

## Healing Properties of Palmyrah Palm: Nature's Hidden Gem

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### Introduction

The Palmyra palm (*Borassus flabellifer*) is believed to have originated in Africa and spread to South Asia through commercial routes and dissemination of cultures. It was introduced into Southeast Asia through these routes and has been extensively cultivated in various regions, including India, where it is known as "Panamaram" in Tamil and "Tar" in Hindi. It is dioecious, with male and female flowers on separate plants, which allows them to adapt to different ecological niches. The leaves are fan-shaped and have spines along the petiole margins, which helps protect them from herbivores and provides structural support. *Borassus* palms have a unique germination strategy, where the young seedling extends downwards into the soil and only a few leaves are visible above ground, providing protection against frequent fires in savanna habitats.

Palmyra palm, a multipurpose tree with great utility. It grows extensively in the different parts of India, Sri Lanka and Myanmar and Bangladesh. It grows up to 30 meters tall and is an important part of culture and livelihoods in parts of South Asia. All parts of the Palmyrah palm have uses - the fruit produces edible seeds, sap, and juice; leaves are used for roofing, baskets, and writing material; and the sap is tapped to produce toddy, an alcoholic beverage, or jaggery, a type of palm sugar. It is referred to as tree of life with nearly 800 uses including food, beverage, fibre, medicinal and timber. Various by-products like palm sugar and gur (molasses) are also prepared from the juice extracted from tree trunk. The immature soft juicy seed nuts and Neera are very popular in the tropical parts of India as a soft natural drink to protect against hot summer. The soft orange-yellow mesocarp pulp of the ripe fruit is sugary, dense and edible, rich in vitamin A and C. *Borassus* also contains bitter compound called flabelliferins, which are steroidal saponins. Ripe fruit pulp can be processed into soft beverages, jam, toffee, delicious food items and sweets.

**Healing Properties of Palmyrah:** Palmyra products are found to have anti-inflammatory, antioxidant,

antibacterial, analgesic, hypoglycemic, and anti-oxidant properties.

**Digestive health:** It is one of the most important abilities is to promote digestive health. The fruit and sap have natural laxative properties that can help in alleviating constipation and promoting regular bowel movements. Additionally, the fibrous nature of the fruit aids in cleansing the digestive tract, making it a natural remedy for detoxification. The palm fruit is ideal for treating burning sensation in the stomach. During summers use palm fruit, to keep body hydrated. It also replenishes the lost minerals and nutrients of the body and prevents painful urination and tiredness. The fruit contains antioxidants like flavonoids and phenolic compounds, which help neutralize free radicals and reduce oxidative stress, contributing to overall digestive health. Traditionally, the fruit is believed to have a cooling effect on the body, making it a popular choice during the summer months to alleviate heat-related discomfort.

**Antioxidant Properties of Palmyrah:** Antioxidants are compounds that protect the body from oxidative stress caused by free radicals. Free radicals are unstable molecules that can damage cells, leading to aging and diseases such as cancer, heart disease, and neurodegenerative disorders. The Palmyrah palm is abundant in antioxidants, including flavonoids, polyphenols, and vitamin C. The high concentration of flavonoids and polyphenols in Palmyrah palm helps in reducing oxidative stress, thus protecting the body's cells from damage. Vitamin C helps in regenerating other antioxidants within the body, enhancing the overall antioxidant defense system. The Palmyrah palm, being rich in vitamin C, supports this vital function.

**Anti-inflammatory Properties of Palmyrah:** Chronic inflammation is a root cause of many diseases, including arthritis, cardiovascular diseases, and diabetes. The anti-inflammatory properties of the Palmyrah palm can help mitigate these health issues. The polyphenolic compounds in the Palmyrah palm have been shown to exhibit strong anti-inflammatory effects. They inhibit the production of pro-

inflammatory cytokines, which are molecules that promote inflammation. By reducing these cytokines, polyphenols help in alleviating chronic inflammation. Flavonoids not only act as antioxidants but also possess significant anti-inflammatory properties. They work by blocking the enzymes and pathways that lead to inflammation, thus reducing pain and swelling associated with inflammatory conditions.

### **Antimicrobial properties of Palmyrah**

Among its numerous health benefits, the Palmyrah palm exhibits significant antimicrobial properties, making it a potent natural remedy against various pathogens. The antimicrobial properties of the Palmyrah palm are attributed to various compounds found in its different parts, including the fruit, sap, roots, and leaves. These compounds help inhibit the growth of harmful microorganisms, including bacteria, viruses, and fungi. Phenols disrupt the cell walls of bacteria and fungi, leading to their destruction. Flavonoids are another group of compounds found in the Palmyrah palm that exhibit antimicrobial properties. They work by interfering with the DNA synthesis of microorganisms, preventing their replication and growth. Tannins, present in the Palmyrah palm, binds to proteins in microbial cell membranes, causing their inactivation and death.

Research has shown that extracts from the Palmyrah palm can inhibit the growth of *Staphylococcus aureus*, a bacterium responsible for various infections, including skin infections, pneumonia, and food poisoning. *Salmonella*, another common cause of foodborne illnesses, can also be inhibited by the compounds found in the Palmyrah palm. This makes the palm's extracts useful in ensuring food safety. *Candida albicans* is a common fungal pathogen that causes infections such as thrush and yeast infections. The tannins and flavonoids in the Palmyrah palm have been found to inhibit the growth of this fungus.

Extracts from the Palmyrah palm can be used in creams and ointments to treat skin infections caused by bacteria and fungi. These topical treatments can provide relief from symptoms and accelerate healing. The antimicrobial properties make Palmyrah palm extracts useful as natural preservatives in food and cosmetic products. They help extend shelf life by preventing the growth of harmful microorganisms.

The sap and other parts of the Palmyrah palm can be used in oral hygiene products such as mouthwashes and toothpaste to combat oral pathogens and promote dental health.

### **Hypoglycaemic effects**

The hypoglycemic, or blood sugar-lowering, effects of the Palmyrah palm are one of its most significant antidiabetic properties. Polyphenols and flavonoids enhance the secretion of insulin and improve its action in the body. The fresh sap of the Palmyrah palm, known as Neera, has been traditionally consumed for its health benefits. Neera contains natural sugars that are low on the glycemic index, making it a suitable sweetener for diabetics. It also helps in maintaining stable blood sugar levels. The sap and other parts of the Palmyrah palm are good sources of zinc, which plays a critical role in insulin synthesis and secretion. Adequate zinc levels help enhance the body's sensitivity to insulin, making it easier to manage blood sugar levels. Magnesium is another essential mineral found in the Palmyrah palm that helps improve insulin sensitivity. Higher magnesium intake has been associated with a lower risk of developing type 2 diabetes.

**Cardio-protective properties:** The Palmyrah palm is a good source of potassium, a mineral essential for maintaining healthy blood pressure levels. Potassium helps balance sodium levels in the body, reducing the strain on blood vessels and lowering the risk of hypertension. The polyphenolic compounds in the Palmyrah palm have been shown to reduce the production of pro-inflammatory cytokines, thereby lowering systemic inflammation and protecting the cardiovascular system. The fiber and antioxidants in the Palmyrah palm can help reduce low-density lipoprotein (LDL) cholesterol levels, often referred to as "bad" cholesterol. Lowering LDL cholesterol reduces the risk of plaque buildup in arteries, which can lead to atherosclerosis. High-density lipoprotein (HDL) cholesterol, known as "good" cholesterol, helps remove excess cholesterol from the bloodstream. The nutrients in the Palmyrah palm support an increase in HDL cholesterol levels, promoting better heart health. The potassium and magnesium in the Palmyrah palm have natural diuretic effects, helping the body eliminate excess sodium and water. This reduces blood volume and pressure on the arterial walls, promoting healthy blood pressure levels.

**Wound healing properties**

The diverse parts of the palmyrah palm, including the roots, bark, and fruits, have been traditionally used in various medicinal applications, including wound healing. The leaf secretions of the Asian palmyrah palm are traditionally used by palm tree climbers to treat cuts or wounds inflicted during palm juice tapping. These leaf secretions have been identified as a natural wound healing material. The fruit extract was found to accelerate wound healing by increasing the contraction rate of full-thickness excisional wounds, reducing inflammation, and enhancing antioxidant enzyme activities. The roots are reported to have diuretic and anthelmintic properties, while the bark decoction is used as a mouthwash. The palm fruit has been found to possess anti-

inflammatory and antioxidant properties, which may contribute to its wound healing potential.

**Conclusion**

The Palmyra palm is a plant with a rich history of medicinal uses. Its various parts, including the fruit, leaves, and sap, have been found to possess a range of medicinal properties that can be used to treat various conditions. The Palmyrah palm is truly a hidden gem in the world of natural medicine. Its wide range of health benefits, from boosting digestion and immunity to providing essential nutrients and aiding in wound healing, make it a valuable addition to any diet. While modern science continues to uncover the full potential of this remarkable tree, the traditional wisdom surrounding its medicinal properties is a testament to its enduring value.

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