

‘MAHA VILVA’ A SACRED TREE WITH IMMENSE MEDICINAL SECRETS: A MINI REVIEW

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ABSTRACT

Maha Vilvam is a holly tree commonly found in the sacred groves from Kanyakumari to Kashmir in the foot hills and in plains which has many medicinal secrets. *Vilva* trees are the Sthala virusham of the most of the Shiva temples in India. The Botanical Name of the *Vilvam* is *Aegle marmelos*(L.) Corr., which belongs to the Orange family Rutaceae. All the parts of the plant are used as an important medicine. Even though all the parts of the plants are useful, the leaves and fruits are mostly used as important drug in the ancient system of medicine to cure almost all the common ailments of the human being. The religious importance, the traditional use of the plant in the Indian System of Medicine, the folklore medicinal uses, the phytochemical content and the usage of *Vilvam* in the modern system of medicines were collected and discussed in this present communication

Keywords: *Aegle Marmelos*, Medicinal Plant, Ethno botany, sacred tree

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INTRODUCTION

The *MahaVilva* tree is associated with Lord Shiva. Its trifoliate leaf or tripatra, is believed to symbolise the three functions of the Lord – creation, preservation and destruction - as well as His three eyes. The offering of the leaves is a compulsory ritual while worshipping Lord Shiva all over India. It is commonly called as *Vilva* tree. According to the Agni Purana, on any auspicious day in Bhadra, Shiva should be worshipped with a daylong fast and the eating of *Vilva* leaves at night. The Padma Purana and the Brahma Purana says that Shiva once hid in the *Vilva* to escape conquering demons. The Skanda Purana holds that the *Vilva* grew from Parvati's perspiration, which fell to the ground while she performed penance. It also says that the various incarnations of Parvati reside in each part of the tree. The Brihaddharma Purana relates how Lakshmi prayed to Shiva every day and offered him 10,000 lotus buds. One day she fell short by two buds. Remembering that Vishnu had compared her breasts to lotus buds, she decided to offer them instead. She cut one off and offered it humbly. Before she could cut the other, Shiva, pleased with her devotion, stopped her. Her cut breast became the fruit of the *Vilva*. The Bhavishya Purana says that after the samudra manthan, Lakshmi, who had just emerged from the ocean, rested in the *Vilva*. It was the ninth bright day of Bhadra. Therefore, the *Vilva* is worshipped every year on that day.

In Hinduism, the Lord Shiva is said to live under the *Vilva* tree. Lord Shiva is very much pleased by offerings of leaves from the *Vilva* tree. Thus the brahmanas worshipped Lord Shiva by offering *Vilva* leaves, for a period of one fortnight and satisfied Lord Shiva greatly. Its fruit, flowers and leaves are all sacred to Shiva. Planting *Vilva* trees around home or temple is sanctifying, as it is worshiping a Linga with *Vilva* leaves and water. It is considered to be very auspicious and sacred to Hindus as its leaves and wood are used as essential items of pooja samagri for worship of Lord Shiva. For this reason it is also called Shivadurme. It is considered as an emblem of fertility. Because of this spiritual use, it is often found in the garden of temples.

Lakshmi, the goddess of fortune, is said to reside in the *Vilva*. Ancient Sanskrit texts refer to it as *Vilva* and the fruit of prosperity. Its leaves are an important offering to Shiva, for their trifoliate shape signifies Shiva's three eyes. Since they have a cooling effect, they are offered to the Shivalingam to soothe this hot-tempered deity. Even a fallen *Vilva* is never used as firewood, for fear of arousing Shiva's wrath. Its wood

is used only in sacrificial fires. The tree is also sacred to the Jains. The 23rd Tirthankara, Bhagwan Parasnathji attained enlightenment under a *Vilva* tree.

The Botanical name of *Vilva* is *Aegle marmelos* (L.) Corr. and the Synonym is *Crataeva marmelos* Linn. Genus *Aegle*, Species *marmelos*, belongs to the family Rutaceae Vernacular names are in English: Bengal quince, Beal fruit, Golden apple, Holy fruit, Indian quince, Stone apple. In Tamil : Aluvigam, Iyalbudi, Kuvilam, Mavilangai, Vilwam, Villuvam. In Telugu *Vilvamu*, Maluramu, Maredu, Sailushamu, Sandiliyamu, Sripthalamu. In Hindi : Bel, Bili, Sirphal, and Bela, InSanskrit Adhararutha, Asholam, Atimangaliya, *Vilva*, Durarutha, Gandhaptra, Goharitaki, Hridyagandha, Kantakadhya, Kapitana, Sripthala, Lakshmiphala, Mahakapitthakya. InBengal *Vilva*, Bel, In Gujarat Billi, In Kannada Bela, *Vilva*. In Malayalam Koovalam, Vilwam. In Orissa Belo^[1]

Human beings are often met with mainly three types disease known as threedhosam namely Vatha, Pitha and Kapha. Among the three the *Vilva* is used to cure pitha disease mainly called agni nivaran.

In India the medicinal plants are commonly found in the sacred groves. The sacred groves are one where some of the most important medicinal plants are grown and protected for long ages. In the sacred grove *Vilva* is one of the most common species. The Maha*Vilva* is found very common in the plains and mountains from Kanyakumari to Kashmir. In Kanyakumari district there are twelve famous Lord Shiva temple namely, Tirumalai, Thikurichi, Thirparappu, Thirunandhikarai, Ponmanai, Pannipagam, Kalkulam, Melancode, Thiruvaidaikodu, Thiruvithancode, Thirupanticode and Thirunattalam and in all the Shiva temple the *Vilva* tree is the Sthalavirusham, where the God resides under the *Vilva* tree. In Tirunelveli District, Kadayam is the place famous for lemon in South India. It is situated in the foot hills of Western Ghats and there is a big Lord Shiva temple and the name of the God is *Vilva* Vananathar. The name itself indicates that there is a thick forest with the dominating species of *Vilvam*, where the authors have identified 5 types of leaves namely 3 lobed with small leaves, 3 lobbed with big leaves, 5 lobed, 7 lobed and 9 lobed. The five phenotypic characteristic features of the leaves may be due to the out breeding of the different traits of genomes among the local *Vilvam* population. The *Vilva* is a holy plant and its all parts are very useful, generally it is seen that if one part of any plant show any pharmacological effect then there is a major possibility that the other part give the same or related activity. The same principle is applied here with the *Vilva* tree.

Distribution

The *Vilva* tree is found all over India, from sub Himalayan forests, Bengal, Central and in Burma¹. This is tree occurs in the sub mountainous regions and plains almost throughout India. It is also cultivated commonly throughout the country accenting to 1200 MSL². Taxonomic description, distribution, pharmacognostical studies leading to establishment of correct identification of the raw drugs used and propagation methods of *Vilva* were given by³. In west Bengal, there are 13 types of fruits in *Aegle marmelos*. Based on the fruits size and shape, the fruits were grouped under five categories (oval, flat, spherical, oblong and pear shaped) and in each group three subgroups (small, medium, big) were separated⁴.

Leaves

The deciduous, alternate leaves, borne singly or in 2's or 3's, are composed of 3 to 5 oval, pointed, shallowly toothed leaflets 4-10 cm long, 2-5 cm wide, the terminal one with a long petiole. New foliage is glossy and pinkish-maroon. Mature leaves emit a odor when bruised.⁵

Fruit and Seeds

Fruits are yellowish green, with small dots on the outer surface, oblong to globose, 5.3 cm to 7.2 cm in diameter; weight, 77.2 g; volume, 73.7 ml; pulp, yellow and mucilaginous, the pulp of dried fruits retains its yellow, and also remains intact; rind woody, 4 to 5 mm thick⁶. The Seeds are, numerous, embedded in the pulp, oblong, compressed, with white, cotton-like hairs on their outer surface. Seeds, non endospermous and surrounded by a mucilaginous mass. Embryo with thick fleshy cotyledons.^{7,8}

Traditional Uses

Vilva leaves are useful in jaundice and in the treatment of wounds. The extract of leaves is beneficial in the treatment of leucorrhoea, conjunctivitis and deafness. Fruits give feeling of freshness and energy. It is used as carminative and astringent. It finds good utility in thyroid related disorder. The other fine therapeutic uses reported are cardiac stimulant, swollen joints, pregnancy trouble, typhoid and coma. The dried powder of leaf is used in the treatment of irritable bowel syndrome.⁹

Phytochemical composition of *Aegle marmelos*

Different organic extracts of the leaves of *A. marmelos* have been reported to possess alkaloids, cardiac glycosides, terpenoids, saponins, tannins, flavonoids and steroids^{10,11}. *Aegle marmelos* fruit pulp reported for the availability of steroids, terpenoids, flavonoids, phenolic compounds, lignin, fat and oil, insulin, proteins, carbohydrates, alkaloids, cardiac glycosides and flavonoids¹²

Table-1: Phytochemical Constituents

Nutritional Value of <i>Vilva</i> Fruit (100gms)	
Edible protein	64%
Moisture	61.5gm
Protein	1.8gm
Fat	0.3gm
Minerals	1.7gm
Fiber	2.9gm
Carbohydrate	: 31.8gm
Energy	137kcal
Calcium	85mg
Phosphorous	50mg
Vitamin-C	8mg
Potassium	600mg
Vitamins	rich in B1 and B2
Sodium	Nil

Antimicrobial activity

Rani *et al.*¹³ studied the leaf extracts (methanol and aqueous) for their activity against multi-drug resistant *Salmonella typhi*. The methanol extracts of *Aegle marmelos*, showed strong antimicrobial activity. The antifungal activity of essential oil isolated from the leaves of *Aegle marmelos* was studied using the spore germination assay¹⁴. The oil exhibit variable efficacy against different fungal isolates and 100% inhibition of spore germination of all the fungi, the most resistant fungus, *Fusarium udum* was inhibited 80% at 400 ppm. Kinetic studies showed concentration as well as time dependent complex inhibition of spore germination by the essential oil. Pattnaik *et al.*¹⁵ studied the essential oils of *Aegle marmelos* and some other plants for antibacterial activity against 22 bacteria (including Gram positive cocci and Gram negative rods) and 12 fungi (3 yeast like and 9 filamentous) by the disc diffusion method. *Aegle marmelos* essential oil inhibited the 21 bacteria and all 12 fungi^{16,17}.

Antioxident activity

Antioxidants are the compounds with free radicals scavenging activity and capable of protecting the cells from free radical mediate oxidative stress. The antioxidant compounds can be derived from natural sources such as plants. Antioxidant activity of these plants is due to the presence of flavones, isoflavones, flavonoids, anthocyanin, coumarin lignans, catechins and isocatechins. *Aegle marmelos* leaf is extensively reported to possess antioxidant activity against a variety of free radicals. Antioxidant activity of the fruit of *A. marmelos* was reported. Antioxidant activity and free radical scavenging activity of the ripe and unripe fruit of *Aegle marmelos* was compared. Results indicate that the enzymatic antioxidants

increased in ripe fruit when compared to unripe fruit extract (except glutathione peroxidase). The percentage of free radical inhibition was also high in unripe fruit than that of the ripe fruit¹⁸. Methanol and aqueous extract of *A. marmelos* fruit pulp was screened for antioxidant activity by DPPH radical scavenging method, reducing power assay, nitric oxide scavenging assay, superoxide radical scavenging assay, ABTS radical scavenging assay and H₂O₂ radical scavenging assay. Both aqueous and alcoholic extract exhibited good antioxidant activity¹⁹. The antioxidant activity of the fruit of *A. marmelos* was reported. The aqueous extract of *A. marmelos* fruit was screened for antioxidant activity by the DPPH radical scavenging. The extract showed efficient antioxidant activity²⁰.

Anti-Diabetic activity

Aegle marmelos has been used to control diabetes in traditional medicinal system. Many in vivo scientific studies have been conducted in animal models to evaluate the anti-diabetic activity of different organic extracts and fresh juice of *A. marmelos*. Antidiabetic potential of the leaves and callus of *A. marmelos* was reported in streptozotocin induced diabetic rabbits. All the extracts reduced the blood sugar level in streptozotocin diabetic rabbits, however, among the various extracts, the methanol extracts of the leaf and callus brought about the maximum anti-diabetic effect²¹. The anti-diabetic activity of the leaves of *Aegle marmelos* was reported in alloxan diabetic rats. The methanolic extract (120 mg/kg body weight, ip) of the leaves of *Aegle marmelos* reduces the blood sugar level. Reduction in blood sugar could be seen from 6th day after continuous administration of the extract and on 12th day sugar levels were found to be reduced by 54%²².

General Uses

Every part of the *Vilva* tree is utilized for various purposes. The wood is yellowish or grayish white, hard lustrous, aromatic when freshly cut. It takes a fine polish and is suitable for house building, cart construction, agricultural implements, carving, pestles, tool handles, combs, etc., but the tree is too valuable to be felled for its timber^{23,24}. The twigs are also used as tooth brushes or chew-sticks. A sweet-scented water is distilled from the flowers. Leaf juice is applied to the body before taking a bath to remove bad smell²⁵. The most valuable part of the tree is the fruit. A yellow dye is obtained from the unripe rind, which is used with myrobalans in calico printing. The sweet aromatic fruit pulp is very nutritious, which is used for making Sharbat²⁴. The pulp is often used as a substitute for soap for washing clothes as it has detergent properties²⁴. Gum from stem is non edible but acts as a good adhesive and used often for book binding^{26,23}. Beating the seeded pulp together with milk and sugar makes a popular drink called Sharbat in India. Mature (full grown) but still unripe fruits are made into jam with addition of citric acid. The pulp is also converted into marmalade or syrup, which is used as food material as well as a therapeutic agent in relieving diarrhoea and dysentery. A firm jelly is made from the pulp alone or combined with guava to modify the astringent flavour. The pulp is also pickled^{27,28}. Nutritional value Physico-chemical studies have revealed that *Vilva* fruit is rich in mineral and vitamin contents^{29,30,31}. *Vilva* fruit toffee is prepared by combining the pulp with sugar, glucose, skim milk powder and hydrogenated fat. The young leaves and shoots are eaten as a vegetable in Thailand and used as seasonal food in Indonesia. These are said to reduce the appetite. An infusion of the flowers is used as a cooling drink³². The unripe or half ripe fruit is the most effective remedy for chronic diarrhoea and dysentery without fever. Best results are obtained by the use of dried fruit or its powder. The fruit, when it is still green, is sliced and dried in the sun. The dried fruit slices are reduced into powder and preserved in air-tight bottles. The unripe fruit can also be baked and taken with jaggery or brown sugar³³. The powdered drug is specially recommended in sub-acute or chronic dysentery. After the use of the fruit powder in these conditions, the blood gradually disappears and the stools resume a more feculent and solid form³⁴. The mucus also disappears after continued use for some time. It is also a valuable remedy for chronic dysenteric conditions characterized by alternate diarrhoea and constipation^{35,36}. Its use has also been reported in the cases of amoebic dysentery³⁷.

In Siddha medicine *Vilva* is used for all Piththa diseases. *Aegle marmelos* plants leaf, fruit and bark are widely used for many diseases. According to the verse in Agathiyar Gunavakadam, leaf, flower, and fruit

are used for venereal diseases, ulcers and azoospermia. The unripe dried fruit is astringent, digestive, stomachic, used to cure diarrhea and dysentery. Sweet drink (Sherbet) prepared from the pulp of fruits produce a soothing effect on the patients who have just recovered from bacillary dysentery^{38,39}. The unripe and half ripe fruits improve appetite digestion. The ripe fruit is a good cure for dyspepsia (indigestion). The pulp from the unripe fruit is soaked in gingerly oil for a week and this oil is smeared over the body before bathing. This oil is said to be useful in removing the peculiar burning sensation in the soles^{40,41}. The roots and the bark of the tree are used in the treatment of fever by making a decoction of them. Good against malaria. The leaves are made into a poultice and used in the treatments of ophthalmic. The roots are sweet, cure the fevers caused by tridosha, stop pain in the abdomen, the palpitation of the heart and allay urinary troubles⁴². An unripe *Vilva* fruit is taken, it's cracked in two or three places and roasted when the inside of the fruit is softened by the heat and the starch is further converted into sugar. This is mixed with hot water to which a little fried and pulverized Anise (*Foeniculum vulgare*) is added and the whole mixture is strained so that the starch water containing *Vilva*-sugar, the active anti-dysenteric principle of *Bael* fruit and the fine particles of the carminative anise, are taken as food three or four times a day.¹

In Ayurvedic medicine all parts of *Aegle marmelos* are medicinally useful like, leaves, fruit pulp, and flower, stem bark, root bark^{43,7}. Ripe fruit is sweet, aromatic, cooling, alterative, and nutritive. When taken fresh, it is useful in constipation, chronic dysentery and dyspepsia. Unripe fruit is astringent, digestive, stomachic and demulcent. Pulp is stimulant, antipyretic and antiscorbutic. Fresh juice is bitter and pungent. Root and stem bark are used as antipyretic. The flowers of *A. marmelos* are astringent and antiseptic. The flowers and leaves yield a volatile oil. From the flowers is distilled a perfume called 'Marmala Water'. Marmala water diluted in three or four times its volume of distilled water makes a useful collyrium for catarrh conjunctivitis. The root, when taken internally acts as aromatic stomachic, carminative, and mild astringent, and proves useful in anorexia, acute and chronic dyspepsia, acute diarrhoea and dysentery, flatulence and colic. After absorption it is excreted by the skin and bronchial mucous membrane, and stimulating those acts as a diaphoretic and expectorant. As a diaphoretic it is useful in typhoid and other continued fever with diarrhoea and flatulence and as an expectorant in chronic bronchitis and proves useful in diarrhea and dysentery after the acuter symptoms subside. In case of diarrhoea and dysentery, milk prepared by boiling it with the pulp of the unripe fruit agrees much better than plain milk. The ripe pulp taken with sugar is laxative, and is useful in habitual constipation and hemorrhoids.

Fruit is very valuable in habitual constipation, chronic dysentery and dyspepsia. It is one of the ingredients in the 'Dasamul' or ten roots used in Ayurveda. Unripe or half ripe fruit, owing to the presence of tannins or mucilaginous substances which act as demulcent, cut up in slices and sundries or roasted and made into a confection (conserve) or a powder, is prescribed in chronic diarrhoea and dysentery, with debility of the mucous membrane, intestinal conditions specially useful in chronic diarrhoea and dysentery of children where there is no fever¹. Tender fruit *Tikta kashyar-rasn*, *ushma veeryam*, *vata kapha haram*, *pittakaram*, *grahi*, *ruksam*, *lagu*, *Panchanam*, *balaym*, improves agning *Fruits-mathura*, *grur Root – vataharam*.

In homeopathic treatments it is largely used for conjunctivitis and styes (pain, stitching with sensation of dust particles in eyes with lachrymator. *Style* (*orzaiolo*), mostly over upper eyelids *Rhinitis* (Cold & *Conyza* with the symptoms of *conyza*, sneezing, redness of eyes and blockage of nose); *coccygodynia* (pain in coccyx especially on getting up and better by walking); Nocturnal seminal emission with amorous dreams; chronic dysentery (*Alternate diarrhea & constipation*, stool loose with mucus).

Folk medicine

All parts of this tree, viz., root, leaf, trunk, fruit and seed, are used for curing one human ailment or another. Old medical texts mention not only the uses of the fruit but also describe medicines prepared from its roots, tender leaves and flowers. In Ayurveda *Bel* is termed *tridosha har-* remedy for three disturbances- bile, wind and phlegm.

i. Antidote

The bark of old tree is used to prepare an antidote for the poison of all kinds of snake bite, chronic stomachache, and to treat watery diarrhea.

ii. Anxiety

The decoction of root bark is useful for intermittent fevers, melancholia, palpitation of heart and irritation of alimentary canal and hypochondriasis.

iii. Arthritis

The raw and ripe fruit have different properties. The former is bitter and pungent; its attributes are light and its potency is hot. On the other hand, the mature fruit is sweet, heavy in its attribute and its potency is soothing. The raw fruit is recommended for persons suffering from gout or arthritis since it generates heat in the body.

iv. Astringent

The fruit is high in tannin, an astringent which is commonly added to the water used to wash burns and abrasions.

v. Bile disorder

The ripe fruit helps to eliminate the ailment caused by excessive bile, but drinking water immediately after eating the fruit aggravates the bile-disorder.

vi. Burning sensation

The pulp from the unripe fruits is soaked in gingelly oil for a week and this oil is smeared over the body before bathing. This oil is said to be useful in removing the peculiar burning sensation in the soles.

vii. Catarrhal fever

The fruit and leaves are used to destroy phlegm and is a good remedy in fevers associated with catarrhal symptoms, also good for dropsy.

viii. Cardio tonic

The *Vilva* tree leaf has anti-inflammatory properties and also a good cardio tonic.

ix. Constipation

Vilva is an effective remedy for spastic colon and chronic constipation. The juice of Bel leaves when taken with black pepper relieves constipation.

x. Colic

The pulp and rind of the fruits are useful to treat colic.

xi. Conjunctivitis

In homeopathic treatments *Vilva* tree leaves is largely used for conjunctivitis and styes (Pain, stitching with sensation of dust particles in eyes with lachrymation).

xii. Convulsion

The fruit is used as a remedy for ailments such as convulsions

xiii. Dysentery

The half-ripe fruit is effective in diarrhea and dysentery. The effect of the mature or ripe fruit on the digestive system is absolutely different. Sweet drink (sherbet) prepared from the pulp of fruits produce a

soothing effect on the patients who have just recovered from bacillary dysentery. Powdered pulp is used to treat acute dysentery with griping pain bed wetting. It is used as a carminative.

xiv. Dyspepsia

The ripe fruit is a good and simple cure for dyspepsia (indigestion). *Vilvam* is a traditional summer tonic - a soother for disturbed tummies and a cooling agent that improves sluggish appetite. The micro-nutrients of this fruit correct digestive disturbances. The unripe fruit and half-ripe fruits increases the digestive power, but the ripe fruit is difficult to digest.

xv. Edema

Leaf poultice with black pepper applied to treat edema.

xvi. Fever

The *Vilva* leaves juice along with water or honey it is good for catarrh, fever, puerperal fever, common cold and jaundice.

xvii. Gingivitis

Vilva twigs are used to treat gingivitis. Brushing the teeth with young branch of this plant is beneficial to strengthen the gums.

xviii. Inflammation

The fruit is useful for inflammation in tongue. Leaf poultice is applied to treat inflammations.

xix. Laxative and diuretic

Marmelosin derived from the fruit pulp is given as a laxative and diuretic.

xx. Leucoderma

The pulp of the fruit is employed in the treatment of leucoderma.

xxi. Long life span

Regular drinking of fruit juice ensures long span of life and golden color of the skin.

xxii. Heart palpitation

The fruit of the *Vilva* tree is good for heart and stomach, Kapha disorders, intestinal tonic, cholera, obstinate mucus and; typhoid, debility, hypochondria, melancholia, and for heart palpitation.

xxiii. Heat stroke

The ripe fruit is cooling and sherbet made from its pulp wards off heat stroke and other fiery afflictions.

xxiv. Hemorrhoids

A decoction of the unripe fruit with fennel and ginger is prescribed in cases of hemorrhoids.

xxv. Malarial fever

The roots and the bark decoction of the tree are used in the treatment of fever, especially against malarial fever.

xxvi. Nausea

The fruit and leaves are useful to treat poor absorption, bleeding, vomiting, and nausea with blood.

xxvii. Ophthalmia

The leaves are made into a poultice and used in the treatments of ophthalmia.

xxviii. Skin toner

Diluted *Vilva* pulp with turmeric, sandalwood powder and mustard powder mixed into a paste acts as cleanser and skin toner. This paste is also good for sluggish skin. Apply the paste on the body and leave it for half an hour before a bath. This will help open the pores.

xxix. Ulcers

Vilva leaves are rich in tannin, prove effective in ulcers. The leaves are soaked overnight in water and this water is taken in the morning. It helps to form a coating on the stomach's internal lining and helps in healing ulcers^{44,45}.

xxx. Others Uses

The roots are sweet, cure the fevers caused by tridosho, stop pain in the abdomen, the palpitation of the heart, and allay urinary troubles. They are also useful in the disorders of vata, pitta and kapha. Decoction of leaves is febrifuge, expectorant, asthmatic complaints and useful in the treatment of diabetes. It is also used to treat bronchitis. The unripe dried fruit is astringent, antidiuretic, anthelmintic, antipyretic, and stomachic.

The paste of this plant is a good sterilizer for clothing's, beds, furniture, coat of armour, ornaments, canopy and fans made of wools and furs. The gum enveloping the seeds is most abundant in wild fruits and especially when they are unripe. It is commonly used as household glue and is employed as an adhesive by jewelers. Sometimes it is resorted to as a soap-substitute. It is mixed with lime plaster for waterproofing wells and is added to cement when building walls. Artists add it to their watercolors, and it may be applied as a protective coating on paintings.

The leaves and twigs are lopped for fodder. Leaf extract have insecticidal activity against the brown plant hopper, an important pest of rice plant in Asia.

The dried fruits, after their pulp separated from the rind (shell of hard fruits), are used as pillboxes for keeping valuable medicines, sacred ashes, tobacco, snuff and sometimes decorated with gold and silver.

A yellow dye is obtained from the rind of the unripe fruits and is used in calico and silk fabrics printing. An essential oil is distilled from the rind. The fruits are also used in making paints in Burma. The rind contains up to 20%. Tannin is also present in the leaves.

The limonene-rich essential oil has been distilled from the rind for scenting hair oil. The essential oil is one of the ingredients used in the preparation of mouthwash liquid. It is used in massage oil for the massage of the marmas VIDHURA and SIMANTA and for balancing the 3 doshas. Inhaling the oil, obtained from this plant, increases the poetic acumen of the inhaler and enables to live a long life. The leaves are said to cause abortion and sterility in women. The bark is used as a fish poison.

Ethnobotanical Information

The term "Ethnobotany" was first used by Harshberger⁴⁶ and its scope was much elaborated later (Faulks, 1958 and Ford, 1978)^{47,48}. Since then there has been a growing interest in this field⁴⁹. Ethnobotany in the wider context denotes the entire realm of useful relationship between plant and man. Ethnobotany studies assume great importance in enhancing our knowledge about the plants grown and used by native / tribal communities⁵⁰. Ethnomedical information on *Aegle marmelos* is available from many parts of India and other countries. Available ethnomedical literatures reveal that entire plant, leaf, fruit, stem bark, root and essential oil of fruits of this plant are used in various diseases. Decoction of dried leaf of *Aegle marmelos* and entire plants of *Borreria hispida*, *Cardiospermum helicacabum*, *Evolvulus alsinoides* is used as medicine for curing jaundice, inflammation, piles, asthma, malarial fever, dysentery, skin disease etc.⁵¹

The plant has been already reported for eye complaints from the district of kamrup in Assam. It reduces heat in abdomen used by the tribals from Ranchi and Hazaribug district of Bihar and Mirzapur district of Uttarpradesh⁵². It is given the honor by saying it as sriphala and by associating it with Lord Shiva who is fond of its leaves. *Vilva* is one of the members of *dasmula* in which its root is used⁴⁹.

Aegle marmelos was used as a stick by the Babylonian 7000 years ago. Puppetries and dental oral health have been discussed. In Srivilliputhur T.K., of Tamilnadu ethnobotanical study reported that, 40 plants including *A. marmelos* were found to be commonly used as medicine for curing jaundice, piles, dysentery, malarial fever⁵¹. Dhanapandi et al observed ethnoveterinary herbal practices in Thanjavur district. Some of ethnoveterinary plants used from the study area include *Aegle marmelos*, *Casia auriculata*, *Mukia scabrella* and *Lippia udifloea*. Applying of leaf paste on head has been reported as remedy for premature graying of hair. The leaf juice of *A. marmelos* is used in diabetoemia; the leaves along with the seed of *Foeniculum vulgare* are used for chronic diarrhea and dysentery⁴⁹.

Stem yields a gum and leaves contain essential oil. Stem and root are used as antipyretic¹. One of the sources of gum in Asia is Asiatic tropic gums from *A. marmelos*. Bark of Beal tree and the roots *Andrographis paniculata* are made into a paste. The paste is made into small piles after drying in sunlight one tablet is taken thrice daily to cure diarrhea⁵². Only ripe fruits are eaten. A delicious drink is prepared by mixing the fruit with sugar and milk medicinally; the pulp of ripe fruit is given for chronic stomach disorders⁵³.

The pulp of fruit is commonly used for preparation of jam, candy, syrup etc, the tribal child use roasted fruit. The mucilaginous substance around seed is used as an adhesive. The tripinnately digital leaves are used for worship by tribal⁵⁴. The root infusion has been reported to reduce body ache and indigestion in children. The plant has been already reported for body ache from Kamrup district of Assam. Root is applied externally on snake bite⁵⁵. It is given the honor by saying it as 'sriphala' and by associating it with Lord Shiva who is fond of its leaves. *Vilva* is one of the members of *Dasmula* in which its root is used⁵⁶. The root powder has been reported as remedy for dyspepsia, gastric trouble, jaundice and swellings. The plant has been already reported for gastric trouble from sandal pargana of Bihar. Root decoction helps normal delivery⁵⁷. *Aegle marmelos* leaves claimed to be useful in treating pain, fever, inflammation, respiratory disorders, cardiac disorders, dysentery and diarrhea⁵⁸⁻⁰. More than 30 identified compounds from the leaves of *Aegle marmelos* have been reported⁶¹⁻³. Based on the ethnomedical reports, following clinical and pharmacological studies were carried out by using the various parts of *Vilvam*.

Dried Leaf hot water extract is given for Digestive stimulant in human adult. Fruit extract for Antispasmodic activity in guinea pig. Dried Fruit hot water extract used as digestive and stomachic. Dried fruit hot water extract in human adult for Stomachic. Dried fruit hot water extract for asthma and antipyretic for human.

CONCLUSION

The mentions of *Vilva* plant have been found in ancient Indian scriptures such as Vedas and Purana like Yajurveda and Mahabharata. Hindus hold the *Vilva* tree in great veneration. It is one of the most sacred trees of India. The leaves are ternate and hence one of the vernacular names is Tripatra. It is generally cultivated near temples and is offered to Lord Shiva, whose worship cannot be completed without the leaves of this tree. Lord Shiva is believed to live under the *Vilva* tree. It is also called Shivadurme, the tree of Shiva. According to Hindu mythology, the tree is another form of Lord Kailashnath. It is also sacred to Parvati and is the *Vilva* rupra, one of the Patricas, or nine forms of Goddess Kali. The planting of this tree by the waysides gives long life. Its leaves are also used as enchantments. It is incumbent upon all Hindus to cultivate and cherish this tree.

Maha*Vilva* is a divine tree which thrives well in all agro climatic conditions from Kanyakumari to Kashmir and all parts of the useful. It pleases the Lord as well as cures all common ailments of Human being by all means. It is our humble duty to protect the species and save the environment and save the mankind from destruction. In the light of the above seen evidences *Vilva* is a sacred tree with immense religious and medicinal secrets on it.

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