



MULBERRY FRUIT AND ITS APPLICATIONS

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Mulberry a member of Moraceae family belongs to the genus *Morus* originating from the Latin word 'mora,' signifying delay due to the gradual development of its buds. Thriving in a wide range of climates and environmental conditions, it is cultivated extensively across diverse regions, from tropical to temperate zones, with a predominant presence in Asian cultivation. Globally recognized species of the *Morus* genus include *Morus alba* (white mulberry), *Morus nigra* (black mulberry), and *Morus rubra* (red mulberry).

MORPHOLOGICAL DESCRIPTION

The mulberry is a perennial tree that can reach heights of 10–13 m. Its leaves exhibit variations in shape and size, typically measuring 5 to 7.5 cm in length and 6 to 10 cm in width. They are deeply lobed with three basal nerves and lateral nerves that fork near the edges. The flowers display a yellowish-green color, with female spikes being ovoid and stalked, while male spikes (catkins) are broad and cylindrical. The fruit, known as a syncarp, consists of numerous drupes enclosed in a fleshy perianth. These drupes are ovoid or subglobose, reaching up to 5 cm in length, and can appear white, pinkish-white, purple, or black when ripe. Each fruit develops from an entire flower cluster, resembling blackberries and maturing into hues of white, pink, red, or purple.



MAJOR SPECIES OF MULBERRY

Morus rubra, known as the red mulberry due to its deep red to almost black fruit, is native to eastern North America and can grow up to a height of 21 meters (70 feet). The taste of its fruit is a delightful blend of sweetness and sourness. *Morus alba*, commonly referred to as white mulberry, is characterized by its white fruits and originates from Asia. The leaves of this variety serve as food for silkworms and have a notably sweet flavor. *Morus nigra*, or black mulberry, is distinguished by its fruit color and hails from western Asia. Historically, it was extensively cultivated in Italy until the 15th century for silkworm rearing, but white mulberry has since taken its place. The taste of black mulberry is a harmonious combination of sweetness and sourness.

BENEFITS OF MULBERRY FRUITS

- 1. Anti-ageing properties:** The significant antioxidant, resveratrol found in these berries, prevents free radicals from causing extensive damage, promoting healthy aging and increased longevity.
- 2. Healthy immune system:** Mulberry fruit contains specific alkaloids that activate Macrophages, a type of white blood cell crucial for combating infections. Additionally, it helps regulate blood sugar levels, preventing undesirable spikes and contributing to overall sugar level management.
- 3. Healthy brain:** While further research is required in this domain, current knowledge suggests that mulberry fruit enhances cognitive function and shields the brain from potential damage. This, in turn, has the potential to enhance memory and reduce oxidative stress in humans.
- 4. Healthy bone tissue:** Mulberry fruit is rich in vitamin K, calcium, iron, and small quantities of phosphorus and magnesium. These components are abundant and offer significant benefits in supporting the maintenance of healthy bone tissue and preventing bone deterioration.
- 5. Healthy digestive system:** Being an excellent source of dietary fiber, mulberry aids in maintaining a healthy digestive tract, preventing issues like cramping, bloating, and constipation. Additionally, its high fiber content contributes to weight loss by promoting a sense of fullness.
- 6. Healthy eyes:** Zeaxanthin, a carotenoid present in this fruit, diminishes oxidative stress on various eye cells, particularly those in the retina. The fruit's carotenoids play a protective role by preventing the onset of cataracts and macular degeneration. Furthermore, they act as a barrier, inhibiting further damage to the retina caused by free radicals.
- 7. Healthy heart:** In the contemporary, fast-paced lifestyle characterized by sedentary habits, maintaining an active lifestyle is crucial. The consumption of these berries proves advantageous in lowering blood levels of detrimental cholesterol, promoting heart health. Additionally, the presence of flavonoids, antioxidants, and fiber contributes to the prevention of heart attacks and strokes.
- 8. Anti-cancer:** Enriched with polyphenol antioxidants, this fruit serves as a protective barrier against detrimental oxygen-free radicals that could potentially harm your cells. The presence of anthocyanins, responsible for its vibrant color, along with ellagic acid and resveratrol, collaboratively acts to inhibit the growth of tumors, offering a defense against cancer.

CONCLUSION

Research on mulberry fruits proves advantageous for human health, particularly in the context of managing and preventing chronic diseases like diabetes and cardiovascular diseases (CVD). This contributes to a greater comprehension of the significance of mulberry fruit, now recognized as a vital element in maintaining a healthy lifestyle.

