

*Review article on jyotishmati “celastrus panniculatus wild.”
With brief uses of it's ingredients.*

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ABSTRACT

Herbal medicinal plants plays an important role in the traditional system of medicines such as Ayurveda, Unani, Siddha. Because of minimal side effects and records of safety the demand of herbal medicines is increasing tremendously. *Celastruspanniculatus* is also the important drugs in Ayurved system of medicine, belonging to “MEDHYADI’ VARGA” commonly called as “JYOTISHMATI”. Jyotishmati has a lot of medicinal values such as Mental disorder, Pakshaghat, Ardit, Sandhivat, Grudhrasi, Katishul, Deepan, Kushtha, Udararoga, Gulma, Medhya, Rasyana and mainly as Mastishak-nadibaldyak. JyotishmatiBeej& Oil contains the major compounds as – Celapagine, Celapanigine, Celapanine, Celastrol,Celastrine, Paniculatine,Malkanguniol,Malkangunin e,1-amyirin,β-sitosterol; Acetic, Benzoic, Formic, Linoleic acids etc. Hence, In the present study, an attempt is made to critically review the Jyotishmati from

Ayurvedic aspects and the action of its chemical constituents.

KEYWORDS: Jyotishmati, Ingridients, Celastruspanniculatus, Nirukti

INTRODUCTION

Plants have been one of the important source of medicines since the beginning of human cultivation. Human have used plants for medicinal purpose for centuries; because of its minimal side effects and records of safety, the demand of medicinal plants are increasing tremendously.

Celastruspanniculatus belongs to the Celastraceae Family commonly called Staff tree and is used frequently in Ayurvedic system of medicine. It is also called as Black oil-oleumnigrum, MalkangoniIntellect Tree, Black-Oil Plant, Climbing Staff Tree. Jyotishmati is described as the best among the Medhyavarga.Jyotishmati is cultivated through India including Panjab, Kashmir, Uttar Pradesh etc*CelastrusPaniculatus* **Seeds** and its **oil** are mainly used in ayurvedic

medicines. **Leaves** are also used for de-addiction. Generally, leaf juice is beneficial for treating opium addiction.

Celastruspaniculatus is

a woody liana commonly known as **black oil plant, climbing staff tree,** and **intellect tree**. Jyotishmati is used in paralysis, Backache, Sciatica, Vedanasthapak, and Stimulant.

According to Rajnighantakar the Dravyaguna is not only in among the Astanga but also is kept at first positions, so details study of dravya is of so important.

AIMS AND OBJECTIVES

The study is carried out with an aim to review the recent study carried out on Jyotishmati and uses of its ingredients with ayurvedic review.

MATERIAL AND METHODS

This study is carried out by critical reviews. Searching various medical database like Pubmed, Google scholar, Dhara, Google Search, e-nighantu etc. and also various classic text like samhita, nighantu, dravyaguna text books etc related to Jyotishmati.

SCIENTIFIC CLASSIFICATION

- **Kingdom** – Plantae
- **Sub-kingdom** – Viridiplantae
- **Infra kingdom** – Streptophyta (Land plants)
- **Super Division** – Embryophyta
- **Division** – Tracheophyta (Tracheophytes or vascular plants)
- **Sub Division** – Spermatophyta (Spermatophytes or seed plants)
- **Class** – Magnoliopsida
- **Super Order** – Rosanae
- **Order** – Celastrales

- **Family** – Celastraceae (Bittersweet)
- **Genus** – Celastrus
- **Species** – Celastruspaniculatus.

Nirukti.

- **लता**-It is climber
- **ज्योतिष्मति, ज्योतिष्का**-It is having stem with shining dots.
- **सुवर्णलतिका, अग्रिका**-It has yellow colour.
- **सुक्ष्मफला**-It has small fruit.
- **काकंडी**-Fruits resembling crows eggs.
- **कंगुनिका**-Seeds like millet grains.
- **पन्या**-Seeds are article of trade.
- **पित्तैला**-Seeds has yellow oil.
- **दुर्जरा**-It is difficult to digest.
- **दुर्मदा**-It cause narcosis in excessive dose.
- **वेगा**-It quickly acting.
- **मेध्या**-It promote intellect.
- **लवणा**-It alleviate many disease.
- **ज्योतिष्मती**-It is ushnavirya.

HABITAT

Jyotishmati is cultivated through India including Panjab, Kashmir, Uttar Pradesh etc. Tropical and subtropical Himalayas upto 1500m (Punjab to Assam), Bihar and south India. Jyotishmaticonsists of dried, brownish-orange, ripe seeds, devoid of capsule wall of Celastruspaniculatus Willd. (Fam. Celastraceae); a large climbing shrub, mostly found all over the hilly parts of the country upto an altitude of 1200 m.

HABIT

A vertically growing large netted creeper attaining a large height. The young shoots and branches pendulous. Leaves – glabrous broadly ovate or obovate, acuminate or

acute. Flowers – unisexual, yellowish-green, borne in terminal, pendulous panicles, sweet taste. Fruit – Capsule, globose, 3-valved, 3-celled, 3-6 seeded. Seeds are enclosed in complete red ovoid, brown. Salk – soft fibrillar, white spotted (dots) which are clearly visible in young creeper. It bears shining, reddish yellow bunches of fruits. Flower – throughout the year. Fruiting in rainy season.

PHYTOCHEMISTRY

Root-bark & stem-Pristimerin

Seeds–Celapagine,

Celapanigine, Celapanine, Celastrol, Celastrine, Paniculatine, Malkanguniol, Malkangunine, Paniculatadiol, 1-amyrin, β -sitosterol; Acetic, Benzoic, Formic, Linoleic acids etc

USES OF INGREDIENTS

CELASTROL-

NADPH oxidase (NOX) isoforms are inhibited by celastrol with a dual mode of action.

Celastrol is one of several bioactive compounds extracted from the medicinal plant *Tripterygium wilfordii*. Celastrol is used to treat inflammatory conditions, and shows benefits in models of neurodegenerative disease, cancer and arthritis, although its mechanism of action is incompletely understood.

Celastrol was tested on human NADPH oxidases (NOXs) using a panel of experiments: production of reactive oxygen species and oxygen consumption by NOX enzymes, xanthine oxidase activity, cell toxicity, phagocyte oxidase subunit translocation, and binding to cytosolic subunits of NOX enzymes.

These results demonstrate that celastrol is a potent inhibitor of NOX enzymes in

general with increased potency against NOX1 and NOX2.

Br J Pharmacol. 2011 Sep;164(2b):507-20. doi: 10.1111/j.1476-5381.2011.01439.x.

CELAPAGINE

It is being studied for potential to reduce benign prostatic hyperplasia (BPH) & Blood Cholesterol Level.

Malkanguniol

1. **Improves memory**–Malkangani oil is best suited to increase memory power. $\frac{1}{2}$ teaspoon of malkangani oil in warm milk increases memory power and activates the body parts. Those kids who are naturally towards studies and day-to-day chores; malkangani oil is best for them. It sharpens your will power and is a good memory enhancer. Not only this, Malkangani oil is also capable to cure nervous disorder called '**Paralysis**'.
2. **Good during winters**– You must have noticed, as winter season arrives most of feel lethargic and lazy. Not only this, we feel extreme cold even the weather is mid-chilling. The reason is, the body cells are not properly active and there is lack of oxygen in body. Due to this, our immune system gets weakened and automatically we feel cold. Not only this, seasonal flu's and infections can easily attack us. The best and the natural way to get rid of this is '*Malkangani*'. Just take a teaspoon of Malkangani oil in daily basis. After few days, you will feel energetic and lively.
3. **Cures dermal problems and dandruff**– Eczema, psoriasis, leucoderma etc are some of the dermal problems that act as a black

spot in our lives. The sores and imprints of these are so tough and deep under the skin that can't be treated easily. Application and intake of Malkangani oil treats all the sores and their marks. It detoxified your skin clearing all the unwanted scars and marks. Not only this, it rejuvenates your skin making it healthy and glowing. During winters, dandruff becomes a great problem. Dry scalp and lack of moisture invites it. Weekly application of Malkangani oil in scalp treats dandruff in only few months.

4. **Treats arthritis** – Severe pain in bone joints are the starting point of disorder like arthritis, sciatica etc. These are very harsh kind of disorder that makes you mentally depressed. Just apply few drops of Malkangani oil on the pain area; rub softly. Repeat this process on daily basis. It is very effective and the regular usage will give you a permanent treatment in few months. If the pain is low then just the application of oil can treat it well.
5. **Soothes digestion** – Indigestion, heart-burning, intestinal heat etc are the common problems. But these minor disorders can make you ill and sick that can be consequently hazardous for health. Intake of Malkangani oil will keep your digestive system strong. Not only this, it stimulates the secretion of gastric juices making your digestion easy. The seeds and oil gives nothing but excellent results.
6. **Treats asthma and bronchitis** – Due to increasing stress and pollution, we human beings are getting prone

of several respiratory disorders like mucus cough, sinusitis, asthma, bronchitis, T.B and many more. Drugs and surgeries are unable to cure it permanently. Have a teaspoon of Malkangani oil daily and before going to bed apply few drops on the chest region. This will keep your body warm avoiding all kind of respiratory flu's. Not only this, its regular usage will uproot the ailment with a great ease.

1-AMYRIN, B-SITOSTEROL

The **amyrins** are three closely related natural chemical compounds of the triterpene class. They are designated α -amyrin (ursane skeleton), β -amyrin (oleanane skeleton) and δ -amyrin. Each is a pentacyclic triterpenol with the chemical formula $C_{30}H_{50}O$. They are widely distributed in nature and have been isolated from a variety of plant sources such as epicuticular wax. In plant biosynthesis, α -amyrin is the precursor of ursolic acid and β -amyrin is the precursor of oleanolic acid.

β -Sitosterol (beta-sitosterol) is one of several phytosterols (plant sterols) with chemical structures similar to that of cholesterol. Sitosterols are white, waxy powders with a characteristic odour. They are hydrophobic and soluble in alcohols.

β -sitosterol is being studied for its potential to reduce benign prostatic hyperplasia (BPH) and blood cholesterol levels.

It is an inhibitor of histidine decarboxylase, which is associated with inhibition of the biosynthesis of histamine responsible, among other

things, for the formation of inflammatory response.

It is used incosmetic for dry and sencetive skin and for the treatment of Schistosomiasis.

Cucurbitin cause degenerative changes in the reproductive organs of parasitic flatworms called flukes.

ACETIC ACID

Solvent:-Acetic acid's chemical structure reveals that it has an oxygen atom bonded to a hydrogen atom. This chemical bond gives the compound high polarity -- and because of this -- acetic acid is used to create a variety of different solvents.

FOOD: A VARIETY OF PLANT AND ANIMAL TISSUES CONTAIN NATURAL ACETIC ACID AND ITS WEAK ACIDIC PROPERTIES MAKE IT SAFE TO DIGEST AT CONCENTRATIONS OF 5 PERCENT OR LESS. BECAUSE OF ITS ACIDITY, VINEGAR IS USED IN COOKING TO BALANCE OUT THE PH OF RECIPES AND MEALS -- AND TO PROVIDE A SOUR TASTE TO DISHES.

Cosmetics:Shampoos, conditioners, hair dyes, and other hair products all contain acetic acid as their neutralizer; which acts to control the pH of the solution and balance it out.

INDUSTRY:IN INDUSTRY, ACETIC ACID IS APPLIED TO OTHER CHEMICAL COMPOUNDS USED FOR THE PRODUCTION OF VARNISHES, TOP COATS, PAINTS, AND ACRYLIC LACQUERS. ACETIC ACID IS FIRST USED TO CREATE OTHER COMPOUNDS THAT WILL BE USED FOR THE PRODUCTION OF THESE CHEMICALS; IT IS NOT A PRIMARY INGREDIENT.

FORMIC ACIDS

A major use of formic acid is as a preservative and antibacterial agent in livestock feed. Formic acid is also used in place of mineral acids for various cleaning products, such as limescale remover and toilet bowl cleaner. Some formate esters are artificial flavourings, or perfumes. Formic acid is being investigated for use in fuel cells. Formic acid is also significantly used in the production of leather, including tanning and in dyeing and finishing textiles because of its acidic nature.

BENZOIC ACID

Benzoic acid and its salts are used as a food preservatives, represented by the E-numbers E210, E211, E212, and E213. Benzoic acid inhibits the growth of mold, yeast and some bacteria.

Benzoic acid was used as an expectorant, analgesic, and antiseptic in the early 20th century.

In teaching laboratories, benzoic acid is a common standard for calibrating a bomb calorimeter.

LINOLEIC ACID

Linoleic acid (LA) is a polyunsaturated omega-6 fatty acid.

The word "linoleic" derived from the Greek word *linon* (flax). *Oleic* means "of, relating to, or derived from oil of olive" or "of or relating to oleic acid" because saturating the omega-6 double bond produces oleic acid.

Industrial uses: Linoleic acid is used in making quick-drying oils, which are useful in oil paints and varnishes.

Use in research: Linoleic acid lipid radicals can be used to show the antioxidant effect of natural phenols.

The majority of the effects caused by *Celastrus Paniculatus* appear to be related to the neurochemicals dopamine, serotonin, and norepinephrine.

The plant delays the reuptake of these natural substances, meaning amounts of the chemicals stay high in the brain.

Dopamine is the neurotransmitter which generates feelings of intense mental focus, drive, and passion. It is most closely tied with the perception of mental energy, as well as physical pleasure.

5-HTP is the chemical precursor to serotonin, the chemical which generates feelings of contentedness and peaceful satisfaction.

Norepinephrine (noradrenaline) is a part of the body's "fight or flight" mechanism, which elevates metabolism in nerve cells in order to make quick decision-making possible in times of stress.

CelastrusPaniculatus has also been observed to **boost the amount of acetylcholinesterase enzyme** in rat test subjects. This enzyme is closely tied to memory functions in the brain.

AYURVEDIC REVIEW

{B.P.=Bhavprakashnighantu, D.N.= dhanvantareenighantu, R.N.= Raajnighantu, K.N.= Kaiyadevnighantu, Sau.N.= Saushrutnighantu, Sh.N.= Shodhalnighantu, P.N.= Priyanighantu}.

PROPERTIES OF JYOTISHMATI

- 1) VARGA – Medhya,Shirovirechana (ch),Arkadi,Adhobhaghar, Shirovirechana (su), Arkadi (va)
- 2) RASA – Katu,Tikta.
- 3) GUNA - Tikshna
- 4) VIRYA - Ushna
- 5) VIPAKA - Katu

6) PRABHAVA – special medicinal effect – Medhya – improves intelligence.

7) DOSHAGNATA – Vatahara,Vatavyadhi,Udararoga, Gulma, Medhya, Rasayana.

8) ACTIONS - Vatahara, Dipana, Medhya, Rasayana, Shirovirechana.

CONCLUSION

There is increasing demand for the herbal medicinal plants all over the world because the fact that the allopathic drugs are having more side effects. And Jyotishmati is one of the herbal drug having various actions to cure different types of diseases.

There are many ingredients like Celapagine,Celapanigine,Celapanine,Celastrol,Celastrine,Paniculatine,Malkanguniol,Malkangunine,1-amyryn, β -sitosterol;Acetic,Benzoic,Formic,Linoleic acids etc. and these are having various important uses that may be useful in curing many diseases like Mental disorder, Pakshaghat, Ardit, Sandhivat, Grudhrasi,

Katishul,Deepan,Kushtha,Udararoga,Gulma,Medhya,Rasyana and mainly as Mastishak-nadibaldayak.Thesecontaints are responsible for antioxidant activity, antistress activity, memory enhancing activity etc.

After studing different classics and text book along with nighantu it is clear that the Jyotishmati is kept in like Medhya,Shirovirechana,Arkadi,Adhobhaghar.vargas

and there is also having difference in rasa, guna, virya, vipaka, &karama of Jyotishmati as steted by different acharyas. □ So the present study gives a directions for the different and various

uses of contents of Jyotishmati, the efficacy to cure different types of diseases along with its ayurvedic review stating the importance of Jyotishmati in Ayurveda.

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