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The Green Gold: Why Mulberry Tea is a New Superdrink

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Mulberry tea, a traditional herbal infusion derived from the dried leaves of the *Morus* species (commonly white mulberry *Morus alba* and black mulberry *Morus nigra*), is rapidly emerging as a highly valued functional beverage worldwide. Traditionally consumed in East Asia, particularly in China, Japan and Korea, mulberry tea has gained popularity due to its impressive array of health-promoting properties and natural composition. The leaves, harvested primarily in the autumn when their phytochemical concentration peaks, are carefully dried and processed into a fragrant, mildly sweet tea. One of the key appeals of mulberry tea lies in its naturally caffeine-free and low-tannin profile, making it a gentle alternative to traditional black or green teas. In addition, mulberry leaves are a rich source of bioactive compounds, including flavonoids, alkaloids (notably 1-deoxynojirimycin or DNJ), phenolic acids, and essential micronutrients like vitamin C, calcium, potassium, and iron. These components contribute to the tea's potential therapeutic effects in managing blood sugar levels, improving cardiovascular health, aiding digestion, boosting immunity and even supporting weight management. As modern consumers become more health-conscious, herbal teas like mulberry are increasingly favored for their functional benefits alongside their traditional uses. The growing scientific interest and clinical evidence supporting the health advantages of mulberry leaves further validate their incorporation into daily diets, both as a wellness beverage and a preventive health aid.

History

Mulberry tea has a long-standing history rooted in ancient Asian civilizations, particularly China, Korea and Japan, where it was traditionally used not only as a beverage but also as a medicinal remedy.

Traditional Chinese Medicine (TCM)

In TCM, *Morus alba* (white mulberry) leaves, known as "Sang Ye," have been used for over 2,000 years. Ancient medical texts such as the Compendium of Materia Medica (Bencao Gangmu) by Li Shizhen (16th century) recorded the use of mulberry leaves to treat fever, cough, sore eyes, expel wind and clearing heat, clearing the liver and hypertension. It was consumed as a decoction, powder or herbal infusion.

Japan and Korea

In feudal Japan and Korea, mulberry leaf tea was part of folk medicine and consumed by monks and commoners alike. It was especially popular among the elderly for controlling blood pressure and maintaining vitality. The Central Institute of Silkworm Industry in Japan developed the mulberry tea for health care, due to its content rich in protein, minerals, and vitamins. In Korea, it is known as "Oksusu cha" or "*Sang-ye-cha*" when mulberry leaves are used.

Association with Sericulture

The cultivation of mulberry trees began primarily for feeding silkworms. Over time, as communities working in sericulture observed the health of people who consumed mulberry leaf preparations, its use as a healing tea spread. This gave rise to the concept of "farm-to-cup wellness" centuries before the modern health tea industry.

Botanical and Nutritional Profile

Mulberry leaves contain a range of bioactive compounds including:

- Flavonoids (quercetin, rutin, morin) – known for antioxidant and anti-inflammatory effects
- Alkaloids (notably 1-*deoxynojirimycin* or DNJ) potent inhibitors of carbohydrate metabolism enzymes
- Phenolic acids – offering antimicrobial and anti-aging properties
- Polysaccharides – supporting immune modulation
- Essential vitamins such as Vitamin C, Vitamin A, and B-complex vitamins
- Minerals – including calcium, potassium, magnesium, and iron
- Mulberry tea leaves contain 25 times more calcium than milk.
- Mulberry leaves have ten times more iron than spinach,
- Over twice the fibre of green tea.

Processing of mulberry leaf

Mulberry tea is traditionally prepared by:

1. Harvesting the tender, mature leaves (mostly during autumn in temperate climates when the nutrient content peaks)
2. Wash and clean mulberry leaves.
3. Spread out the washed leaves on a clean sheet of cloth in single layer.
4. Keep the leaves under the hot sun.
5. Bring it indoors at night or during rain
6. Dry the leaves until they become crispy.
7. Crumple the brittle leaves into flakes.

The processing method influences the retention of active compounds-controlled drying below 60°C helps preserve the flavonoid and alkaloid content.

Preparation of ready to drink mulberry tea:

1. Take a teaspoon of mulberry tea leaves in a cup.
2. Add hot water and stir for 10-30 seconds.
3. Strain out the leaf bits.
4. The leaf bits can be squeezed again for several times.

- The tea is pale yellow in colour. It smells and tastes similar to normal green tea. It has a mellower and earthier fragrance of mulberry leaves.
- The mulberry leaf in the form of decoction are used to gargle in the treatment of inflammation in the vocal chords and also controls diarrhea.

Mulberry tea uses:

1. Blood Sugar Regulation (Anti-Diabetic Effect)

Mulberry leaves contain 1-deoxynojirimycin (DNJ), a potent alpha-glucosidase inhibitor. This compound blocks enzymes that break down carbohydrates in the intestine, thereby slowing glucose absorption into the bloodstream. By delaying glucose absorption, DNJ helps prevent post-meal blood sugar spikes. Regular consumption of mulberry tea has been shown to improve insulin sensitivity and glycemic control, especially in individuals with type 2 diabetes or prediabetes.

2. Cholesterol and Cardiovascular Health

Mulberry leaves are rich in flavonoids and phytosterols, which reduce LDL (bad) cholesterol and enhance HDL (good) cholesterol levels. They also have antioxidant properties that

protect blood vessels from oxidative damage. These compounds inhibit the oxidation of lipids, reduce arterial plaque buildup, and improve blood circulation. As a result, mulberry tea supports overall heart health and helps lower the risk of atherosclerosis and hypertension.

3. Weight Management and Fat Metabolism

Mulberry tea helps regulate lipid metabolism by modulating enzymes such as lipase and AMP-activated protein kinase (AMPK). The polyphenols in mulberry tea also enhance fat oxidation. This increases the body's ability to burn fat and suppresses fat accumulation in tissues. Combined with its ability to regulate blood sugar, mulberry tea can aid in weight loss efforts when paired with a healthy lifestyle.

4. Antioxidant and Anti-Aging Properties

Mulberry leaves are rich in vitamin C, beta-carotene, quercetin and other polyphenols which neutralize free radicals responsible for cellular damage and aging. By reducing oxidative stress, mulberry tea helps prevent premature aging, boosts skin health, and supports longevity. It may also reduce the risk of degenerative diseases such as Alzheimer's and cancer.

Supports Immune System: The leaves contain alkaloids, vitamins (A, C, and B-complex) and minerals (zinc, calcium, iron) that contribute to immune defense mechanisms. These compounds boost the body's ability to fight infections, reduce inflammation, and enhance the activity of natural killer (NK) cells and macrophages.

5. Improves Liver Function and Detoxification

Mulberry leaf extract shows hepatoprotective activity due to its antioxidant content and ability to reduce lipid peroxidation in liver cells. This helps in the detoxification process and prevents damage caused by toxins and free radicals, promoting liver health.

6. Improves Vision and Eye Health

Rich in zeaxanthin and beta-carotene, mulberry tea helps protect the retina and reduce the risk of macular degeneration and cataracts. These carotenoids filter harmful blue light and maintain healthy photoreceptor function in the eyes.

7. Caffeine-Free Relaxant

Unlike green or black tea, mulberry tea is naturally caffeine-free and contains gamma-aminobutyric acid (GABA), a neurotransmitter known to reduce stress. Mulberry tea can be consumed at night without affecting sleep. It also helps lower anxiety and may support mental clarity.

Product List & Price Overview

1. Sericha Mulberry Leaf Infusion (30-sachet box)

- Price: Approximately ₹300 for a box of 30 sachets (~60 g pack) Organic, caffeine-free infusion in flavors such as Natural, Green Apple, Lemon Ginger.
- Designed for blood sugar control, antioxidant benefits, digestion support, and improved immunity.

2. Triple Leaf Mulberry Leaf Tea (tea bags)

- Price: Around ₹1,042 for imported 40 tea bags (32 g) pack via desertcartDelicate South Korean variety with mild flavor and premium packaging
- Convenient for daily brewing and travel.

3. SweetTea Mulberry Tea (loose powder/leaves)

- Price: Approximately ₹180 per pack (~100 g loose powder or leaves)
- Popular for use in smoothies, brewing as tea or adding to recipes; supports weight management and liver health.

Mulberry Tea Side Effects

- **Hypoglycemia (Low Blood Sugar)**

Mulberry tea contains a natural compound called 1-deoxynojirimycin (DNJ), which acts as an alpha-glucosidase inhibitor. This enzyme is responsible for breaking down carbohydrates into glucose in the intestine. By inhibiting it, DNJ slows down glucose absorption and can significantly lower blood sugar levels. While this is beneficial for people with high blood

sugar or type 2 diabetes, it can cause hypoglycemia (low blood sugar) if taken in excess or alongside anti-diabetic medications like insulin or metformin. Symptoms may include dizziness, sweating, fatigue, and confusion.

- **Digestive Discomfort**

Mulberry leaves are rich in tannins and dietary fiber. Tannins can be irritating to the stomach lining, especially in individuals with sensitive digestive systems. Excess fiber can also disrupt gut motility. Drinking large amounts of mulberry tea may cause bloating, gas, diarrhea, or mild stomach cramps, especially if the body is not used to high fiber intake. Starting with small amounts and drinking it after meals may reduce the risk of these effects.

- **Dizziness or Fatigue**

Due to its blood sugar- and blood pressure-lowering properties, mulberry tea may temporarily lower energy levels or cause dizziness when consumed on an empty stomach or in large amounts.This side effect is more likely in people with naturally low blood pressure or those already on antihypertensive medication. It usually resolves after eating or rehydrating.

- **Allergic Reactions (Rare)**

Although uncommon, some individuals may have hypersensitivity to proteins or compounds in mulberry leaves. Reactions may include skin rashes, itching, hives, or swelling, especially in people with existing plant allergies. If any allergic symptoms occur, the tea should be discontinued immediately, and medical advice should be sought.

- **Drug Interactions**

Mulberry tea contains compounds that influence glucose metabolism, blood pressure regulation, and blood coagulation. These can interact with common medications.

- When taken with diabetes medications, it may enhance the glucose-lowering effect, leading to hypoglycemia.
- With antihypertensives, it may further lower blood pressure, causing light-headedness or fainting.
- Its flavonoid content may have a mild anticoagulant (blood-thinning) effect, which can interfere with drugs like warfarin or aspirin, increasing the risk of bleeding.

- **Pregnancy and Lactation Caution**

There is limited clinical data on the safety of mulberry leaf tea during pregnancy or breastfeeding. Due to its effect on blood sugar and blood pressure, and the presence of bioactive compounds, pregnant and lactating women are advised to avoid mulberry tea unless prescribed by a healthcare provider. It's best to err on the side of caution.

- **Not Recommended for Children**

Children have different metabolic rates and sensitivities to plant compounds compared to adults.

There is no standardized dosage or safety evaluation for children, so regular or medicinal use of mulberry tea is not recommended for children under 12 years unless under pediatric supervision.

Precaution

• Prior to using mulberry leaf tea to treat any condition, please consult a licensed health care provider.

• if you're on insulin for diabetes and use mulberry supplements, you may need to adjust your insulin dose accordingly ,advised to closely monitor blood sugar levels while drinking mulberry tea.

• If you consume mulberry products and develop hives, wheezing, rapid pulse, swelling, difficulty breathing or other sudden symptoms, discontinue use and contact a doctor right away.

Conclusion

Mulberry leaf tea is emerging as a functional herbal beverage with a rich history in traditional medicine and growing scientific backing. Derived from the nutrient-packed leaves of the *Morus* plant, this caffeine-free tea offers a wide range of health benefits attributed to its

bioactive compounds such as 1-deoxynojirimycin (DNJ), flavonoids, polyphenols, and essential vitamins. Scientific studies have shown that mulberry tea can help regulate blood sugar levels by slowing carbohydrate absorption, making it particularly beneficial for individuals with type 2 diabetes or insulin resistance. Additionally, its antioxidant properties support cardiovascular health, reduce oxidative stress, aid in weight management, and protect liver and eye function.

Despite its numerous advantages, mulberry leaf tea is not entirely without caution. Excessive consumption may cause mild digestive upset or interfere with blood sugar and blood pressure medications. Pregnant or lactating women and individuals with certain medical conditions should consult healthcare professionals before incorporating it into their routine. Overall, when used mindfully, mulberry leaf tea serves as a natural, therapeutic addition to a healthy lifestyle and offers promising potential as a preventive wellness drink rooted in both tradition and science

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