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RESEARCH ARTICLE

BHANG: WHETHER A SUBSTANCE OF ABUSE OR A MIRACULOUS DRUG

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Abstract

Bhang (Cannabis sativa L., Family: Cannabaceae) holds a distinguished place in the classical foundations of Ayurveda, with references spanning from the Vedas and Samhitas to later compendia such as the Nighantus,Anandakanda,Rasa Tarangini and Yoga Ratnakara.Tradition ally revered for its multifaceted therapeutic potential,Bhang is describe d as a tridoshic-balancing herb with rasayana properties, capable of addressing a wide range of conditions including neurological,dermatolo gical,gastrointestinal, respiratory and reproductive disorders. Ayurvedic literature offers detailed insights into its origin,morphology, cultivation, purification techniques,pharmacodynamics and formulation strategies Despite its extensive documentation,a comprehensive and systematized compilation of Bhang's Ayurvedic applications remains lacking. This article seeks to consolidate scattered references into a unified framework, highlighting its clinical relevance and the diversity of its formulations. Special attention is givento the enhancement techniques described in Anandakanda, which present promising avenues for phytochemical research and integrative drug development.As global interest in plant-based therapeutics intensifies, Bhang emerges as a valuable candidate for evidence-based exploration. Bridging traditional Ayurvedic wisdom with modern pharmacological inquiry can unlock its full potential in personalized medicine, provided ethical cultivation, standardization and interdisciplinary collaboration are prioritized. This study aims to honour the legacy of Bhang while advancing its role in contemporary healthcare and research.

Introduction:-

The classical foundations of Ayurveda, rooted in the Vedas (6000 BC), the Samhitas (1500 BC–500 AD) and later the Nighantus and compendia (800–1900 AD), provide a systematic account of natural medicinal substances. Among these, Bhang (Cannabis sativa L., Family: Cannabaceae) occupies a distinctive place, having been

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referenced since antiquity. Traditionally described as an annual, erect, dioecious herb reaching 1–4 meters in height, Bhang grows naturally in the sub-Himalayan regions and is widely distributed across wastelands from Punjab to Bengal, extending into South India.[1]In the Ayurvedic view, Bhanga—a synonym for Vijaya—is classified as a poisonous plant with medicinal potential. References to its use appear in the Rigveda, where it is associated with Soma, and later in medieval texts such as Gadnigrahand the Dhanvantri Nighantu, which describe its therapeutic applications under Medavishesh. Initially cultivated for fiber and seed production (known as Shana), Bhanga gradually gained recognition for its narcotic properties and was popularly referred to as Matulani.[2]Over centuries, diverse preparations of cannabis emerged in India and beyond. These include Bhang (a decoction of dried leaves and stems consumed during festivals such as Holi and Shivratri)[3], Gaanja (dried flowering tops smoked in pipes or cigarettes), Hashish and Charas (resinous exudates valued for their psychoactive and analgesic properties)[4], Majun (a sweetmeat prepared with plant extract), and Sinsemilla (seedless female plants)[5]. More concentrated forms such as hash oil, containing up to 25–60% THC, further highlight the plant's pharmacological potency.

Despite its long-standing cultural and medicinal significance, cannabis was classified under Schedule I of the Controlled Substances Act (1970) in the United States, deemed to have no medicinal value and a high potential for abuse.[6] This designation contrasts sharply with its historical role in Ayurveda and its re-emergence in modern medicine, exemplified by the approval of the first cannabis-based medication in Germany in 2011.[7] Given the wide range of therapeutic applications documented across traditions and contemporary pharmacology, there is renewed interest in re-evaluating cannabis formulations within regulated clinical practice.Detailed accounts of Bhang are preserved in authoritative texts such as the Anandakanda, Rasa Tarangini, Yoga Ratnakara and Dhanvantari Nighantu. In keeping with the traditional Ayurvedic approach, this discussion begins with an examination of its origin and classical references. Building on these foundations, the present review seeks to trace the historical, cultural and pharmacological dimensions of Bhang (Cannabis sativa), situating its Ayurvedic legacy alongside modern scientific perspectives. By analysing its classification, diverse preparations and evolving therapeutic relevance, the article aims to bridge traditional wisdom with contemporary biomedical discourse. Ultimately, by integrating insights from classical texts and modern pharmacology, this work underscores the enduring significance of Bhang and highlights its potential role in regulated, integrative medical practice today.

This work uniquely situates Bhang within a dual lens—Ayurvedic tradition and modern science—by tracing its historical roots, diverse formulations, and evolving therapeutic relevance. It bridges textual analysis of authoritative Ayurvedic sources with contemporary pharmacological perspectives, offering a structured synthesis that highlights cannabis not merely as a narcotic or cultural substance, but as a potential candidate for integrative, evidence-based medical practice today.

Origin of Bhang (Vijaya)[8]:-

The origin of Bhang is elaborately described in the Anandakanda. According to this text, during the cosmic event of Samudra Manthana (the churning of the ocean), poison (viṣha) first emerged, followed by the divine nectar (Amṛut). This nectar was offered to Lord Shiva for consumption. While partaking of it, a few drops spilled onto the earth, from which Bhang, also revered as Mahauṣadhi, manifested.Subsequently, Lord Shiva entrusted this sacred plant to Bhairava, who then offered it to the Yoginis. Delighted by this act, the Yoginis blessed their devotees with the plant, thereby ensuring its manifestation on the terrestrial plane (Bhuloka). Through this mythological lineage, Bhang was sanctified as a divine medicine and gradually became an integral part of human therapeutics.In the sequential narrative of its origin, the Anandakandafurther provides a detailed account of the various forms of bhang, which are compiled and presented subsequently.

Table 1: Typologies and Variations as mentioned in Anandakanda[9]

S.No.	Category	Description
1.	Variation according to Yugas	Sata yuga – White coloured flower Treta Yuga – Red coloured flower Dwapara Yuga – Yellow coloured flower Kal Yuga – Blue coloured flower
2.	Number of leaflets	1-leafed,3-leafed,5-leafed,7-leafed,9-leafed,10-leafed,11-leafed,13-

		leafed
3.	Gender distinction	Female plant – Creeper form (Vallabhi rupa) Male plant – Tree form (Vruksharupa)

Description and Botanical Aspect[10]:-

Cannabis sativa L. is an annual plant of the Cannabaceae family, typically dioecious in nature. It is currently recognized as the sole species within the genus Cannabis, though it encompasses several phenotypes that may be classified as subspecies or varieties. This species is notable for its rapid growth and fluted stem, which can reach heights of 1–4 m with a diameter of 1–3 cm (Figure 1a). Stem size and height vary depending on subspecies, environmental factors, soil type, and climatic conditions.

The seeds are smooth, greyish, and either ovoid or spherical, measuring 2.5–3.5 mm in length and 2.5–3 mm in diameter (Figure 1c). Each seed contains two nutrient-rich cotyledons (protein and oil), while the albumen is relatively small compared to other plants.

Figure 1:Cannabis sativa L. General aspect (a); inflorescence (b); seed (c); leaf (d); stem (e).

The flowers are slender and delicate, covered with glandular hairs that impart fragrance and stickiness (Figure 1b). Male and female plants cannot be distinguished during early growth; sex differentiation becomes evident only at the flowering stage. Female flowers lack petals and consist of two elongated stigmas (white, yellow, or pink). Their small calyx (3–6 mm) encloses an ovary with a single ovule. These flowers appear in pairs at the axils of bracts, which are densely covered with glandular trichomes where cannabinoids—primarily THC—are synthesized. Male flowers, in contrast, bear five sepals about 5 mm long, in shades of yellow, white, or green, and produce pollen sacs that fertilize the resinous stigmas of female plants.

Leaves are stipulate and opposite, with palmate arrangements of five to seven elongated, spiny segments featuring serrated margins (Figure 1d). Towards the upper stem, leaves become alternate, appearing every 10–30 cm. The plant bears cystolithic, tectorial, and resin-secreting hairs; the latter are distinguished by a large basal cell cluster that produces resin.

The root system is dominated by a taproot extending up to 30 cm, with lateral roots spreading 20–100 cm. In peaty soils, lateral roots are more developed, while the taproot typically penetrates 10–20 cm deep. Root growth is relatively slow during early vegetative stages, in contrast to the aerial parts of the plant, which expand vigorously and rapidly.

Varieties of Cannabis:-

Professors William Emboden, Loran Anderson and Harvard botanist Richard E. Schultes and coworkers also conducted taxonomic studies of Cannabis in the 1970s, and concluded that stable morphological differences exist that support recognition of at least three species C. sativa, C. indica, and C. ruderalis.[11]

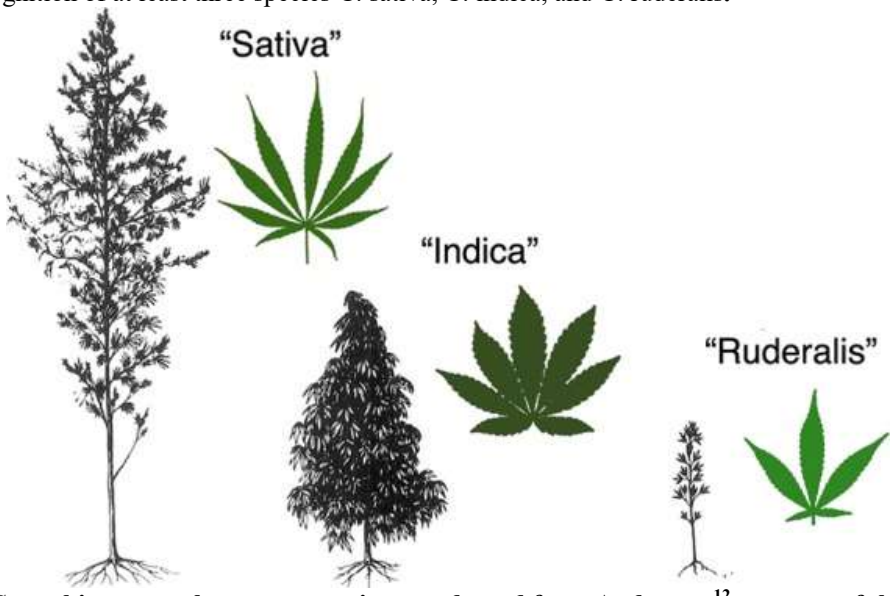

Figure 2:Cannabis vernacular taxonomy, image adapted from Anderson,[12] courtesy of the Harvard University Herbaria and Botany Libraries

Synonyms and Semantic Significance:-

Although various Samhitas mention multiple synonyms of Vijaya, the Anandakanda provides an elaborate exposition of these synonyms along with their specific meanings, as outlined below:

Table 2: Synonyms mentioned in Anandakanda[13]

S.No.	Sanskrit Name	Meaning	Contextual Significance
1.	Sivamuli	Auspicious and beneficial root	Considered sacred due to association with Lord Śiva
2.	Vijaya	That which grants victory over the six enemies (ṣaḍ-satru: desire, anger, greed, delusion, pride, envy)	Enhances self-mastery and inner strength
3.	Bhangi	Destroyer of the threefold miseries (trividha-tapa: adhyatmika, adhibhautika, adhidaivika)	Promotes relief from mental, physical, and spiritual afflictions
4.	Ganja	Inducer of intoxication	Reflects its psychoactive property
5.	Vimardini	Suitable for use after grinding/pounding	Indicates the method of preparation for medicinal use

6.	Divya	Bestower of joy and radiance	Provides bliss and enhances vitality
7.	Siddha	Self-accomplished, naturally potent	Recognized as inherently powerful without external processing
8.	Manonmani	Calms the disturbances of the mind	Acts as a tranquillizer, relieving anxiety and stress
9.	Madhudrava	Causes the nectar to flow at the cranial aperture (brahmarandhra)	Suggests a role in spiritual awakening/experiences
10	Pasupasavinasini	Destroyer of animalistic tendencies and bondages	Promotes higher consciousness and detachment
11	Kalghni	Conqueror of death	Symbolizes longevity and protection from untimely death
12	Rogaghni	Destroyer of diseases	Therapeutically significant for treating disorders

Table 3: Synonyms mentioned in various classical texts

S.No.	Text	Synonyms
1.	Rasatarangini[14]	Bhanga, Bhangi, Matulani, Madini, Matika, Matuli, Vijaya, Tandrakariṇi, Bahuvadini
2.	Madanapala Nighantu[15]	Bhanga, Bhangja, Mohini, Vijaya, Jaya
3.	Dhanvantari Nighantu[16]	Vijaya, Ranjika, Bhanga, Tandrakṛt, Bahuvadini, Madini, Madika, Matu, Ganja
4.	Raja Nighantu[17]	Vijaya, Ranjika, Bhangi, Tandrakrad, Bahuvadini, Madini, Madika, Madu
5.	Kaideva Nighantu[18]	Ganjayika, Matulani, Madini, Vijaya, Janya
6.	Priyavṛta Nighantu[19]	Bhanga, Matulani, Madini, Vijaya
7.	Bhavaprakasa[20]	Bhanga, Ganja, Matulani, Madini, Vijaya, Jaya
8.	Sarasvati Nighantu[21]	Bhanga, Vijaya, Jaya

These diverse names reflect Bhangmultifaceted nature—ranging from its intoxicating properties to its therapeutic and spiritual significance

.**English names[58]–** Pot, Grass, Weed, Rope, Mull, Dope, Hemp, Skunk, Mary jane, Reefer.

Five-Fold Pharmacological Profile (Rasapanchak) ofVijaya

A comparative matrix that organizes the properties and actions of Bhāṅg (Vijaya) across classical Ayurvedic texts.

Table 4: Five-fold pharmacological profile described in various source:

S.No.	Text	Rasa (Taste)	Veerya(Potency)	Guna (Qualities)	Karma (Actions)
1.	Yogaratanakara[22]	Tikta (Bitter)	Uṣṇa (Hot)	Tikṣṇa (Sharp), Laghu (Light), Karṣaṇi (Reducing)	Pitta-inducing, Grahi (Absorbent), Digestive Dipana(fire stimulant), Madakṛt(Intoxicating), Vata-pacifying
2.	Bṛhat Rasa Raja Sundara[23]	Katu (Pungent), Kashaya (Astringent), Tikta(Bitter)	Uṣṇa (Hot)		Vata-Kapha pacifying, Balya (Strengthening), Medhakara (Intellect-promoting), Vakprada (Speech-enhancing), Dipana (Digestive fire stimulant),
3.	Madanapala Nighantu[24]	Tikta (Bitter)	Uṣṇa (Hot)	Light, Sharp	Kapha-reducing, Digestive stimulant, Anahakṛt (Relieves bloating)
4.	Dhanvantari Nighantu[25]	Tikta (Bitter)	Uṣṇa (Hot)	Light, Sharp	Kapha-reducing, Digestive, Intoxicating, Enhances speech and digestion
5.	Rasa Tarangini[26]	Tikta (Bitter)	Uṣṇa (Hot)	Light, Sharp	Kapha-soothing, Digestive stimulant, Intoxicating
6.	Raja Nighantu[27]	Tikta (Bitter)	Uṣṇa (Hot)	Light, Sharp	Kapha-reducing, Moha (induces delusion), Enhances speech and digestion
7.	Kaideva Nighantu[28]	Tikta (Bitter)	Uṣṇa (Hot)	Sharp, Light, Reducing	Pitta-enhancing, Rucikara (Appetite enhancer), Intoxicating, Kapha-Vata pacifying
8.	Priyavṛta Nighantu[29]	Tikta (Bitter)	Uṣṇa (Hot)		Pitta-enhancing, Memory-impairing, Constipating, Sleep-inducing, Aphrodisiac
9.	Sodhala Nighantu[30]	Tikta (Bitter)	Uṣṇa (Hot)	Light	Digestive stimulant, Sleep-disturbing, Aphrodisiac, Kapha-Vata pacifying
10.	Bhavaprakasa[31]	Tikta (Bitter)	Uṣṇa (Hot)	Light, Sharp	Kaph pacifying, Pitta-enhancing, Intoxicating, Enhances speech and digestion, Absorbent
11.	Rasendra Sambhava[32]	Katu (Pungent), Kashaya (Astringent),	Uṣṇa (Hot)		Vata-Kapha pacifying, Strengthening, Intellect-promoting, Speech-enhancing

		Tikta (Bitter)			
12.	Sarasvati Nighantu[33]				Delusion-inducing, Intoxicating

This matrix reveals how Bhang is consistently described as bitter, hot, sharp and light, with actions that span digestive stimulation, Kapha-Vata pacification, intoxication and cognitive modulation.
Only the MadanapalaNighantu provides information on the vipaka of Bhanga, identifying it as katuvipaka.[24]

Major chemical constituents:-
Bhanga has more than sixty chemical constituents. Some important constituents are Cannabinol, tetrahydro-cannabiol, Cannabidiol, Cannabichromene, 1-dehydro-tetrahydrocannabinol, eugenol, sesquiterpenes, cannabinoids etc.[34]Active principle-It is not an alkaloid, but a fat-soluble oleoresin, cannabinol, the active form being δ-9-tetrahydrocannabinol (THC). It also contains benzopyrene, a known carcinogen which is also found in tobacco.[35]

Bhanga Vardhana Vidhi (Method of Cultivation and Potentiation of Bhang)[36]:-
The Bhanga Vardhana Vidhi described in the Anandakanda represents a unique fusion of agricultural science, ritual practices, and pharmaceutical processing. This integrative approach reflects the holistic vision of Ayurveda, wherein the cultivation and preparation of medicinal plants are sanctified through spiritual and procedural disciplines, with the intent of enhancing their potency and therapeutic efficacy. However, these classical descriptions have not yet been scientifically validated through contemporary experimental or clinical studies. Therefore, the Bhanga Vardhana Vidhi offers a promising and unexplored area for future research, particularly to evaluate its potential role in phytochemical enhancement, antimicrobial activity, and therapeutic potentiation using modern scientific methodologies.

The Bhanga Vardhana Vidhi is described as follows:
1.Selection of Soil:
The text prescribes fertile soil conditions for the cultivation of Bhang. The most suitable soil is described as soft, black and dust-like, enriched with cow dung and organic residues, ensuring high fertility and potency of the plant.

2. Auspicious Time for Sowing:
Seed sowing is recommended during PuṣyaNakṣatra, Siddha Yoga or SravaṇaNakṣatra (preferably in the bright fortnight). Ritual procedures involve bathing, applying sandal paste, reciting mantras and worship before sowing seeds. These practices highlight the ritual sanctity associated with Vijaya cultivation.

3. Irrigation and Plant Care:
- Sprouting stage: irrigation with water mixed with ghee.
- Pest protection: use of seawater.
- Branch strengthening: branches filled with mercury and tied with silk threads.
- Flowering stage: irrigation with liquor, meat, honey and milk.

Additionally, Jatamamsi roots are tied to the plant to enhance its vigor.

4. Mantra Recitation:
The cultivation process is accompanied by mantra chanting:
- During seed sowing: Sthapana Mantra ("OṁKṣāṁŚrīṁ Ho…").
- At the time of consumption: Sevana Mantra ("OṁŚrīṁHrīṁ Klīṁ…").

This demonstrates the integration of spiritual and therapeutic dimensions.

5. Special Ritual Observances:
On Phalguna Kṛiṣṇa Caturdasi, special rituals are performed, including bathing, application of fragrance and flowers, adorning with ornaments and worship of Bhairava and Nandisvara with offerings of liquor and meat.

6. MantraSadhana (Seven-Day Ritual Practice):
The ritual aspect includes:

- Use of colored threads (red, yellow, white, black) for TantubandhanaMantra.
- Daily recitation of the AghoraMantra 1000 times.
- On the fifth day, chanting the LavanaMantra before Goddess Amṛtesvari.
- Wearing Bhang leaves as an amulet for empowerment.

7. Preparation of Powder:
The harvested leaves are dried in sunlight for seven days, then subjected to the puta process (incineration) in an earthen pot. The powder is further potentiated (bhavana) seven times with the juices of Gunja, Dhattura and Guḍuci.

8. Formulation of Medicine:
Equal proportions of Bhang powder, sugar (mishri) and Bhang extract are mixed. The blend is cooked in milk, honey is added and the preparation is stored in a glass vessel placed within heaps of grains, accompanied by chanting of the MahavaṭukaBhairava Mantra.

9. Mode of Administration:
After one month of maturation, the medicine is consumed in the morning, in a dose equal to the size of an amalaka (Indian gooseberry), following purification rituals. Regular use for three years is claimed to bestow freedom from diseases, aging and death, with a lifespan of up to 300 years.

10. Solar Processing (Suryapaka Method):
A formulation is prepared using Varahikanda, Triphala, Citraka, Asvagandha and Bhang powder (10 parts), mixed with buttermilk in a glass vessel and exposed to sunlight for 15 days. Administered after body purification for eight months, it is said to confer radiance comparable to the sun.

11. Lunar Processing (Candrapaka Method):
Another preparation includes Vijaya, Yastimadhu, cardamom, Citrakamula, white sandalwood, sugar (mishri), SuvarṇaBhasma (gold ash), camphor and ghee. The mixture is exposed to moonlight from Pancami to Purṇima, followed by worship and purification and then administered as a Leha (electuary).

12. Processing Seasons:
Agni-paka (fire processing): Aṣaḍha–Asvina and Phalguna–Jyeṣṭha.
Suryapaka (sun processing) and Candrapaka (moon processing): Kartika–Magha.

Claims including longevity enhancement, immortality, and sun-like radiance are described in classical texts as part of traditional belief systems. As these are not supported by contemporary scientific evidence, they may be considered prospective research domains for future validation and transformation through modern scientific frameworks.

Sodhana(Purification/ Processing):-
Sodhana is one of the unique concepts of Ayurveda where the plants possible toxic effects are passed through specific recommended process with certain BhavanaDravya (media) before clinical administration to reduce the toxic effect and make them therapeutically effective in prescribed dosa.[37]Different shodhana procedures of Bhang are mentioned in various texts which are enumerated in below table.

Table 5: Purification Methods as described in various classical Ayurvedic texts:

S.No.	Text	Purification steps
1.	Rasatarangini[38]	1. Soak dried Bhang leaves in water → squeeze → sun-dry → roast in cow's ghee over mild heat 2. Steam with Babool decoction for 25–30 min → sun-dry

2.	Yogaratanakara[39] / Bṛhat Rasa Raja Sundara[40]	Steam Bhang in Babool decoction → dry → triturate with cow's milk (Godugdha bhavana) → dry again
3.	Rasa Chandamsu[41]	Prepare Babool bark decoction → place Bhang in cloth pouch → suspend in Dola Yantra → steam for 1 prahar (~3 hrs) → milk trituration
4.	Rasendra Sambhava[42]	1. Steam in Babool decoction → dry → milk trituration → dry again 2. Soak dried leaves in water → squeeze → sun-dry → roast in cow's ghee

This format highlights both the common elements (like Babool decoction, milk trituration, sun-drying) and the distinctive apparatuses like Dola Yantra used in traditional purification.

Vikaras of Bhang: Stages of Physiological and Psychological Transformation:-

In Ayurveda, Bhang (Cannabis sativa) is revered as a potent medicinal and spiritual herb. However, its effects unfold through a series of transformative stages known as Vikaras, which reflect both physiological responses and altered states of consciousness. These stages are described in a progressive sequence, each marked by distinct symptoms and experiences:

Table 6: The nine Vikaras (transformative or adverse stages)[43]

Stage	Name	Symptoms / Experiences
1	First Vikara	Dry nose, red eyes, dryness of tongue, lips and palate; heat and discomfort in breath and flanks
2	Second Vikara	Eyes close, face is covered—withdrawal from surroundings
3	Third Vikara	Burning in hands, feet and eyes; voice becomes tremulous or choked
4	Fourth Vikara	Intense hunger and thirst; eyes blink rapidly or remain closed
5	Fifth Vikara	Speech becomes unclear; forgetfulness of spoken words
6	Sixth Vikara	Mental distress; onset of epileptic-like state (Apasmara)
7	Seventh Vikara	Burning in hands; sensation of bodily attraction; repeated waves of bliss like immersion in a great ocean
8	Eighth Vikara	Disorientation (Digbhrama), furrowed brows (Bhrubhanga), excessive weeping
9	Ninth Vikara	Ear ringing, fainting, epilepsy-like symptoms, belching, incoherent murmuring, rolling on ground, profuse sweating, sorrowful and disjointed speech

Therapeutic Management of Vikara's[44]:-
The classical Ayurvedic texts prescribe a holistic and sensory-based approach to managing the adverse effects or transformative disturbances (Vikaras) caused by Bhang. These treatments aim to restore physiological balance, soothe the mind and harmonize the senses.

Primary Interventions:-
1. Purgation (Virechana) – To eliminate excess doshas and toxins.
2. Intake of Sour-Tasting Substances (AmlaRasa) – To counteract dryness and heat.
3. Cold Water Head Bath – To cool the system and relieve cranial heat.

Cooling and Mental Soothing Measures:-
4. Application of Paste – Made from sandalwood (Chandan), vetiver (Ushir), camphor (Kapoor) and cool water.
5. Garlands of Fragrant Cool Flowers – Jasmine (Chameli), Arabian jasmine (Mallika), Champa, Lotus (Kamal) and Blue Lotus (Utpal).
6. Lotus-Stalk Bracelet – Worn on the wrist for cooling and calming effect.
7. Banana Leaf Bedding – The patient is laid on a bed of banana leaves to absorb heat.
8. Betel Leaf Chew (Tambula) – Mixed with camphor, cardamom, clove, Ankol and areca nut (Supari).
9. Fan Made of Palm Leaf (Taḍpatra) – Used to gently fan the patient.

Clothing and Ornaments:-
10. Fine, Fragrant and Cool Garments – To comfort and regulate body temperature.
11. Moonlight Therapy – Patient is seated under moonlight for two Muhurtas (~96 minutes) wearing gemstone-studded bracelets.

Sensory and Emotional Balancing:-
12. Rest in the Embrace of a Beautiful Woman – To soothe emotional disturbances.
13. Sweetened Milk or Meat Broth – Mixed with sugar and ghee for nourishment and grounding.
14. Cooling Beverages – Sour drinks (Panak), mung soup (Yuṣa), herbal sherbets, honey, etc.

This integrative regimen reflects Ayurveda's sensitivity to both somatic and subtle energies, combining pharmacological, ritualistic and sensory therapies to restore equilibrium.

Signs and symptoms of Bhang toxicity (As per modern):-
cannabis toxicity usually presents in two forms.
- Acute poisoning
- Chronic poisoning.

Acute poisoning- clinical features vary with dose consumed.[45]Inhalation is associated with more pronounced effects than ingestion- With low dose changes perceived in the victim comprise of: Initial euphoria with: Over talkativeness, perceptual alterations. This may be followed by: Relaxation, drowsiness, hypertension, tachycardia, slurred speech, ataxia, motor incoordination, stimulation of appetite. With higher dose change perceived in the victim comprise of: Conjunctival congestion and miosis, acute paranoid psychosis, depersonalization, large doses produce nausea, anxiety confusion, delusion and hallucinations, characteristic (burnt rope) odour, if the drug has been used for smoking, intravenous use can cause headache, diplopia, vertigo, dyspnea, hypotension, and renal failure.[46] Rarely the victim may go into paralysis of muscles, loss of reflexes, coma and death.

Chronic poisoning-chronic poisoning can present in two forms-Cannabis addiction, Hashish insanity. Cannabis addiction- chronic poisoning is resulting from continued use of the drug in any form of and is characterized by – anorexia, loss of weight, weakness, tremors, impotence and moral deterioration. The victim might become lethargic, apathetic and disinterested to work, and suffer from poor concentration (Amotivational syndrome).[47]Hashish insanity– chronic, heavy abuse of cannabis causes paranoid psychosis with violent behaviour, culminating in homicide or suicide[48] (run-amok-it is a psychic disturbance resulting from continued use or sudden consumption of cannabis and is characterized by a desire to commit murders. After intake, there is a period of a depression, followed by a violent attempt to kill people (impulse to murder). The addict first kills a person against whom he may have real or imaginary enmity and then kills anyone who comes in his way, until the homicidal tendency lasts. The person may then commit suicide or surrender himself.[49] Increased susceptibility to pharyngitis, bronchitis, asthma and gynaecomastia (in males) are also seen.

Treatment:-
Acute poisoning –Decontamination-stomach wash in case the drug has been ingested, haloperidol or other antipsychotic medication for psychosis, psychotherapy and symptomatic treatment.[50]Chronic poisoning- Gradual withdrawal of the drug, diazepam for sedation, haloperidol for psychotic reaction,psychotherapy and symptomatic treatment as per patient requirement .[51]

Prativisha(Antidote):-
- Shunthichurna with cow's curd[52]
- Induce purgation then shirshsnan (bath) with amlarasa and cold water[53]
- Cow's milk with cow's clarified butter and sugar[54]
- Pralepa with Chandan, ushir etc[55]
- Take Lemon juice[56]

Therapeutic dose - 2 – 4 ratti[57]
Fatal dose[58] -
Bhang: 10g/kg body wt.
Charas: 2 g
Gaanja: 8 g
Fatal period[59] – about 12 hours

Classical Formulations of Bhang:-
Upon reviewing numerous classical Ayurvedic texts, a total of 210 Bhanga formulations were identified, of which 193 are intended for internal administration and 17 for external use.[89] In this article, special emphasis has been placed on the formulations described in Anandakanda and Rasa Tarangini, which provide extensive and detailed accounts of Bhanga-based preparations

Mentioned in Anandakanda[60]:-
1. Skin Diseases (Kuṣṭha) – Gorakhamundi powder + Chitraka powder + Nirgundi (1 part each) + Bhang (3 parts)
2. Epilepsy (Apasmara) – Brahmi + Kumari + Bhang powder (equal parts)
3. Tuberculosis (Yakṣma) – Bhang + Triphala + Trikatu (equal parts)
4. Pitta Disorders – Bhang + Karpasa root + Matsyakshi powder (equal parts)
5. Abdominal disorders and Pain (Gulma&Sula) – External application using alkaline extracts from Snuhi leaves / Arka leaves / Bhang leaves
6. Cognitive Enhancement – Vacha + Durva + Bhang (equal parts)
7. Skin Diseases (Kuṣṭha) – Yashtimadhu + Purified Sulphur + Bhang
8. Semen Enhancer (ViryaVardhaka) – Shalmali resin (Mocharas) + Bhang powder + Mishri
9. Kapha Disorders – Patha + Katuki + Trikatu + Bhang (equal parts)
10. Antidote for Major Poisons (Mahaviṣa) – White Gunja powder + Bhang powder
11. Skin Diseases (Kuṣṭha) – Vyaghata powder + Bhang powder
12. Vata Disorders – Forest Pepper (Araṇyamarica) powder + Castor root powder + Bhang powder (equal parts)

It is said that regular and sequential use of these formulations for 12 months orally may liberate a person from the cycle of birth and death.

Other Formulations of Bhang (Cannabis sativa)[61]:-
1. Vatankura and Bhang powder in equal parts, administered with honey, sugar and ghee — renders one influential across all realms (sarvaloka-vashakara).
2. Apamarga powder and Bhang powder, taken with cow's ghee — promotes longevity and immortality.
3. A compound of Triphala, sugar, Bhang, Chitraka, Trivrit, Trikatu, Vasa, Durva, Bhringaraja, Maricha, Yashtimadhu, Jiraka, SaindhavaLavana, Camphor, Kachura — all in equal parts, combined with an equal quantity of Bhang powder and consumed with the trinity of sweeteners (honey, jaggery, sugar) — effective in treating circular dermatoses (mandala kushtha).
4. Ashwagandha, Vacha and Trikatu powders in equal parts, blended with an equal portion of Bhang powder and taken with honey for three years — leads to divine-like vitality and cognition.
5. Bhang powder (1 part) + purified Hartala (1/16 part) — beneficial in gynecological disorders (pradara) and inflammatory conditions (shotha).
6. Bhang powder (1 part) + purified Manashila (1/16 part) — alleviates pruritus (kandu).

7. Dhataki flowers, nutmeg powder and dry ginger (1 part each) combined with Bhang powder (3 parts), cooked in cow's milk with half its volume of water and consumed with the trinity of sweeteners — enhances semen quality, longevity, and strength.
8. Dhataki flowers, nutmeg and dry ginger powders (1 part each) with Bhang powder (3 parts), mixed with either Ajmoda or turmeric powder, cooked in milk and consumed with the trinity of sweeteners — treats eczema (pama) and scaly skin disorders (kitibha).
9. In ShatadhautaGhrita, incorporate equal parts of Nagakesara, Kapikacchu, clove powder, cardamom, Aguru, camphor, white sandalwood, musk, Kankola powder and saffron, along with an equal quantity of Bhangseedpowder. After thorough trituration in cow's milk, form tablets and consume with betel leaf — cleanses the oral cavity and is beneficial in oral pathologies.
10. Equal parts of Mandukaparni, Vacha and Bhang powders — enhances vocal clarity and intellect.
11. A blend of Trisugandhi(Cinnamomum zeylanicum, Elettaria cardamomum, Cinnamomum tamala), Triphalaand Trikatu in equal parts, combined with an equal quantity of Bhang powder and taken with honey and ghee — acts as a rejuvenative, digestive stimulant, and is beneficial in diabetes (prameha) and respiratory disorders (shwasa).

    Beyond these therapeutic yogas, Anandakanda elaborates on a diverse array of compound formulations featuring Bhang, each tailored for specific physiological, neurological, or rejuvenative purposes. These include: PanchavaṇaChurṇa, TriphaladiChurṇa, SatavariyadiChurṇa, MarkatbijadiPaka,Salmaliyadi Leha, Haṣṭikandadi Yoga, MuṇḍyadiChurṇa, Sveta Palasadi Yoga, VijayabijadiModaka, Vyanjaniyogratha, Sandhara Yoga, Varahi Yoga, Vijayadi Taila etc.[62]

Mentioned in Rasa Tarangini[63]:-

1. For Insomnia (Sleep Induction): Fresh or dried cannabis leaves are ground with goat's milk in a mortar and applied as a paste to the soles of the feet. This induces sleep quickly.
2. For Severe Pain in Haemorrhoids (Arsa): Cannabis leaves are ground with water on a stone slab (sil) and applied warm as a poultice to the anal region. This alleviates intense pain.
3. For Spasmodic Asthma and Infectious Cough (Akṣepayukta Tamaka Svasa, Sankramaka Kasa): Smoking cannabis provides relief in these respiratory conditions.

Therapeutic Properties of Bhang as per Rasa Tarangini[64]:-

1. Digestive and Sexual Health:

- Stimulates appetite.
- Effective in treating dhvajabhanga (erectile dysfunction).
- Alleviates svapnaprameha (night-time seminal discharge).
- Enhances seminal retention capacity (viryasthambhana).
- Acts as a sleep inducer and aphrodisiac.

2. Neurological and Mental Disorders:

- Relieves excessive delirium (pralapa).
- Beneficial in dhanustambha (tetanus-like rigidity).
- Treats unmada (psychosis or insanity).
- Alleviates pain in vṛkkasotha (nephritis).
- Improves memory in cases of mental weakness and forgetfulness.
- In very small doses, it helps restore mental clarity.

3. Abdominal and Gastrointestinal Conditions:

- Relieves intestinal colic (antrasula) and renal colic (vṛkkasula).
- Alleviates pain due to pittasotha (inflammatory conditions).
- Strengthens the stomach.
- Treats atisara (diarrhea) caused by indigestion.
- Useful in ajirṇa (dyspepsia), loss of appetite and food intolerance.

4. Urinary and Reproductive Health:

- Increases urine flow (mutra pravṛtti).
- Stops bleeding in urine (rakta mutra).

- Beneficial in excessive menstrual bleeding, raktapradara, and bleeding due to miscarriage or abortion.
- Relieves headache during menopause in women.

5. Respiratory Disorders:
- Relieves akṣepayuktatamakasvasa (spasmodic asthma with convulsions).
- Effective in sankramakakasa (infectious cough), especially whooping cough.
- Alleviates cough in rajayakṣma (pulmonary tuberculosis).
- Treats convulsions in the bladder region (bastiakshepa).

6. Vascular and Sensory Effects:
- Causes local vasoconstriction when used internally or externally.
- Enhances hearing and vision (auditory and visual acuity).
- Treats kancharoga (early cataract) associated with ardhavabhedaka (migraine).
- Alleviates bhaskararoga (possibly photophobia or sun-related disorder) and timiraroga (early-stage eye disorders like night blindness).

7. General Wellness:
- In healthy individuals, its use leads to a peculiar, blissful sleep.
- Relieves pain in arsa (haemorrhoids).
- Reduces fever (jvara).
- Quickly alleviates epidemic convulsive pain due to naḍidaurbalya (nervous weakness).

Discussion:-

The understanding of Bhang (Cannabis sativa L.) becomes richer when Ayurveda and modern science are viewed together rather than as separate worlds. One interesting point of convergence is leaf morphology. Classical Ayurvedic texts describe the characteristic multi-lobed leaves of Bhang[65-69] and modern botany also identifies Cannabis by its familiar 5, 7 or 11 serrated leaflets.[70-72]This shared recognition shows that ancient scholars relied on sharp empirical observation—long before modern taxonomy was formalized.When we examine Bhang through the Ayurvedic lens of rasa, guna, virya, vipaka, and karma, a clear resonance with modern pharmacology begins to appear. The tikta and kashaya tastes relate to the presence of flavonoids, tannins and bitter phytochemicals.[73] The laghu and ruksha qualities reflect actions on metabolism and digestive stimulation.[74]Ushnavirya explains many stimulant, circulatory and metabolic effects described in both Ayurveda and modern research.[75]. Ayurvedic karmas such as vedanasthapana, nidrajanana, krimighna and deepana–pachana find strong parallels in pharmacological actions of cannabinoids, terpenes and other bioactive molecules.[76,77] This overlap suggests that Ayurvedic parameters function much like early forms of pharmacodynamics and pharmacokinetics.

A particularly fascinating area for future exploration is VardhanaVidhi, described in the classical texts of Rasashastra.[78,79] This method, which uses Parada (mercury) and other rasadravyas during cultivation to potentiate plant strength, shows striking similarity to modern concepts such as grafting, metabolic engineering and targeted phytochemical enhancement.[80-82] Just as modern scientists work to increase active constituents, antioxidant capacity or antimicrobial properties through biotechnological and horticultural techniques[81], Ayurvedic alchemists attempted similar potentiation through rasa-based methods. Scientific study of VardhanaVidhi could open a new interdisciplinary field connecting Rasashastra with plant biotechnology.Equally significant is the Ayurvedic emphasis on Shodhana, especially for potent herbs like Bhang. Classical purification methods—washing, grinding, heating and processing with herbal media—reduce unwanted components and modify pharmacological behaviour.[83] Modern purification approaches, including extraction, standardization and cannabinoid ratio modulation, serve similar purposes.[84,85] Thus, Shodhana is not merely ritualistic; it functions as an early pharmaceutical purification technique designed to improve safety and therapeutic consistency.

Looking ahead, the potential of Bhang is far from fully realized. Its complex phytochemistry combined with rich traditional knowledge makes it a promising candidate in neuroprotection, pain management, integrative oncology, psychopharmacology and personalized herbal formulations.[86-88] Ayurveda offers unique avenues such as rasa-aushadhi-mediated potentiation[80], nano-herbal delivery approaches and refined extraction protocols that could enhance therapeutic value. Collaboration between Ayurveda, pharmacognosy, phytochemistry, molecular biology and clinical sciences may help transform Bhang from a controversial plant into a precisely understood medicinal

resource.Yet, beyond purification and dosage, the decisive factor remains the user's intention—whether to seek healing or indulgence. Whatever Shodhana or purification we perform, it is ultimately the orientation of the mind that determines whether Bhang serves as medicine or becomes a substance of abuse.

Conclusion:-

Vijaya, extensively documented in classical Ayurvedic texts such as Anandakanda and the Nighantus, is recognized as a potent tridoshic herb with rasayana properties. Its therapeutic applications span neurological, dermatological, gastrointestinal, respiratory and reproductive domains. Ayurveda's emphasis on purification, dosage and formulation reflects a sophisticated approach to harnessing its medicinal benefits while minimizing psychoactive risks. In today's context, Bhang offers rich potential for integrative research, particularly in phytochemistry, drug development and personalized medicine. Systematic compilation and scientific validation of its traditional uses—especially those outlined in Anandakanda—could significantly advance evidence-based herbal therapeutics and global healthcare innovation.

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