

An elaborate study on influence and values of medicinal plants on human health

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Abstract

Biodiversity is regarded as an important quality of natural landscape beauty. Human beings depend a lot on all other species available on earth for their existence. Humans have emphasized the importance of biodiversity to the purpose and meaning of their existence. Although, today we continue to imbue many species on earth with cultural significance. Variety of vegetables, fruits, grains, livestock and medicinal plants are derived from different ecosystems to support life on earth. Preserving the diversity of life on this planet has been identified as an accepted goal. Ethical values are deep rooted with human culture, religion and society. Trees are greatly respected for its medicinal uses, including anti-bacterial, anti-viral, anti-fungal, and even sedative properties. Medicine extracted from different parts of various trees are considered fundamental to the wellbeing of millions of people.

Keywords: Biodiversity, Trees, Food, Medicine

Introduction

Diversity of biological communities in ecosystems are essential for various activities. Tree is regarded as a perennial plant with an elongated stem having supporting branches and leaves. Plants tend to gather light for the photosynthetic process through the leaves. This process helps in storing food for the trees. Trees give us oxygen, store carbon and gives life to all creatures on earth. They help in conserving energy and provide shelter. They provide livelihood to people and are considered as healer of disease. They are used mainly in places that require shade and shelter. They are used for fences, wind breaks and barriers.

Medicine extracted from different parts of various trees are considered fundamental to the wellbeing of millions of people. The ethnomedicinal system and herbal medicine is a healing agent of chief importance in addressing health care problem of traditional communities [1]. Globally, about 85% of the traditional medicines used for primary health care are derived from plant parts used by great number of tribal people who are living in different geographic locations with various subsistence patterns [2,3].

Medicinal plants such as tulsi,neem,turmeric,ginger and aloevera cure several common ailments. Leaves of herbal plants, shrubs and trees are used for medicinal properties. Turmeric is considered the most powerful herb. Turmeric contain curcumin which is a powerful antioxidant capable of boosting the body's own antioxidant enzyme. Because to their ecological value and efficacious properties, trees are regularly used in the religious and social ceremonies.

The religious mind of many people was thus keen on environmental stability. The tradition of tree worship is based on mythology, some others are due to religious beliefs. Even non-believers respect and admire trees because of the immense benefits that they receive from trees in the form of fruits, flowers, fresh oxygen and shade. The worship of trees in hinduism is done for different purposes, according to Hindu mythology. It is mainly believed for the sake of moksha, immortality, fertility or for fulfilling wishes. All these are interconnected to various rituals performed with utmost spiritual feeling. Banyan and the Peepal tree are the most worshipped tress according to Hindu mythology.

Amla in Ayurveda:

In Ayurveda amla is called as 'Dhatri'. 'Dhatri' means mother or nurse. Its nurturing properties make it such an important part of many of pukka's supplement. Amla is considered as an Ayurvedic super food for hair and skin. It improves the circulation of the blood and nourish the body [4]. Its cooling pitta pacifying properties make it a great ingredient for treating pigmentation, uneven skin tone, acne and blemishes. According to Hindu beliefs, Lord Vishnu and Lord shiva inhabit Amla or Amla Navami .Worshipping Amla tree on this day maintains the health and prosperity of the devotees. On auspicious day, Amla Navami is observed in the month of Kartik in the Hindu calendar. It is also believed that eating under the Amla tree on this day eradicates poverty.

Amla tree as Sthala Vriksham:

Swarnapureeswarar temple in koogaiyur has amla tree as sthala vriksham. Thirunelvayil is located at a distance of about 5 kms from chitambaram. Here the sthala vriksham is Nelli Tree.

Thirunellikka in Thiruvarur district in the state of Tamilnadu has Amla as sthala vriksham. This is the 117th shiva temple praised in the hymns of saint Thirugana sambandar. Sri somanathar at vadathali temple near kumbakonam also has Amla tree as Sthala Viruksham. Indian gooseberry also known as phyllanthus emblica or emblic myrobalan or Amla from the Sanskrit name amalaki. This is a deciduous tree of the family phyllanthaceae. Other Sanskrit names are Abhaya, Amrita, Dhatri, Vayastha.

Scientific Classification

- Kingdom - Plantae
- Family - Phyllanthaceae
- Genus - Phyllanthus
- Species - Phyllanthus emblica
- Order - Malpighiales

The tree is small to medium in size. It grows up to 8m in height and even more. It is a deciduous tree. It is light green in colour. The leaves of this tree are simple, sub sessile and the arrangement of the leaves are closely set along branch lets. The flowers of this plant are in greenish - yellow and the fruit is almost spherical, light greenish yellow, smooth and hard on appearance, with six vertical stripes or furrows. The taste is sour bitter and astringent and is fibre rich. The tree bears fruit in autumn season. It is found in semi-arid regions and plains of northern India, UP, Tamil Nadu, MP and Rajasthan.

Nutritional Value:

The healing and medicinal properties of amla are innumerable as it is loaded with Vitamin C, Calcium, Iron, Phosphorus, Carotene, Vitamin B, Protein and Fibre [5]. Amla berries also include several flavonoids chemicals that have been linked to benefits like improved memory. The soluble fibre in amla berries dissolves quickly in the body which helps to slow the rate your body absorbs sugar thereby reduce the blood sugar. It is useful to control type 2 diabetes. The high fibre content in amla helps to relieve from symptoms like irritable bowel syndrome. The high level of vitamin C in Amla berries helps to absorb other nutrients such as iron and other minerals. The vitamin A present in Amla improves eye health and improves vision and other eye infections. One 100 g serving of amla berries provides 300 mg of vitamin C with lots of polyphenol's alkaloids and flavonoids. It has antibacterial and anti-inflammatory properties also.

The phytonutrients and antioxidants in amla fight against free radicals that can attack and damage brain cells. Vitamin C in amla helps the body to produce norepinephrine a neuro transmitter which helps to improve brain function in people with dementia. It is also good for heat diseases and cancer. Gooseberries grows in soil conditions with good moisture and well-drained soil. Further it can be found to grow in cool and rich clay loam. Gooseberries grow well in cool-summer regions and in winter season too. Its benefits from cold temperature is enough to freeze the top soil.

Gooseberries grow well in full sun to limited shade. The gooseberry is ancient to many parts of Europe and western Asia. It is commonly found in Himalayas and peninsular India. The nature of plant is shallow-rooted. Amla plant takes 7-8 years after planting to start bearing

fruits. It grows very well to drip irrigation. After the monsoon rains, it consumes 25-30 litres of water per day per tree.

Amalaki Ekadashi is a type of Ekadashi worship which gives more importance to the Amla tree and especially on this day. Devotees believe that Lord Krishna and Goddess Mahalakshmi reside in the Amla tree. According to Hindu mythology Lord Krishna and Lord Paramashiva resides on Amla during Amla Navami. Offering pooja to Amla tree on this day maintains the health and prosperity of the devotee. It is also believed that consuming under a gooseberry tree on this day removes poverty from one's life and all wishes of the devotees are fulfilled.

Peepal tree

Peepal tree (*Ficus religiosa*) is the native tree to Indian subcontinent. It is a storehouse of medicinal value. This tree provides maximum oxygen in the morning hours and purifies the environment. Preserve the ozone layer by reducing pollution. The tree can withstand various altitude, tolerate extreme weather conditions and grows deep rooted in all kinds of soil. The plant has a good life span of about 900 to 1500 years. In Hinduism, peepal tree is worshiped and has been found to have religious significance. It provides a long range of medicinal and therapeutic properties. It protects the plant from the ultraviolet rays [6].

Traditional medicine recommends circumambulation of this tree for women suffering from reproductive issues. Inhalation of fresh air in the morning strengthens the uterus of women, Stimulates peristaltic movement of the fallopian tubes for better conception chances. The leaves are used as an expectorant, diuretic and ointment. The juice cleanses the digestive system, brings down nausea and brings good health to skin. The barks show a brown colour and is rough to touch [7]. The bark contains Vitamin K. The leaves are recommended for patients suffering from jaundice. The tree helps in controlling heart disorders and in controlling the palpitation of the heart thereby combating cardiac weakness.

The Peepal belongs the Fig family, with curiously heart shaped leaves that taper off at the point in a small tail. Rather mysteriously leaves of this tree rustle even where there is no breeze to move them, which is attributed to the long leaf stalk and broad leaf structure. The tree also known as Ashvatte and is one of the most worshipped tree in India. Lord Krishna, the original incarnation of Lord Vishnu and the supreme Lord of the Universe according to the Vaishnava faith, identifies with the peepal. Hindus associate the roots of the tree with Lord Brahma, trunk of the tree with Lord Vishnu and leaves of the tree with Lord Shiva. Buddhist also believe this tree since Lord Buddha is thought to have attained enlightenment under the peepal tree. Thus, it is also called the Bodhi tree (or) tree of enlightenment.

It is largely grown in States of Bihar, Haryana, Kerala and Madhya Pradesh in India. *Ficus Religiosa* is native to the Sub-Continent, Myanmar, Sri Lanka and Indo-China. It is popularly known as the Bo-Tree. The origin of peepal tree is dated back to the times of Indus Valley Civilization (3000 BC - 1700 BC) in the Mohenjo-Daro city. It is considered auspicious in Hinduism, Jainism and Buddhism. Gautam Buddha attained enlightenment under this native tree at Bodhi Gaya in Bihar, India. The tree is known for its heart shaped leaves that have long narrowing tips. One of the living sacred trees at Anuradhapura, Sri Lanka. It is believed that it is grown from a cutting from the Bodhi tree sent to that city by King Ashoka in the 3rd century BCE. The tree is found to grow around 98 feet with its trunk spreading out for around 3m

diameter, with cordate shaped leaves and bears small fig like fruits, that turn from green to purple in colour, as they ripen.

In India, peepal tree is named as Ashwatha vruksha, Pippala vruksha, Raavi chettu in Telugu, Bodhi vriksha in Malayalam, Arasamaram in Tamil, Alaadamara in Kannada. It can withstand various altitudes, tolerates extreme weather temperatures and grows deep rooted in all kinds of soils including the spaces between rocks in the mountains. Ayurveda provide information how every part of the sacred fig tree can be used for holistic wellbeing. Peepal trees are brown in colour, thick and rough to touch, the bark is a powerhouse of vitamin K and the extracts perform a wide range of functions related to skin health. The fruit is green and small and its twigs are used in sacred fires. Tiny wasps residing in the fruit help pollinate the peepal tree.

Bilva Tree

Aegle marmelos is most commonly known as Bilva tree or Bael tree and it belongs to the Rutaceae family [8]. This tree can be broadly classified into two categories namely bilva tree and maha bilva tree. First category tree has three-prolonged leaf and the other one is called maha bilva tree which has 13 leaves. These leaves are used to pray and worship the god shiva. The entire tree has very good medicinal properties [9]. Its Leaves, Flowers, Unripe fruit, Crust and Root, all act as medicines and are mostly used in the siddha medicine field. Bael is beneficial in treating tuberculosis, hepatitis, ulcer and constipation, diarrhea, diabetes, and digestive problems etc. Its Maximum Reachable Height is up to 10 meters. Leaves are green in colour . Flower Colour is yellowish green and blooming time is April-May. These trees mostly can be found in or nearby to the Shiva temple.













Bael is a rare species of plants native to the Indian subcontinent and Southeast Asia. It is found in India, Bangladesh, Sri Lanka, Nepal as a natural species. Bael is found in foothills of Himalayas, Uttar Pradesh, Bihar, Chhattisgarh [10]. Bilva trees is found growing in and around most Shiva temples in India. The tree also grows in dry arid soil of Vietnam and Pakistan. This tree grows successfully in a wide range of soils like sandy, stony, or even clay, but a sandy and loamy soil is also favorable for the successful growth of Bilva tree. Bilva tree requires low water, for the better yield of fruits. For the growth of plant, it should be watered regularly. It requires frequent watering during summers and spring. During winter season, this activity is found to be reduced. During the growing season plant is fed with organic fertilizer once in a month.

Flowers starts to bloom in late May and fruits form quickly [11]. Fruits remain green until they ripen and then when they turn yellowish, it takes 11 months to ripen on the tree. The edible portion of Bael is fleshy and almost orange in colour with mucilage and a soft texture. Bilva tree can be planted in rainy season, the stem height is normally 5 cm to 7 cm tall with 3 leaves to 5 leaves. It has taproot and grows up to 20-25 cm long. It is also propagated by root cuttings and stem cuttings. Bael is fully filled with a myriad of nutrients which has essential nutrients like vitamins A, B1, B2, C and minerals calcium, potassium and iron.

Bael fruits are consumed for treating the diseases like chronic diarrhea, dysentery, and peptic ulcers, as a laxative and to recuperate from respiratory affections in various folk medicines. Decoction of the stem or bark of the plant plays a major role in treating heart related diseases, further it improves digestion and treats rheumatoid. It is believed that if any person

who touches the Bel leaves, he/she is freed from all kind of negativity, sins and ailments. The young suckers have the stout and sharpest spines to protect the suckers.

Table 1 Tree, Leaf, Flower and Fruit

Name	Tree	Leaf	Flower	Fruit
Amla				
Bilva				
Peepal				

Conclusion

In conclusion different plants exhibit different medicinal properties. The sacred trees with medicinal values are considered good species to be conserved in urban and rural areas where human population is plenty. These plants play a major role in health care and conservation of biodiversity. Thus more importance must be given for the growth and maintenance of all varieties of medicinal species for human existence.

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