

Review on *Elaeocarpus Ganitrus* (Rudraksha)

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Submitted: 05-02-2022

Accepted: 20-02-2022

ABSTRACT

Elaeocarpus ganitrus Roxb. (*E. ganitrus*) is an evergreen tree belongs to the family *Elaeocarpaceae* and it is discovered in Himalayan range in India and Nepal. Fruits and leaves are known for various medicinal properties and used in traditional medication system for the treatment of disease and it is widely distributed from Madagascar in the west through India, Southeast Asia, Malaysia, Southern China and Japan, Australia to New Zealand, Fiji and Hawaii in the East with approximately 350 species. The stem of the *Elaeocarpus ganitrus* tree is cylindrical with an off white and path textured bark. The flowers of *Elaeocarpus ganitrus* are white in color and come into view in April-May and the fruits of *Elaeocarpus ganitrus* Roxb species are endowed with a very hard and highly ornamental Stony endocarp.

Key words: *Elaeocarpus ganitrus*, Rudraksha, Anti-inflammatory, Antioxidant.

I. INTRODUCTION

The word *Elaeocarpus* is derived from Greek work *Elaeo* means olive and *carpus* means fruits (refer to olive like fruits catch up by the genus) [1-2]. *Elaeocarposphaerius* usually known as *rudraksha* in Sanskrit and *rudra* in Hindi. It is crop in the Assam and Himalayan region of India for its attractive fruits stones medicinal properties [3]. It belongs to the family of *Elaeocarpaceae*. It is widely distributed from Madagascar in the west through India, Southeast Asia, Malaysia, southern China and Japan, through Australia to New Zealand, Fiji and Hawaii in the East with its approximately 350 species [4,5-6]. It's far a large evergreen tree which is found in Himalayan region and also in area of gangetic plain. The plant reaches in the height of 50-200 feet. The main trunk of tree is rough textured, cylindrical and grayish – white in color. The leaves are shining, green, oblong, Lanceolate, lous or acuminate, minutely crenate or serrate and almost glabrous in nature [7]. And it is used in folk medicine in treatment of stress, anxiety, depression, nerve pain,

epilepsy, lack of concentration, asthma, liver disease [8,9-10]. The word *rudraksha* is derived from two words - *Rudra* and *Aksha*.

1. *Aksha* means eyes. *Rudra* and *Aksha* mean the one who is capable of looking at and doing everything (for example, the third eye). *Aksha* also means axis. Because the eyes can rotate on one axis, it too is called *Aksha* according to the Ayurvedic medicinal system, wearing of *rudraksha* can have a positive effect on nerves and heart. And use of *rudraksha* is increasing with passage of time. The species belong to genus *Elaeocarpus* were claimed to exhibit anti-aging, anti-anxiety, anti-depressant, antidiabetic, anti-inflammatory, sedative, antifungal properties. Ethanolic extract of leaves include Gallic acid, ellagic acid and Quercetin. And this plant has been also proved to be an excellent center for researchers for scientists [11]

Some common species are:-

- . *Elaeocarpus aberrans*
- . *Elaeocarpus acrantherus*
- . *Elaeocarpus acuminates*: India. Endangered.
- . *Elaeocarpus acutifidus*
- . *Elaeocarpus aemulus*
- . *Elaeocarpus affinis*
- . *Elaeocarpus alaternoides*
- . *Elaeocarpus alatus*
- . *Elaeocarpus alnifolius*
- . *Elaeocarpus amboinensis*
- . *Elaeocarpus amoenus*: Sri Lanka
- . *Elaeocarpus amplifolius*
- . *Elaeocarpus angustifolius*: (Syn. *E. grandis*) Blue fig, blue marble tree, blue quandong, Queensland, Australia
- . *Elaeocarpus apiculatus*: China, Indonesia, Malaysia, Philippines
- . *Elaeocarpus biflorus*
- . *Elaeocarpus blascoi*: India. Endangered.
- . *Elaeocarpus castaneaefolius*
- . *Elaeocarpus chelonimorphus*
- . *Elaeocarpus coorangooloo*: Queensland (Australia)
- . *Elaeocarpus coriaceus*: Sri Lanka

- . Elaeocarpus crassus: NewGuinea
- . Elaeocarpus dentatus: New Guinea
- . Elaeocarpus eumundii
- . Elaeocarpus floribundus
- . Elaeocarpus hookerianus: Pokaka, New Zealand[12,13-14]

Tripura to free the Devas from him in order to defeat him, lord Shiva needed a weapon named kalagni. Lord Shiva kept his eyes closed for many years to acquire this weapon. When he opened his eyes, drops of tears fell on the surface of the earth. These drops created Maharudraksha. Twelve types of rudraksha came from the sun-eye of Siva 16 from the moon-eye and 10 from the fire-eye. The first one were blood-colored, the second white and third black[15]

Story of origin of Rudraksha

According to ancient scriptures and legends, lord Shiva wanted to kill demon named

Different Types of Rudraksha with their Major benefits and astrological Uses

Types of Mukhi/Ruling God	Planet/Zodiac signs	Shape	Beej mantra	Indications	Astrological uses
1 Mukhi /Shiva	Sun/Leo	Half moon shape	Om Namah shivaya Om Hreem Namaha	Chronic asthma heart problems, mental anxiety, T.B, Paralysis stroke, eyes problem bone pain and headache	enlightens the great consciousness provide improved concentration and mental structure Change to renunciation form worldly affairs. The wearer enjoy all comforts at his command but still remains unattached
2. Mukhi/Aradhanesh war	Moon/ Cancer, Scorpio	Two natural lines or facets on its surface	Om Shiva shaktihi Namah	Impotency , renal failure, Stress , anxiety lack of concentration, depression , negative thinking, eyes problem , mental chaos , hysteria and intestinal disorders	Blesses the wearer with Unity .It could be related to guru-shishya parents-children husband-wife or friends Maintaining oneness is its peculiarity
3. Mukhi /Agni	Mars/Aries, Cancer, Leo, Pisces	Three natural lines or mukhas on its surface	Om kleem Namaha	Depression , schizophrenia, weakness multifarious directive of the menstrual cycle /menstrual Stress ,	The Wearer gets free from sins or wrongs from his life and return to purity. ideal for those who suffer from inferior complexes, subjective fear ,

				fixation or guilt induced complex , blood pressure, mood swings fever or weakness , jaundice and mental disability	gulty and depression.
4 Mukhi/Brahma	Mercury/Gemini v, Virgo	Four lines on its surface	Om Hreem Namaha	Blood circulation, cough and brain linked illness asthma memory lapse and respiratory problems	The wearer gains power of creativity when blessed. Increase memory power and intelligence
5.Mukhi/kalagni	Jupiter / Aries Scorpio, Pisces	Five natural lines (Mukhas) on its surface	Om Hreem hum Namah	Blood pressure , heart problems, stress , mental disability, fatness ,anger management diabetic piles neurotic and mal adjustment problems	Wearer gains health and peace.it increase memory also
6. Mukhi/ Karthikeya	Venus/Taurus, Gemini Virgo, Libra, Capricorn, Aquarius	Six natural lines (Mukhas) on its surface	Om Hreem Namah	Epilepsy and gynecological problems	Saves from the emotional trauma of worldly sorrows and gives learning wisdom and knowledge. Affects understanding and appreciation of love, sexual pleasure music and personal relationship
7.Mukhi/Mahalaxmi	Saturn/Taurus , Libra, Capricorn, Aquarius	Seven natural lines (Mukhas) on its surface	Om Hum Namah	Asthma pharyngitisinportency,foot related disease respiratory and confusion	It should be worn by those who are suffering from miseries pertaining to body, finance and mental set-up. By wearing this man can

					progress in business and service and spend his life happily
8.Mukhi/Ganesh	Rahu	Eight natural lines (Mukhas) on its surface	Om ganeshaya Namaha	Stomach ache, Stress, skin disease and anxiety	Removes all obstacles and brings success in all undertaking. It gives the wearer all kinds of attainment-Riddhies and Siddhies. His opponents are finished i.e theminds. Or Intension of his opponent are changed
9.Mukhi/Durga	Ketu	9 natural lines (Mukhas) on its surface	Om Hreem Hum Namaha	Work as mysterious medicine for treating strange disease	Wearer is blessed with lot of energy, power, Dynamism and fearlessness which are useful to live a life of success
10.Mukhi/Vishnu	None	10 nature lines (Mukhas) on its surface	Om Hreem Namaha	Hormonal inequality in the body, mental insecurity and whooping cough	This contains the influence of ten directions. It works like a shield on one's body and drives evils away
11.Mukhi/Hanuman	None	11 natural lines (Mukhas) on its surface	Om Hreem Hum Namah	Body pain, backache, chronic alcoholism and liver disease	Blesses Wearer with wisdom, right judgement, powerful vocabulary adventurous life, fearlessness and success. Above all, it also helps in meditation and removes the problems of yogic practice
12.Mukhi/Sun	Sun/Leo, Sagittarius	12 natural lines (Mukhas) on its surface	Aum Krauma Sraum Raum Namah	Bone disease, rickets, osteoporosis mental disability and anxiety	Wearer gets the quality of the sun to rule and to move continuously with brilliant

					radiance and strength, good for minister, politician, administration, business man and executive. removes worry, suspicious and fear. Increase self image and motivation
13. Mukhi/Indra	Venus/Taurus, Gemini, Capricorn, Aquarius	13 natural lines (Mukhas) on its surface	Om Hreem Namaha	Muscular dystrophies	Showers all possible comforts of life one can ever desire. It gives riches and honors and fulfills all the earthly desires and eight accomplishments (Siddhies) and the god cupid (kamadeva) pleases with the man who wear it. It is helpful for medication and spiritual and materialistic attainment
14 .Mukhi/Hanuman	None/Taurus, Gemini, Capricorn, Aquarius	14 natural lines (Mukhas) on its surface	Om shivaya Namah	Brain related and many other types of disease	Most precious divine gem-Deva Mani. It awakens the sixth sense organs by which the wearer foresees the future happiness. It's Wearer never fails in his decision. It's Wearer gets rid of all the calamities, miseries, worries. It protects from ghosts, evil spirits and black magic. It provides the wearer safety, security and

					Riches and self powder
15.Mukhi/Pashupati	Rahu	15 natural lines (Mukhas) on its surface	Om Pashupataya Namaha	Skin disease recurring miscarriage and still birth .it is measured as a blessing for women who are incapable to imagine and in such case both the partner should wear it for fruit fullness	This represents lord Pashupati and is especially beneficial for economic progress .it possesses is neither bereft of wearer nor inflicted by any kind of skin disease
16.Mukhi/Hari Shankar	Ketu	16 natural lines (Mukhas) on its surface	Om Nama hashivaya	Leprosy , tuberculosis and lung disease	It represents victory and the possessor is never affected by heat or cold .it is especially useful in attaining property , vehicles and all physical assets
17.Mukhi/Lord Viswakarma	None	17 natural lines (Mukhas) on its surface	Om Namah shivaya	Memory lapse and body functions disorders	It represents vishvakarma the builder of this world .it is very effective in gaining unexpected money .it is especially useful in attaining property, vehicles and all physical assets
18.Mukhi/Bhairav	None	18 Natural lines (Mukhas) on its surface	Om Namah shivaya	Mental harmonization and loss or Power	It represents the mother earth .The possessors remain happy and healthy. It is especially beneficial for the pregnant women in protecting their child
19.Mukhi/Vishnu Narayan	Mercury	19 Natural lines (Mukhas) on its surface	Om Namah shivaya	Blood disorders and spinal disorders	It represents lord Narayana. The possessor is bestowed with all

		surface			worldly pleasures there is no scarcity in their life
20.Trijuti or Tribhagi/Bharma, Vishnu ,Shiva	None	Three naturally joined Rudraksha are a rarer phenomenon	Om Namah shivaya	Internal and external body disorders	Wearer become invincible
21Gauri /Sankar Shiva and Parvati	None /Cancer, Scorpio	Two natural joined Rudraksha	Om Shri Gaurishankar Namah	Sexual and behavioral disorders	Regarded the best for peace and comfort in the family .if a man worship gaurishankar at his worshipping place the pain and suffering and other earthly obstacles are destroyed and the peace and pleasure of family are increased
22 Garbha/Gauri Parvati and Ganesh	None	Two beads joined together naturally	Om garbha Gauriya Namah	Gynecological disorders	For women wanting to have children .her motherhood gains perfection

Taxonomical Classification

Biological source- Elaeocaropusganitrus (Roxb)

Kingdom-Plantae

Division-Magnoliophyta

Class-Magnoliopsida

Order-Oxalidales

Family-Elaeocarpaceae

Genus-Elaeocaropus

Species-E.Ganitrus

Common Name -Rudraksha

Types-Serratus Linn, E.Ganitrus

Habitat-Tree [16]

Geographical distribution

E ganitrus is commonly grown in many countries including India, Bangladesh, Bhutan, Maldives, Nepal, Pakistan, Indonesia ,New Guinea to Australia ,Guam, Hawaii and Srilanka.In India E.Ganitrus is distributed in Eastern Himalayas in Arunachal Pradesh, Bihar, Madhya Pradesh and Konkani Ghats .[17]

Description

The morphological andmicroscopically characters of plant are listed in table [18,19,20]

Morphology of Different Parts

PartsMorphological characters

Leaves : Simple,oblong-lanceolate, sub-entire or irregularly crenate, glabrous acute or acuminate



Figure No1: Leaves of Elaeocaropus ganitrus

Flower: White colored in dense racemes and mostly from axils of fallen leaves fringed petals anthers are linear appear in April and May



Figure No2: Flower of Elaeocaropus ganitrus

Fruits: Small round, or oval violet or blue colored and acidic in taste



Figure No 3: Fruits of Elaeocaropus ganitrus

Endocarp: Stony endocarp is hard, globular, strongly tubercule, marked with 5 to longitudinal ridges rarely 1 to 4, reddish, brown in color

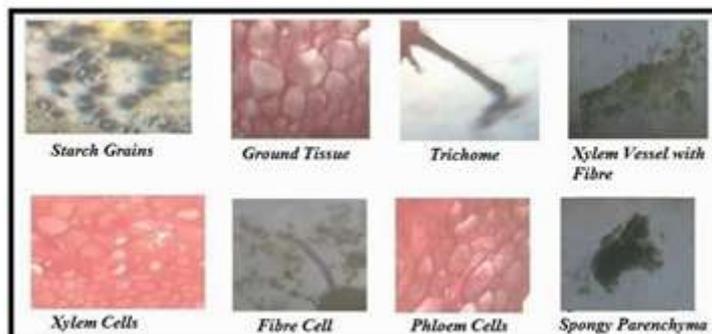


Figure No 4: Endocarp of Elaeocaropus ganitrus

Microscopy of Different Parts

Parts Microscopically characters

Leaves: single layered epidermis, compactly arranged parenchyma cells covered externally with a cuticle, palisade cell made up of two layers of elongated cells, compactly arranged chlorenchyma cells, prisms of calcium oxalates in midrib cells, conjoint, collateral and closed vascular bundles.



Figure No 5: Microscopy Parts of Elaeocaropus ganitrus

Seeds: outer layers shows 2 to 3 compact rows of tangentially elongated testa filled with brown pigment, hypodermis composed of radial elongated 1 to 2 rows of cells, aleurone grains, and fixed oil and rosette crystals of calcium oxalate.

Endocarp: several layers of characteristically arranged large islands of thick walled sclerenchyma.[21,22]

Chemical constituents

Fruits of Rudraksha contain alkaloids, flavonoids, tannins and fatty acid. After development of advance techniques like HPTLC new flavonoids Quercetin have been determined. Rudraksha fruits are thermo genesis, Sedative and are useful in anorexia, bronchitis, manic conditions and other brain disorders. The pulp of stony fruits may be useful in epilepsy and other mental disorders.[23]

Uses

Fruits have properties such as sedative, hypnotic, tranquillizing, anti-convulsive, anti-epileptic and anti-hypertensive used in the treatment of epilepsy and heart problems. Fruits also show significant anti-inflammatory, analgesic activities and protection against Rudraksha stones may be strung together as beads on a garland (mala) which can be worn around the neck. The beads are commonly strung on silk, or on a black or red cotton thread. Less often, jewelers use copper, silver or gold wires. The rudraksha beads may be damaged if strung too tightly. The Devi-Bhagavata Purana describes the preparation of rudraksha garlands[24]. Much as Christians use prayer beads and rosaries to count repetitions of prayer, Hindus

often use rudraksha garlands aids to prayer and meditation, and to sanctify the mind, body, and soul[25]. There is a long tradition of wearing 108 rudraksha beads in India, particularly within Shaivism, due to their association with Shiva, who wears rudraksha garlands. Most garlands contain 108 beads plus one because as 108 is considered sacred and a suitable number of times to recite a short mantra. The extra bead, which is called the "Meru", bindu, or "guru bead", helps mark the beginning and end of a cycle of 108 and has symbolic value as a 'principle' bead. Rudraksha garlands usually contain beads in combinations 27+1, 54+1, or 108+1. The mantra Om Nemaha Shivaya, associated with Shiva, is often chosen for repetitions (japa) using rudraksha beads[26]

Properties

Rudraksha has following healing properties

1. Antacid
2. Anti-inflammatory
3. Anti-arthritis
4. Anti-pyretic
5. Anti-hypertensive
6. Demulcent
7. Expectorant
8. Carminative
9. Digestive Stimulant
10. Anti cancer
11. Anti-mutagenic
12. Hypo-glycemic
13. Lowers bilirubin
14. Anti-gout
15. Analgesic
16. Muscle relaxant
17. Antioxidant
18. Adaptogenic
19. Anti-stress
20. Antidepressant
21. Antipruritics

1. Antimicrobial activity

Various extracts of *E. sphaericus* was evaluated for their antimicrobial activity against 28 gram-positive and gram-negative bacteria. Petroleum ether, benzene, chloroform, acetone and ethanol extracts prepared from dried fruits of *E. sphaericus* showed broad spectrum antimicrobial activity towards a variety of microorganism. Among all the extract showed remarkable antimicrobial activity than that of other extracts[27]

2. Antioxidant activity

E. ganitrus leaves extract became report to exhibit significant antioxidant activity in various

vitro method Ethanolic extract of *E. ganitrus* leaves against a variety of free radicals. Extract exhibit significant of total antioxidant activity it reduce power potential metal chelating activity and ABTS scavenging activity further positive correlation between total phenolic content and antioxidant capacity of total flavonoids content and antioxidant activity is also reported[28]

3. Anti-inflammatory activity

The benzene, chloroform, acetone, petroleum ether, ethanol, fruits extracts of *Elaeocaropus sphaericus* at a dose level of 200 mg/kg body weight was studied in rat paw edema using different inflammogens. The Ethanolic and petroleum ether fruit extract are effective against carrageenan, bradykinin and PGE. The chloroform fruit extract of *Elaeocaropus sphaericus* showed effect against histamine. Chloroform extract was essentially effective in 5-HT induced inflammation[29] and Ethanolic extract also inhibit histamine. In other study of petroleum ether, benzene, acetone, chloroform and ethanol fruit extract showed significant anti-inflammatory action against both acute and sub acute models. [30]

4. Antiulcerogenic activity

The benzene, petroleum ether, acetone, chloroform and ethanol, extracts of dried fruit of *Elaeocaropus sphaericus*, showed antiulcerogenic activities in rats [31]

5. Cytotoxic activity

Chloroform –soluble bark extract of *Elaeocaropus mastersii* was found to reveal significant Cytotoxic activity when evaluated against a pannel of human cancer call lines.[32]

6. Antiasthmatic activity

E. sphaericus fruits were reported to show antiasthmatic activity in vivo. Various solvents extracts are petroleum ether, chloroform, acetone, and ethanol of *E. sphaericus* fruits exhibited mast-cell stabilizing activity, substantiating the efficacy of *E.sphaericus* against bronchial asthma.[33]

7. Immunostimulatory activity

E. ganitrus seeds were reported to exhibit significant Immunostimulatory activity. Alkaloidal fraction of *E.ganitrus* seeds was reported to stimulate immune mediators from peritoneal exudates cells and proliferation of immune cells in vitro and in vivo models.[34]

8. Antihypertensive activity

Aqueous extract if *E.ganitrus* seeds exhibited antihypertensive activity in renal artery occluded hypertensive rats. Treatment of animals

with aqueous extract of *E.ganitrus* for 6 weeks significantly decreased the elevated blood pressure of the animals.[35]

9. Anxiolytic activity

Fruits of *E.sphaericus* were reported to exhibit anxiolytic activity in Swiss albino mice models. Methanolic extract of *E.sphaericus* fruits (200mg/kg b w) exhibited significant anxiolytic effects in mice models this is been stated that anxiolytic activity of the extract may be due to high flavonoids content.[36]

II. CONCLUSION

Rudraksha is a combination of two words, Rudra which means lord Shiva and Aksha meaning eyes. According to ancient scriptures and legends, lord Shiva wanted to kill demon named Tripura to free the Devas from him in order to defeat him, lord Shiva needed a weapon named kalagni. lord Shiva kept his eyes closed for many years to acquire this weapon. When he opened his eyes, drops of tears fell on the surface on the surface of the earth. These drops created Maharudraksha. Twelve types of rudraksha came from the sun-eye of Siva 16 from the moon -eye and 10 from the fire -eye. The first one were blood- colored, the second white and third black

Rudraksha (*Elaeocaropusganitrus*) is a beneficial plants. It is used astrologically as well as medicinally .*E.ganitrus* is evergreen tree which is found in Himalayan region and also in gangetic plain. It is widely distributed from Madagascar in the west through India Southeast Asia, Malaysia, southern China and Japan through Australia to New Zealand, Fiji and Hawaii in the East with its approximately 350 species. The plants reaches the height of 50-200feets the main trunk of tree is rough textured ,cylindrical, and grayish- white in color .the leaves are shining ,green, oblong ,lanceolate lous, or acuminate ,minutely crenate or serrate and almost glabrous in nature and it is used in folk medicine in treatment of stress,depression, lack of concentration ,asthma, liver disease.

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