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Pharmaceutico-therapeutic Activity of *Trailokya Vijaya Vati* -A Conceptual Review

Author: Kotresh B M[1]

Co Authors: Ashok Kumar B N[2], Radhika Ranjana Geetesh P[3], Sushmitha V S[4] and Ravindra Angadi[5]

[1-5]Dept of Rasashastra & Bhaishajya Kalpana, Sri Dharmasthala Manjunatheswara College of Ayurveda, Kuthpady, Udupi, KA, India

ABSTRACT

Ayurveda emphasizes the interconnectedness of the body, mind, and spirit, offering holistic solutions for overall well-being. It serves as a bridge between ancient wisdom and modern healthcare practices, preserving and promoting this invaluable heritage for future generations. Ayurvedic formulations primarily consist of herbs, minerals, poisons and natural substances, making them safer and more sustainable choices for individuals seeking healthcare solutions. In an era where the prevalence of chronic diseases is increasing, Ayurvedic formulations provide a comprehensive approach that addresses the root cause of ailments rather than just managing symptoms. Trailokya Vijaya Vati is an Ayurvedic formulation revered for its therapeutic properties and historical significance in traditional Indian medicine. Its name, "Trailokya," signifies its efficacy in addressing ailments of the mind, body, and spirit, while "Vijaya Vati" denotes its victorious nature in conquering diseases. This formulation embodies a harmonious blend of potent herbs meticulously selected from Ayurvedic texts to promote holistic wellness and restore balance within the body. The therapeutic importance of Trailokya vijaya vati, ingredients along with collection, sodhana (purification), general method of preparation, dosage, anupana, mode of action, special instructions etc. are dealt in detail.

Key Words *Trailokya vijaya vati*, *Vijaya*, *Vamshalochana*, *Cannabinoids*, *Endocannabinoid system*

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INTRODUCTION

Aushadha refers to a medication or substance that can be used to treat diseases and prevent individuals from getting diseases. It can be used as a single medication or in combination. *Aushadha* yoga is used to restore health or it gives fruitful results as like that of nectar if utilized properly, if used improperly, meanwhile, it turns into poisonous[1]. Effectively managing a disease requires correct identification, dosage and time of administration of *Aushadha*. Comprehending the features and action mechanism of an *aushadha* is necessary for choosing the appropriate one to prevent ill effects of the drug. It is very much necessary to know that the *aushadha* are of *prakruthi*, age, gender, location & season specific. Some of the Ayurvedic classics and texts in medieval period

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have classified all the poisons into two categories as *Mahavisha* and *Upavisha* based on their toxicity and potency[2]. *Upavisha* (semi-poisonous drugs) are the group of drugs which were less toxic in nature but produce certain toxic symptoms on consumption or administration. These compounds are hazardous, but following appropriate purification methods, they are used with caution in Ayurvedic formulations for possible medicinal benefits. Featuring *Vijaya* (cannabis) one among *Upavisha* as its main constituent, *Trilokya vijaya vati* is one of the most effective traditional remedies in this category. Here is an effort to compile all the scattered materials from different texts and discussed with its therapeutic importance.

AIM

To examine and gather all of the information that is currently accessible about *Trailokya Vijaya vati*, including its composition, method of preparation, dosage, indications, warnings, specific guidelines, and the contributions of different literature pertaining to this specific formulation.

MATERIALS & METHODS

The references for *Trailokya Vijaya vati* were gathered from a variety of books, published works in several journals, and databases such as Pubmed Data base of Indian medicinal plants and Google Scholar. Various published works that dealt with *Vijaya* and *Vamshalochana* were analysed and reviewed. Information that was relevant to the search were retained, while data that did not meet the search criteria was removed.

RESULTS

VIJAYA:

Vijaya is referred to as 'Cannabis'. Texts pertaining to *Ayurveda* in general and medicinal plants in particular methodically documented the part used, pharmacological properties, *Shodana* (processing) procedures, mode of actions, indications of *Vijaya*. The Ayurvedic writings from the Middle Ages mention *Vijaya's* therapeutic properties[3].

Ayurveda advocates the judicious use of *Vijaya* after *Shodana*. It was observed that the processed drug is used as a single or in combination of other drugs. *Vijaya* has been described under *Upavisha Varga* (a group of sub poisonous plants) by certain text related to *Rasa Shastra*, it's categorization under *Upavisha Varga* may be due to its reported action on CNS in overuse. However, Various *Nigantu's* of *Ayurveda* details *Vijaya* under different plant group enlisted in **Table 1**.

Table 1 Vijaya as mentioned in various Nighantu's

Nighantu	***Varga***
Dhanvantari Nighantu[4]	*Guduchyadi varga*
Shodala Nighantu[5]	*Lakshmanadi varga*
Bhavaprakasha Nighantu[6]	*Haritakyadi varga*
Madanaphala Nighantu[7]	*Haritakyadi varga*
Saligrama Nighantu[8]	*Astavarga*
Priya Nighantu[9]	*Shatapushpadi varga*

Synonyms of *Vijaya*[10-11]:

Matulani, Jaya, Bhang, Madini, Vijaya, Chapala, Virapatra, Siddhi, Indraashana, Ajeya, Ananda

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Sanjna, Bhangi, Bhang, Matika, Matuli, Tandrakarini, Bahuvadini, Bhangi, Bhang.

Vernacular names of vijaya:

Sanskrit	: Bhanga, Madini
Hindi	: Bhaang, Bhanga
English	: Indian Hemp
Kannada	: Bhangigida, Ganjagida
Gujarathi	: Bhang
Marathi	: Bhang, Ganja
Assami	: Bhan, Bhang
Bengali	: Siddi, Bhang
Malyalam	: Kanchava
Tamil	: Ganja
Telugu	: Ganjayi

Taxonomical description[12]:

Kingdom: Plantae

Sub kingdom: Tracheobionta (Vascular plant)

Super division: Spermatophyta (Seed plant)

Division: Magnoliophyta (Flowering plant)

Class : Magnoliopsida (Dicotyledonous plants)

Subclass: Hamamelididae

Order: Rosales

Family: Cannabaceae (Hemp family)

Genus: Cannabis

Species: *Cannabis Sativa L.*

Habitat & Distribution: Found wild on the western Himalaya & Kashmir cultivated all over the India[13].

Botanical Description: *Vijaya* is a dioecious herb with numerous leaves resembling *Trishul* it has a very specific strong order hence called *Ugra Gandhi*[14]. Cannabis is an annual dioecious flowering herb staminate (male) plants are usually taller but less robust than pistillate (female) plants. Stems are green, erect, hollow and longitudinally grooved. They can grow up to 1-6m in height. The leaf arrangement on a plant varies from decussate at the lower branches to alternate at the terminal branches. Leaf stalks (petiole) are 2-7cm long with a narrow groove along the upper side. The leaf is palmate & consists of 3-9 linear-lanceolate leaflet blades of 3.15 ×0.2×1.7cm. The lower (abaxial) surface is pale green with scattered white to yellowish brown, resinous glands.

***Shodhana* of Vijaya leaves:**

Shodhana is one of the unique concepts of *Ayurveda* where the possible toxic effects are passed through specific recommended process before clinical administration to reduce the toxic effect and make them therapeutically effective in prescribed *Dosha*. In various *Rasa Shastra* text, there are different methods of *Shodhana* are explained.

Method 1:

The leaves of *Vijaya* (cannabis) are tied in muslin cloth. It is washed again & again under running water until the greenish colour stops oozing out of cloth. After this, the leaves dried under shade, made into powder form and preserved in airtight container which will be used for the therapeutic purpose[15].

Method 2:

The dry leaves are taken & washed in water & pressed with cotton cloth. Then it is subjected for drying under direct sunlight & later on fried with *Go gritha* (Cows clarified butter) these roasted leaves are to be used for therapeutic purpose[16].

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Method 3:

The dried *Vijaya* leaves are to be subjected for *nimajjana* (soaking) in water for approximately 2-3 hours and squeeze it. After getting it dried under sunlight, it is being fried in *Goghrita*[17].

Method 4:

The *Vijaya* leaves are to be subjected for *Svedana* in decoction of *Babbula Tvak* (Bark of Acacia arabica Willd.:Mimosaceae) for 25-30min with moderate heat & then subjected to drying under direct sunlight. Further they are triturated with *Godugdha*, dried and used for therapeutic purpose[17].

Properties of *Vijaya*[17]:

- *Rasa* : *Tikta Rasa*
- *Guna* : *Laghu Tiksna Gunas*
- *Virya* : *Usna Virya*
- *Vipaka* : *Katu Vipāka*
- *Doshaghnata* : *Pacifies Kapha* and *Vata Dosha, increases Pitta Dosha*
- *Karma* : *Dipana, Pacana, Ruchya, Madakari and Vyavayi action.* It has also been attributed with *Grahi, Medhya* and *Rasayana action*
- Therapeutic action of *Vijaya*: *Rasataranagini* have attributed more than 29 pharmacological properties/indications to *Vijaya* like: *Nidrapradayini Swapna karaka* (Induce sleep), *Santana karaka* (improves reproductive capacity), *Amasaya Balaprada* (Provides strengths to gastrointestinal tract), *Mutrala* (Diuretic), *Pralapanasaka* (Relieves delirium).
- Indicated in disease conditions like *Prameha* (Urinary disorders), *Dhanusthambha* (Titanic condition), *Antra Sula* (Gastric pain), *Vrkka Sula* (Renal Colic), *Sosha* (Emaciation), Su*la* (Colic). *Ajirna* (Dyspepsia), *Unmada* (Insanity), *Rakta sanyukta mutrata* (Hematuria), *Arsa* (Piles), *Jvara* (Fever), *Vrana* (Wound), *Nadi daurbalya* (Nervine debility), *Rajahsula* (Dysmenorrhea), *Yakṣma* (Tuberculosis), *Kasa* (Cough), *Amasayasula* (Intestinal pain), *Tamaka svasa* (Asthma), *Garbha Grha, Rakta Pradara* (Menorrhagia), *Ardhavabhedaka* (Migraine)[17].

Chemical composition:

It is a complex plant with about 426 chemical entities, of which more than 60 are cannabinoid compounds[18]. The four major compounds are d-9-THC, CBD, d-8-THC and cannabinol, which have been most researched[19].

***VAMSHALOCHANA*:**

'*Vamsalochana'* is the siliceous concretion found in the hollow internodes of Bambusa arundinacea (Retz.) Willd. It is also known as 'Bamboo Manna' bamboo-manna or bamboo silica (because it is rich in silica). It is mainly composed of silicic acid with traces of iron, calcium, alum, alkalis, potash, alumina, iron peroxide and about 1% of organic matter. It is highly esteemed in the Indian medical tradition for its diverse medicinal qualities, such as aphrodisiac, demulcent, emmenagogic, expectorant, febrifugal and pectoral. It is largely used as a cooling tonic. It is used as single Ayurvedic drug and also in compounded formulations[20].

The hardness and stiffness of bamboo is due to the presence of intracellular silica in the fibre

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structure. It is a highly demanded substance, versatile described to be cold in nature[21]. Tabasheer owes its alternative name 'sugar of bamboo' due to the sweet taste of an organic residue[22].

Various *Nigantu's* of *Ayurveda* details *Vamshalochana* under different plant group by keeping the drug under various varga as enlisted in **Table 2.**

Table 2 *Vamshalochana* as mentioned in various Nighantu's

Nighantu	***Varga***
Dhanvantari Nighantu[23]	*Karaveeradi varga*
Shodala Nighantu[24]	*Karaveeradi varga*
Bhavaprakasha Nighantu[25]	*Haritakyadi varga*
Kaiyadeva Nighantu[26]	*Oshadhi varga*
Madanaphala Nighantu[27]	*Abhayadi varga*
Saligrama Nighantu[8]	*Astavarga*
Rajavallabha Nighantu[28]	*Maadhyanika pariccheda*
Sarasvati Nighantu[29]	*Mahavriksha Varga*

Synonyms of *Vamshalochana*[30]:

Vamsharocana, Vamshi, Tugakshiri, Tuga, Shubha, Tvakkshiri, Vamshaja, Shubhra, Vamshakshiri and Vainavi.

Vernacular names of *Vamshalochana*:

Sanskrit: Vamsah,Venuh, Tvakkshira

Hindi: Bans, Banslochan, Kanta bans, Banskapur

English: Spiny bamboo, Thorny bamboo, Bamboo manna

Kannada: Bedru

Gujarathi: Wans

Assam: Bnah, Kata, Koto

Uttar Pradesh: Kanwas

Arabic: Qasab, Tabasheer

Tamil: Mungil

Telgu: Bonga,Veduru

Taxonomical description[31]:

Kingdom: Plantae

Sub kingdom: Tracheobionta (Vascular plant)

Super division: Spermatophyta - Seed plants

Division: Magnoliophyta (Flowering plant)

Class : Liliopsida

Subclass: Commilinidae

Order: Cyperales

Family: Poaceae

Genus: Bambusa

Species: *Bambusa arundinacea (Retz.) Willd*

Habitat and Distribution: The *Bambusa arundinacea (Retz.) Willd*. is said to originate from tropical Asia but is now grown in tropical regions globally, particularly prevalent in Myanmar and Sri Lanka. Its presence spans across India, notably thriving in the mountainous forests of western and southern regions, flourishing in altitudes reaching up to 2100 meters[32]. It is cultivated in many places in Bengal, North west India and on the hills of Andhra Pradesh, Tamil Nadu and Karnataka[23].

Botanical Description

It is a tall woody bamboo with numerous and thorny stems, with height upto 30-40 meters, curving at the top[33]. Rhizomes of Bamboosa arundinaceae is knotty, culms dense, short, stout, reaching 24-30 m in height and 15-17 cm in diameter, green, hallow, purplish green when young, turning golden yellow with prominent nodes and long internodes up to 45 cm, lower ones rooting often sub angular, flexuous, almost naked shoots armed at nodes with 2-3 curved spines[34].

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Collection:

The siliceous concretion is present in the culms of female bamboo. It occurs in fragments of masses, about an inch thick and are formed from the residue of the watery liquid occasionally found in the hollow internodes. The presence is generally detected by a rattling noise on shaking the culms. Physically, it may be chalky, translucent or transparent, tasteless, usually of the colour of pumice[23].

Description about part:

Vamshalochana consists of irregularly shaped opaque/chalky, translucent or transparent fragments, it is tasteless and of white or bluish opalescent colour usually of colour of pumice, slightly sticky to the tongue, the larger pieces are about 2.5 cm thick in diameter, concavo-convex, and have evidently derived this from the internodes of bamboo in which the deposit has collected[35].

- *Rasa* : *Madhura rasa*[36], *Kashaya anurasa*[37]
- *Guna* : *Ruksha, Laghu Guna*[37]
- *Virya* : *Shita Virya*[26]
- *Vipaka* : *Madhura Vipaka*[37]
- *Doshaghnata* : *Pitta-Rakta hara, Vata-Pitta hara, Kapha vardhaka, Vata pitta shamaka*[37]
- *Karma*: *Jivaniya, Preenan, Trishnanigrahan, Balya, Dahaprashaman, Vajikarana, Trishna, Kasa-Swasa, Pandu-Kamalahar, Shosh-Kshayahar, Jwarahar*[38], *Vrushya, Bruhmana, Vranajith, Kushthjit, Chedana, Vasti shodhana,*
- Therapeutic uses: An effective aphrodisiac nourishes the body, enhancing its mass, purifies the urinary system, speeds up wound healing, proves beneficial in conditions of emaciation or undernutrition, and boosts bodily strength[39].

Chemical composition:

Vamshalochana Component Content Percentage (%) Silica 90.56% Potash 1.10% Peroxide of Iron 0.90% Alumina 0.40% Moisture 4.87%. Indian *Tabasheer* is primarily composed of 97% silicic acid, 2.9% water, with traces of potash and lime[40]. The elemental composition of the Tabasheer sample was analyzed using X-ray fluorescence, revealing the presence of SiO_2, Al_2O_3, Fe_2O_3, CaO, MgO, TiO_2, K_2O, P_2O_5 and Si/Al[24].

Substitutes & Adulterants: It appears to be limited to the bamboo product. *Dhanvantari Nighantu* refers to it as "*Vamsakshiri smrta vamshya yavaja yavasambhava*"[40]. Along with *Vamshakshiri*, the compiler has mentioned several varieties of *Kshiri*. Many researchers considered *Vamsharocana* as concretions from the bamboo and *Tavakshiri* as the starch derived from the rhizomes of Curcuma angustifolia Roxb., also used as a substitute for authentic arrowroot of Maranta arundinacea Linn[41-42].

Tugakshiri is *Hima* (cold in potency), *Swadu* (sweet in taste), *Balya* (tonic), *Vṛshya* (aphrodisiac) and *Bṛmhana* were the Ayurvedic properties of *Vamshalochana*. *Raktapitta*, anorexia, *asthma*, cough, leprosy, fever, anaemia, jaundice, hyper-thirst, burning sensation, wound, dysuria, emaciation[43-45].

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Tvakshiri or *Tugakshiri* is white in colour and used as substitute of *Vamshalochana*. It is prepared from the tubers of Curcuma angustifolia.Roxb. Synthetic product is white, very shining, sticky to the tongue[46].

Method of preparation of *Trailokya vijaya vati*: The reference of ratio & method of preparation is found in *Rasa Tarangini* & *Ayurveda Sara Sangraha*. Properly *shodhita Vijaya* taken and prepared *Ghana satwa* of it as per *Ghana Satwa Kalpana*[47]. *Vamshalochana* is collected and made into fine powder (sieve no 85). Both ingredients of equal quantity are made into paste by adding water of sufficient quantity in *Khalwa yantra*. Triturated until the proper consistency of making pills. Pills prepared of uniform shape and size of 1 *ratti* dose[48]. Then it is dried under shade & stored in air tight container. Later it is subjected to the evaluation of Parameters for Standardization of Vati to find out the perfectness & quality of the product.,

***Matra*:** 1 *Ratti* Pill BD (Morning & Evening)[49]

Anupana : *Madhu, go gritha, go dugdha, Takra* with *jeeraka*[49].

Patya: Cow Milk & Ghee, Buttermilk with *Jeera* & freshly prepared and easily digestible meals. Regular body workout as per body strength.

Apatya: Avoid alcohol, eating excessive spicy, cold, dry, reheated, fried & heavy to digest. Exposure to dry & hot environment, Late night dinner & improper sleep.

***Guna* & *Upayoga*:**

- Due to its *Grahi guna* it acts as *Atisara hara* & even *atisara* of prolong cause. It alleviates the severity of Symptoms of *Pralapa, Unmada*. *Reduce the Vrikka shula, Raja kashtajanya shula* & *Kasa vegas* in *Rajayakshma*[48].
- It specially & directly acts on *Vatavahini Nadi* due to its *Ashukari guna*. Therfore, it provides quick results in the ailments related to various types of *Shula*. If it is given with milk then its acts as *Vajikara* because of its *prabhava* on *Jananendriya* & *Shukravahini Sira*. Consuming it in small dose causes intoxication & also relives fatigue[49].

Mode of action:

- Cannabis sativa plant has a long history related to therapeutic and pharmacological use by humans. Despite having more than 400 chemical compounds, its two main constituents are cannabidiol (CBD) and tetrahydrocannabinol (THC) responsible for the main pharmacological actions[50].
- The advancement of research on C. sativa for medical purposes has resulted in the finding of the Endogenous Cannabinoid System, sometimes referred to as the Endocannabinoid System (ECS). The endocannabinoid system is a lipid signalling system that plays a regulatory function in the metabolism and physiology of many systems by producing protein and glycogen through anabolic actions. This system consists of exocannabinoids (D9-tetrahydrocannabinol, D-8-tetrahydrocannabinol, cannabidiol, and cannabinol) obtained from the plant and endocannabinoids (anandamide and 2-AG) generated from arachidonic acid (AA). Both

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systems function as CB1 and CB2 receptor ligands[51].

- The "endocannabinoid system" in the human body has a role in homeostasis which is important due to its neuromodulator function. This system mediates its effect through at least two G-protein coupled cannabinoid receptors – CB_1 (regulates neurotransmission) and CB_2 (regulates immune and inflammatory pathways). CB_1 is activated by two known metabolites, anandamide (from Sanskrit word meaning "bliss") and 2-arachidonoylglycerol (2-AG)[52-53].
- The THC: CBD ratio (and their doses) in Cannabis is what is crucial to understanding the harm associated with its use. THC can elicit anxiety, induce psychosis, and produce cognitive impairment while CBD can mitigate this. Products containing Cannabis can have varying doses that give varying ratios of the two compounds and therefore differ in their therapeutic and addictive potential[54].
- The major functions of the ECS are associated with immune and neurological system modulation, which is involved in a variety of physiological processes, including learning, memory, sleep, appetite, and hormone release; in other words, the ECS is involved in everything from lipid metabolism and appetite to neuroprotection and neurogenesis[55].

The study was carried out to evaluate the analgesic effect of *Trailokya Vijaya Vati* in post-operative pain in patients undergoing *Kshara karma* using the pain scale, sleep parameters, bleeding, postoperative recovery, safety and need for conventional analgesics. The study revealed that all patients tolerated the drug well. None of the patients experienced any adverse side effects during the study, indicating excellent safety & the rate of pain relief was maximal in the treatment group compared to the control group[56].

Special Instructions: The major problem with Cannabis lies in the several risks associated with its indiscriminate use, some of which include increased risk of stroke, affection of learning and memory, and mental illnesses including psychosis. Groups that are associated with the highest risks are teenagers, pregnant women, and people who may already be at risk of mental illness[57]. Use of Cannabis during Pregnancy may increase adverse outcomes for women and their neonates. Cannabis products may also increase your risk of certain disorders, such as depression and schizophrenia. It's mostly known for causing feelings of Euphoria, but Cannabis can also cause panic, fear or depression in some people.

The production and distribution of these drugs is under tight control and oversight of federal and state authorities based on the origin of the raw material (imported vs. locally grown), transport of the drug between states (needs the nod of individual state authorities), and storage of the drug before dispensation (controlled and overseen by local state FDA and police authorities)[58].

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DISCUSSION

Total 02 references of *Trailokya Vijaya Vati* were compiled and found containing the same ingredients with same proportion. *Ayurveda sara sansraha* & *Rasa tarangini* both i.e. *Shuddha Vijaya* & *Vamshalochana*. *Vijaya* is an integral ingredient in *Trailokya Vijaya Vati*. *Vamshalochana* is the supportive ingredient which is having *Madhura rasa, Madhura vipaka* & *Shita virya*, Whereas, *Vijaya* is having *Tikta rasa, Ushna virya, Katu Vipaka*. By considering *Guna* & *Karma* of *Vamshalochana*, it often possesses qualities that counteract or balance out the effects of *Vijaya*, helping to mitigate potential side effects and enhance therapeutic efficacy. In both the references, ingredients are levigated with water as *Bhavana Dravya* for a specific time and converted into 1 *Ratti* sized *Vati*. The authors have quoted a 125mg dose of *Trailokya Vijaya Vati* which can be considered as a therapeutic dose for human being. *Madhu, go gritha* are mostly cited as a *Anupana* of *Trailokya Vijaya Vati*. It is mainly indicated in Atisara, *Unmada, Raja kashtajanya shula, Kasa, Rajayakshma* & various types of *Shula*. Because of its *Prabhava* it acts as *Vajikara* when it is administered with Milk. The human body's endocannabinoid system plays a crucial role in maintaining homeostasis, primarily through its neuromodulatory function. This system exerts its influence via a minimum of two G-protein coupled receptors: CB1, which regulates neurotransmission, and CB2, which oversees immune and inflammatory pathways.

CONCLUSION

Reviewing of *Rasashastra* classics reveal that *Trailokya Vijaya vati* is recommended in *Atisara, Unmada, Raja kashtajanya shula, Kasa, Rajayakshma* & various types of *Shula*. As observed the indications in classical texts, some indications based on its *Bhautika guna*, some are *Rasa* based, some are *Karma* based & some are purely *Prabhava*. Total 02 references of *Trailokya Vijaya vati* have been found with a same proportion of ingredients. *Trailokya Vijaya vati* Effective in Treating Chronic pain in various diseases condition, since it is Schedule E-1 drug. To be taken strictly under medical supervision. It seems to have a generally safe profile but come with certain risks, including the potential for euphoria, unsuitability during pregnancy, dizziness, as well as associations with depression and schizophrenia. Nonetheless, there is a necessity for further research into their safety.

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