant herpes viruses.²¹

Dementia

A double-blind, placebo-controlled trial confirmed that topical application of melissa oil significantly reduced agitation in severe dementia patients. It was concluded that aromatherapy with melissa is a safe and effective treatment for clinically significant agitation in people with severe dementia.²²

Another study confirmed that both lavender and melissa oils reduced agitation in dementia patients. The researchers were able to determine the receptor binding properties at a number of ligand-gated and G-protein coupled receptors implicated in agitation. It was also reported that melissa oil demonstrated greater potency than lavender oil.²³

Melissa oil demonstrated high acetylcholinesterase inhibitory activity. Recent research indicates that inhibition of cholinesterase may be effective for treating Alzheimer's disease.²⁴

Sedative activity

A placebo-controlled, double-blind study found that a 600 mg dose of encapsulated extract of lemon balm in healthy adults significantly improved accuracy of attention and memory functions and increased calmness.¹⁸

The hydroalcoholic extract of melissa is a CNS sedative (in mice); however, recent studies indicate that the essential oil does not appear to play a role in this activity.²⁵

A 50:50 blend of melissa oil and lavender oil inhibited [3H] flunitrazepam binding, whereas the individual essential oils had no effect. The data suggests that the two oils had anti-agitation effects.²⁶

A double-blind, placebo-controlled, randomised, balanced crossover experiment using 18 healthy human volunteers receiving two separate single doses of a standardised melissa extract (300 mg, 600 mg) showed that the 600 mg dose reduced the negative mood effects of the Defined Intensity Stress Simulation battery. Significantly increased self-ratings of calmness and reduced self-ratings of alertness were also reported. The results suggest that the ability of melissa extract to reduce the effects of stress deserves further investigation.²⁷

PROPERTIES

Properties commonly cited in aromatherapy include analgesic, antidepressant, antiseptic, antispasmodic, antiviral, bactericidal, carminative, cordial, diaphoretic, febrifuge, hypotensive, insect repellent, nervine, sedative, sudorific and tonic.^{28,29,30}

AROMATHERAPY USES

Cardiovascular system

Melissa oil is reputed to lower high blood pressure and it has a calming effect on over-rapid breathing and heartbeat.³¹ Tisserand suggests that melissa is a tonic of the heart. He recommends it for all heart conditions where there is overstimulation or heat, leading to weakness of the heart.³²

Digestive system

Melissa oil is reputed to regulate the digestive system, relieve cramps, reduce flatulence and stimulate the gall bladder and liver.³³ The action of melissa oil has been compared with that of peppermint and sweet fennel. It is a tonic and is recommended for nausea, vomiting and indigestion, especially of nervous origins.³⁴

Immune system

Studies in Germany have found melissa oil to possess antiviral properties against *Herpes simplex* and *Herpes zoster*. Dr Wabner suggests using an undiluted blend of rose and melissa oil directly onto the herpes lesions. He states that the herpes lesions often disappear within one or two days.³⁵ Care should be taken to apply the oil to the blisters only and not the surrounding skin, to minimise irritation.

Psychological

Fischer-Rizzi describes melissa oil as a gift from heaven and recommends using the oil for overstimulation of the nervous system that causes stress, anxiety, insomnia, depression and lost inner direction.³³

Melissa oil is considered a sedative and is recommended for reducing anger in times of crisis or trauma.³⁶ The oil is well known for its uplifting and antidepressant qualities.²⁹

Skin care

Melissa oil is often recommended for the treatment of oily skin and acne.^{28,33} However, there is a high risk of skin irritation or skin sensitisation and for this reason, I prefer using essential oils which are less likely to cause an irritation.

ENERGETICS

Energetically, melissa is *cooling* and *drying*. It is indicated for stagnation of *Qi* and for reducing *heat* in the liver and heart. Melissa's *cooling*, soothing influence on the Heart and nervous system makes it effective for alleviating restlessness, insomnia and nervous tension.³⁰

According to the principles of the Five Elements, melissa oil helps to balance the Wood and Fire Elements.

Mojay explains that melissa oil strengthens and balances the *Shen* and the *Hun*.³⁰ Whenever the *Shen* is feeling agitated, we suffer from anxiety, restless and insomnia. The *Hun*, otherwise known as the 'Ethereal Soul', is responsible for our ability to make decisions and to have a good sense of direction in life. Whenever the *Hun* is weak, we always feel like we are running into brick walls, we do not respond well to pressure and feel as we have no sense of purpose or direction in our life.

PERSONALITY

Worwood describes the melissa personality as full of energy and delightful. She states that their youthfulness has a revitalising effect on everyone they meet. They consider life to be too precious to be wasted so they are always busy doing exciting and interesting activities. They are considered to be very organised individuals. Melissa personalities are very enthusiastic and like to try new and exciting things. Their enthusiasm and energy may make it difficult for them to meditate or participate in solitary practices.³⁷

Worwood explains that melissa personalities are likely to attract jealousy and envy from persons who admire their vivacious, outgoing nature and their incredible sense of control. Such persons may wish to control melissa personality types by making them behave more like themselves. However, melissa personality types will always see the good side in people, despite the attempts of negative people trying to drag them down.³⁷

According to Myers-Briggs personality types, the melissa personality is likely to be an ENTP. ENTPs are energetic, enthusiast and confident. Many are nonconformists. They are innovative and have excellent analytical ability and are resourceful in solving problems. They like variety and change. Because they have so many interests, they feel that life is too short. They feel relaxed when they do new things. They enjoy travelling to exotic places. They can be inspirational and rise to leadership positions because of their quick mind. They work best when interacting with many people. They are optimistic, charming and quick-witted. They value their freedom and independence. They seek growth, excitement, and continuous improvement in their relationships. They enjoy debating and they like to have the last say. They may deny emotional pain and keep busy to avoid dealing with their feelings. They can be arrogant, argumentative and insensitive.

SUBTLE

Davis states that melissa oil is of great comfort during bereavement. She explains that the sweet, fresh fragrance seems to dispel fear and regret and bring acceptance and understanding as the time of death approaches.³⁸

Melissa oil is recommended for the heart chakra. Davis suggests using it to expand feelings of love from the individual towards the total acceptance of unconditional love.³⁸

Mojay recommends melissa for people who are easily traumatised by confrontation. They often manifest their strength by attempting to contain, rather than respond to and express their feelings of hurt and anger.³⁰

Melissa oil promotes sensitivity and intuition and helps us find inner contentment and strengthens the 'wisdom of the heart'.³³

Keim Loughran & Bull explain that melissa oil helps us release emotional blocks and heal the wounds caused by the death of a loved one. It teaches us that death is a part of life, without interfering in the natural grief process.³⁹

Worwood explains that melissa oil is a spiritual conduit. She describes the oil as encouraging strength and having a revitalising effect that is especially appreciated before meditation or prayer.⁴⁰

Zeck states that melissa oil softens extreme emotions and soothes resentment. It allows us to reflect on all that we have and to be grateful for.¹

HOW TO USE

Bath

Melissa oil can be sensitising; therefore, I would not recommend it in a bath.

Topical

Massage, ointment, skin care.

Inhalation

Direct inhalation, diffuser, oil vaporiser.

BLENDING TIPS

Aromatherapy

For the relief of nervous tension, stress and irritability, consider blending melissa oil with essential oils such as bergamot, Atlas cedarwood, Roman chamomile, frankincense, geranium, lavender, neroli, sweet orange or sandalwood.

For the relief of insomnia consider blending melissa oil with essential oils such as Roman chamomile, lavender, neroli, sweet marjoram or sandalwood.

To promote mental alertness, consider blending melissa oil with essential oils such as bergamot, basil, ginger, grapefruit, lemon, cold-pressed lime, myrtle, pine, peppermint, rosemary or spruce.

For the topical treatment of cold sores, consider blending melissa oil with essential oils such as bergamot, rose otto or tea tree.

To dispel melancholy and alleviate depression, consider blending melissa oil with essential oils such as bergamot, fragonia, geranium, jasmine absolute, lavender, neroli, sweet orange, sandalwood or ylang ylang.

SAFETY

Melissa oil is non-toxic. However, care must be taken as the oil is a possible sensitiser and dermal irritant.²⁷ Melissa oil is one of the most frequently adulterated essential oils.

No contraindications known.

REFERENCES

1. Zeck R. *The blossoming heart – aromatherapy for healing and transformation*. Aroma Tours, East Ivanhoe, 2004.
2. Arctander S. *Perfume and flavour materials of natural origin*. Allured Publishing, Carol Stream, 1994.
3. Grieve M. *A modern herbal – Vol. II*. Dover Publications, New York, 1971.
4. Lawrence BM. *Progress in essential oils – melissa or lemon balm oil*. Perfumer & Flavorist, 2008; 33: 66-70.
5. Lawrence BM. *Progress in essential oils – melissa oil, or lemon balm, oil*. Perfumer & Flavorist, 2011; 36: 57-59.
6. Khan I, Abourashed E. *Leung's encyclopedia of common natural ingredients used in food, drugs and cosmetics*. 3rd edn. John Wiley & Sons, New Jersey, 2010.
7. Sorensen J. *Melissa officinalis*. The International Journal of Aromatherapy, 2000; 10(1/2): 7-15.
8. Moussaoui F, Alaoui T. *Evaluation of antibacterial activity and synergistic effect between antibiotic and the essential oils of some medicinal plants*. Asian Pacific Journal of Tropical Biomedicine, 2016; 6(1): 32-37. Cited in Quintessential Aromatics database, 2013.
9. Jalal Z et al. *Phytochemistry of the essential oil of Melissa officinalis L. growing wild in Morocco: preventive approach against nosocomial infections*. Asian Pacific Journal of Tropical Biomedicine. 2015;5(6):459-461. doi:10.1016/j.apjtb.2015.03.003.
10. Allahverdiyev A et al. *Investigation of the anticancerogenic effect of the essential oil of Melissa officinalis L.* Pharmaceutical & Pharmacological Letters, 2001; 1(1): 26-29. Cited in Quintessential Aromatics database, 2013.
11. de Sousa AC et al. *Melissa officinalis L. essential oil: antitumoral and antioxidant activities*. Journal of Pharmacy and Pharmacology, 2004; 54(5): 677-681. Cited in Quintessential Aromatics database, 2013.
12. Yen HF et al. *In vitro anti-diabetic effect and chemical component analysis of 29 essential oils products*. Journal of Food and Drug Analysis, 2015; 23(1): 124-129. Cited in Quintessential Aromatics database, 2013.
13. Chung MJ et al. *Anti-diabetic effects of lemon balm (Melissa officinalis) essential oil on glucose- and lipid-regulating enzymes in type 2 diabetic mice*. British Journal of Nutrition, 2010; 104(2): 180-188. Cited in Quintessential Aromatics database, 2013.
14. Bounihi A et al. *In vivo potential anti-inflammatory activity of Melissa officinalis L. essential oil*. Advances in Pharmacological Sciences, 2013; 2013: 101759. doi: 10.1155/2013/101759
15. Baylac S, Racine P. *Inhibition of 5-lipoxygenase by essential oils and other natural fragrance extracts*. International Journal of Aromatherapy. 2003; 13(2/3): 138-142.
16. Mimica-Dukic N et al. *Antimicrobial and antioxidant activities of Melissa officinalis L. (Lamiaceae) essential oil*. Journal of Agricultural and Food Chemistry, 2004; 52(9): 2485-2489. Cited in Quintessential Aromatics database, 2013.
17. Sadraei H et al. *Relaxant effect of essential oil of Melissa officinalis and citral on rat ileum contractions*. Fitoterapia, 2003; 74(5): 445-452. Cited in Quintessential Aromatics database, 2013.
18. Blumenthal M et al. *The complete German commission E monographs: therapeutic guide to herbal medicine*. American Botanical Council, Austin, 1998.
19. Allahverdiyev A et al. *Antiviral activity of the volatile oils of Melissa officinalis L. against Herpes simplex virus type-2*. Phytomedicine, 2004; 11(7/8): 657-661. Cited in Quintessential Aromatics database, 2013.
20. Schnitzler P et al. *Melissa officinalis oil affects infectivity of enveloped herpes viruses*. Phytomedicine, 2008; 15(9): 734-740. Cited in Quintessential Aromatics database, 2013.
21. Reichling J, Schnitzler P. *Phyto-antiviral agents for the topic treatment of recurrent herpes labialis episodes*. Zeitschrift fur Phytotherapie, 2011; 32(6): 260-265. Cited in Quintessential Aromatics database, 2013.
22. Ballard CG et al. *Aromatherapy as a safe and effective treatment for the management of agitation in severe dementia: the results of a double-blind placebo-controlled trial with melissa*. Journal of Clinical Psychiatry, 2002; 63(7): 553-558. Cited in Quintessential Aromatics database, 2013.
23. Elliott MSJ et al. *The essential oils from Melissa officinalis L. and Lavandula angustifolia Mill. As potential treatment for agitation in people with severe dementia*. International Journal of Essential Oil Therapeutics, 2007;1(4):143-152. Cited in Quintessential Aromatics database, 2013.
24. Chaiyana W, Okonogi S. *Inhibition of cholinesterase by essential oil from food plant*. Phytomedicine, 2012; 19(8/9): 836-839. Cited in Quintessential Aromatics database, 2013.
25. Bruneton J. *Pharmacognosy*. 2nd edn. Lavoisier Publishing, Paris, 1999.
26. Huang L et al. *Pharmacological profile of essential oils derived from Lavandula angustifolia and Melissa officinalis with anti-agitation properties: focus on ligand-gated channels*. Journal of Pharmacy and Pharmacology, 2008; 60(11): 1515-1522. doi: 10.1211/jpp/60.11.0013
27. Kennedy DO et al. *Attenuation of laboratory-induced stress in humans after acute administration of Melissa officinalis (lemon balm)*. Psychosomatic Medicine, 2004; 66(4): 607-613. Cited in Quintessential Aromatics Ltd database, 2013.
28. Lawless J. *The encyclopaedia of essential oils*. Element Books, Shaftesbury, 1992.
29. Lavabre, M. *Aromatherapy workbook*. Healing Arts Press, Rochester, 1997.
30. Mojay G. *Aromatherapy for healing the spirit*. Healing Arts Press, Rochester, 1999.
31. Davis P. *Aromatherapy an A-Z*. 2nd edn. The C.W. Daniel Company, Saffron Walden, 1999.
32. Tisserand R. *The art of aromatherapy*. The C.W. Daniel Company, Saffron Walden, 1977.
33. Fischer-Rizzi S. *Complete aromatherapy handbook*. Sterling Publishing, New York, 1990.
34. Tisserand R. *In praise of melissa*. The International Journal of Aromatherapy, 1989; 1(4): 10-11.
35. Wabner D, Wurdack I. *Rose oil: its use in therapy and cosmetics*. International Journal of Aromatherapy. 1989;2(1):28-11.
36. Schnaubelt K. *Medical aromatherapy*. Frog, Berkeley, 1999.
37. Worwood VA. *The fragrant mind*. Transworld Publishers, London, 1995.
38. Davis P. *Subtle aromatherapy*. The C.W. Daniel Company, Saffron Walden, 1991.
39. Keim Loughran J, Bull R. *Aromatherapy anointing oils*. Frog, Berkeley, 2001.
40. Worwood VA. *The fragrant heavens*. Transworld Publishers, London, 1999.