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Review Article

Randia dumetorum

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Therapeutic Potential of Randia dumetorum Reitz Poir. - A Review

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Madanphala (Randia dumetorum (Retz.) Poir.), member of the Rubiacea family is a prominent medicinal plant in Ayurvedic pharmacopeia, has been extensively used since antiquity as a primary agent for inducing therapeutic emesis (Vamana). Rooted in the principles of Shodhana (bio-purification), Vamana Karma is indicated for the expulsion of morbid Kapha and associated Doshas. Among various emetics, Madanphala is considered superior due to its Anapayitvata characteristics indicating it is safer to use and has very few complications. For Vamana, Asthapana, and Anuvasana, it is regarded as the best medication in Agrya Varga. Additionally, it helps treat conditions like Vidradhi (Abscess), Shotha (Inflammation), Jwara (Fever), Gulma (Abdominal lump), Kushtha (Skin diseases) and Pratishyaya (common cold). In present paper a comprehensive review of Madanphal, starting from ancient Ayurveda Classics to contemporary scientific publications has been done which includes synonyms, characteristics, actions, indications, posology, toxicities, and therapeutic indications. The information collected from various sources has been critically analysed and presented in a scientific publication to revalidate its clinical and pharmacological utility.

Keywords: Madanphala, Randia dumetorum, Ayurveda, Shodhan, Emesis

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Introduction

The exploration of medicinal plants as therapeutic agents has been integral to traditional systems of medicine across world, particularly *Ayurveda*, where plant- based interventions form cornerstone of treatment protocols. With resurgence of global interest in natural and integrative medicine, classical *Ayurvedic* texts are increasingly being revisited for their profound pharmacological insights. According to theory of Ayurveda, when a morbid *Dosha* builds up, it must be eliminated via closest path, which is also referred to as detoxification therapy, or *Shodhana*. There are five primary therapies that make up *Shodhana* viz. *Vamana* (therapeutic emesis), *Virechan* (therapeutic purgation), *Niruh Basti* (therapeutic enema), *Shirovirechan* (nasal insluffation) and *Raktasravan* (Bloodletting).**[1]** Medicinal plants are abundantly used in Ayurveda to treat a wide range of ailments. The substance which forcefully throws out unripe (even normal food in stomach) or undigested bile and phlegm from mouth is called *vamana*, for example *Madanphala*.**[2]** Regarding *Vamana Karma* in *Kalpasthana, Acharya Charaka* provides a detailed description of six drugs viz. *Madanphala* (*Randia dumetorum* (Retz.) Poir.) *, Jeemutka* (*Luffa echinata* Roxb.), *Ikshavaku* (*Lagenaria siceraria* (Molina) Standl.), *Dhamargva* (*Luffa cylindrica* L. Roem.), *Kutaja* (*Holarrhena antidysentrica* Linn.), and *Kritvedhana* (*Luffa acutangula* L. Roxb.).**[3]** *Charaka* has mentioned 355 formulations to induce emesis and treat illnesses curable by emesis. For therapeutic emesis purpose, an emetic drug should poses qualities like – *Ushna* (hot), *Tikshna* (penetrating), *Sukhsma* (subtle), *Vyavayi* (Quickly absorbable), *Vikasi* (Depressant) and predominance of *Vayu* (air) and *Agni* (fire) *Mahabhuta* (CS.Ka.1.5). *Acharya Charak* has considered *Madanphala* as best medicine to induce therapeutic emesis. *Madanphala*, has been anonymously equated with *Randia Dumetorum* (Retz.) Poir. Properties of *Madanphala* are *Katu Vipaka* (post-digestive impact), *Laghu Rukhsa* characteristics, *Madhura Kashaya Tikta Rasa* (taste), and *Ushna Virya* (potency). It is regarded as best drug for *Vaman* due to its *Anapayitvata* properties, which indicate that it is safer to use and has very few complications (CS.Si.11.13). In *Agrya Prakarana,* it is stated as "*Vaman-Asthapan-Anuvasan-Upyoginam*" which means it is best drug to induce emesis, for oily and non -oily enema (CS.Su.25.40).

Reading all of available ancient texts of Ayurveda and reviewing recent studies is essential to gain thorough understanding of any medicinal plant. This article aims to compile comprehensive information from classical Ayurvedic texts, *Nighantus* and online resources with most recent research on synonyms, part used, properties and pharmacological actions, indications, doses and toxicology.

Materials and Methods

Ancient *Ayurvedic* classics including *Brihattrayi* and *Nighantus* have been reviewed in this study. Additionally, a variety of information has been gathered from other online journals.

Madanphala: **Botanical Source**

Botanical name - *Catunaregam spinosa* (Thunb.) Tiruv.**[4]**

Family - Rubiaceae

Synonyms[4] - *Randia dumetorum* (Retz.) Poir.; *Gardenia spinosa* Thunb.; *Randia brandisii* Gamble; *Xeromphis spinosa* (Thunb) Keay.

Table 1: *Madanphala:* Etymological Derivation of Classical synonyms[5]

SN	Name	Etymological Derivation
1.	Madan	Produces cutaneous piloerection and malaise
2.	Kaphavardhan, gaal	Eliminates Kapha Dosha
3.	Karhaat, Shalyak	Thorny tree
4.	Maruvak, Shvasana	Grows in dry region
5.	Ghantal	Fruit exhibit Bell-like morphology and hang downward from the stalk
6.	Dharaphal	Longitudinal striations on the external surface
7.	Pinditak	Seeds occur in a consolidated mass within the endocarp
8.	Phala	Fruit is the main part utilized for medicinal applications
9.	Bastirodhan	Utilized in the preparation of therapeutic enemas
10.	Matsyantakphala	Used as fish poison
11.	Raath	Applied in many disorders
12.	Vaaman	Used as Emetic
13.	Vishnaashan	Anti-poison
14.	Vishpushpak	Flowers are toxic

Pharmacological Properties and actions[6]

Rasa: Madhura, Tikta; Guna: Laghu, Ruksa; Virya: Usna; Vipäka: Katu; Prabhav: Vamak

Dose-1-2 g of drug in powder form for decoction. 3-6 g of drug powder for induction of vomiting.

Botanical description[7]

A large shrub or small tree armed with strong straight nearly opposite decussate spines 1.3-3.2 cm. long, coming off from above branchlets: branches horizontal, rigid, many of lateral ones suppressed & very short. Leaves usually fascicled on sup-pressed branches, 3.2-5.7 by 2-3.2 cm., obovate, obtuse. wrinkled, shining above, more or less pubescent above & on nerves beneath (especially when young), base cuneate; main nerves 6-10 pairs; petioles 3-1 mm. long, densely pubescent; stipules ovate, acuminate.

Flowers at ends of short leaf-bearing branchlets, fragrant, solitary or 2 (rarely 3) together; peduncles short. Calyx 1.3 cm. long, densely hairy; tube broadly campanulate; teeth 5, foliaceous, 5 mm. long, ovate-oblong, subacute, often with small intermediate teeth between.

Corolla 2 cm. long, at first white, afterwards becoming yellow; tube 5-6 mm. long, densely hairy outside; lobes 1.3 cm. long & nearly as broad as long, obovate oblong, rounded at apex, pubescent outside, spreading.

Fruit like a small crab-apple, yellowish, globose or broadly ovoid, smooth or obscurely longitudinally ribbed, crowned with large calyx-limb, 2-celled, glabrous; pericarp thick. Seeds many, flat, imbedded in pulp.

Geographical distribution[8]

It is found throughout India in deciduous forests up to an altitude of 1,400 m. It is common in Gujarat, Maharashtra, Tamil Nadu, Rajasthan, Bengal, Bihar, Orissa, Madhya Pradesh, and South India.

Flowering & Fruiting - April & July respectively.**[9]**

Part used - Fruit and bark.**[10]**

Though ancient classical texts of Ayurveda have described *Madanphala pippali* as a therapeutically useful part but some contemporary texts have mentioned the use of *Randia dumetorum* fruit pulp and Bark.**[7,11]**

Table 2: Vernacular names[10]

English	Emetic nut tree, Common emetic nut.
Hindi	Mainphal, Madan.
Bengali	Menphal, Madan.
Gujarati	Mainphal.
Kannada	Banegaru, Kare, Mangarike, Mangri.
Malayalam	Malankara, Karacculli.
Marathi	Ghelphala, Gera, Galay.
Punjabi	Arara, Kolla.
Tamil	Madkarai, Marukkalankay.
Telugu	Manga, Marrga, Manda.
Arabic	Jauzulaki, Juzulkosul, Fous-ul-ko-ul.
Assamese	Gurol, Behmona, Mon.
Kashmiri	Kirkla, Kokoa.
Oriya	Patova, Pativa.
Urdu	Mainphal.
Parsi	Fus-ul-kuch.

Table 3: Classical Categorization of *Madan-phala*

SN	Classical categorisation	Therapeutic indication
1.	Asthapanopag Mahakashaya (CS.Su.4.13 (25)	Adjuvant for Asthapan
2.	Anuvasnopag Mahakashaya (CS.Su.4.13 (26)	Adjuvant for Anuvasan
3.	Phalini Dravya (CS.Su.1.81)	Fruits are used as medicine
4.	Vamak Dravya (CS.Su.2.7)	Used for therapeutic emesis
5.	Aaragvadhadi Gana (SS.Su.38.5[12], AH.Su.15.17)	Alliviates vitiated Kapha and eliminates Visha (Poison), cures Prameha (Diabetes), Kushtha (Leprosy), Jwar (Fever), Kandu (Itching), heals wounds, induces Vaman (vomiting).
6.	Mushkakaadi Gana (SS.Su.38.20)	Destroys excess fat, sperm defects, diabetes, piles, anemia and stones.
7.	Mridudhoompaan Dravya (AH.Su.21.14)	Used for medicinal smoking.

Table 4: Classical Pharmacological Properties of *Madanphala*

SN	Pharmacological Properties	Reference
1.	**Ras -** Madhur (Sweet), Kashay (Astringent), Tikta (Bitter)	CS.Si.11.13
	Madhur, Tikta	K.Ni.1.900-902[13], BP.Ni.1.160[11]
	Katu, Tikta	R.Ni.8.68[14], D.Ni.1.191[15]
2.	**Guna -** Picchil (Slimy)	CS.Si.11.13
	Lekhan (Scrapping), Laghu (Lightness)	BP.Ni.1.160, K.Ni.900-902
	Ruksh (Dry)	K.Ni.1.900-902
3.	**Virya -** Ushna (Hot)	CS.Si.11.13, K.Ni.1.900-902, BP.Ni.1.160, R.Ni.8.68, D.Ni.1.190
4.	**Vipaka -** Katu (Pungent)	CS.Si.11.13

Table 5: Classical Therapeutic Indications of *Madanphala*

SN	Therapeutic Indications	References
1.	Udaavarta (Upward movement of gases)	CS.Su.2.12, SS.U.55.51
2.	Vibandh (Constipation)	CS.Su.2.12
3.	Kushtha (Skin disorders)	CS.Su.3.3, BP.Ni.1.160, K.Ni.1.901-902

4.	Jwar (Fever)	CS.Ci.3.228, K.Ni.1.900-902, D.Ni.1.191
5.	Prameh (Diabetes)	CS.Su.23.10
6.	Adhogami Raktapitta (Bleeding disorder)	CS.Ci.4.59,60
7.	Urustambh (Stiffness of thigh muscles)	CS.Ci.28.154
8.	In eight months of pregnancy	SS.Sa.10.6
9.	Garbhsang (Obstruction in labor)	SS.Sa.10.11
10.	Poisoning (Localized in stomach)	SS.Ka.1.41
11.	Dant Naadi (Tooth sinus)	SS.Ci.22.32
12.	Pittaj kaas (Pitta induced cough)	AH.Ci.3.26
13.	Aprapatan (Expulsion of placenta)	AH.Su.1.88
14.	Apasmaar (Epilepsy)	BS.59.39[16]
15.	Hrid roga (heart disease)	K.Ni.900-902
16.	Netra Roga (Disease of eyes), Raktaj Roga (Disease of blood), Medaj Roga (Obesity), and Kandu (Itching)	MP.Ni.3.109[17]
17.	Vidradhi (Abscess), Pratishyay (Coryza), Gulma (Abdominal lump)	BP.Ni.1.160, K.Ni.1.900-902, D.Ni.1.191
18.	Kushtha (Skin disease)	BP.Ni.1.160, K.Ni.1.900-902, MP.Ni.3.109
19.	Kapha (Kapha Dosha)	BP.Ni.1.160, K.Ni.1.900-902, R.Ni.8.68, D.Ni.1.191
20.	Anaha (Distension of abdomen due to obstruction)	BP.Ni.1.160, K.Ni.1.900-902
21.	Shotha (Inflammation)	BP.Ni.1.160,
22.	Vran (Wound)	BP.Ni.1.160, K.Ni.1.900-902, R.Ni.8.68
23.	Shofa (Oedema)	R.Ni.8.68, D.Ni.1.191

Collection and Preservation of fruits of *Madan* (*Randia dumetorum*): Classical Guidelines[3]

Time of Collection: In between *Vasant Ritu* (Spring season) and *Grishm Ritu* (Summer seasons), in *Maitri Muhurta* in *Pushya*, *Ashwini* or *Mrigasira* constellation.

Qualities of Fruits to be Collected: The ripe *Madanphala*, which is not empty from inside, which is not green, which has become yellow, which is not infested by insects, which is not rotten, which has not been eaten by insects, which is not too small in size.

Post-Harvest Processing: Clean the fruits, tie them in a bundle of *Kush* grass, plaster them with cow dung from above and place it in the bulk of any one of these like barley husk, *Urad, Kulthi*, paddy or *Moong* for eight days and nights. After this, when the *Madanphala* becomes soft, then take them out. At this time a pleasant smell like honey starts coming from those fruits, then take them out and dry them.

When they are well dried, take out the *Phal Pippali* (Seeds) from fruits, grind seeds with ghee, curd, honey and *Tila Kalk* and dry them again. After drying, fill this powder in a new earthen pot from which sand, dust etc. have been cleaned, up to the neck, cover it well and hang it in the window and keep it safe (CS.K.1.13).

Significance of *Samskara* of *Madanaphala*[18]

It has already been proved clinically that unprocessed *Madanaphala* resulted in *Pratiloma Pravrutti* (Diarrhea) when given for *Vaman*, whereas processed did not show any *Pratiloma Pravrutti.* No where the active principle or the bio-marker responsible for the emetic action of *Madanaphala* is mentioned. Qualitative and quantitative phytochemical analyses of processed and unprocessed seeds of *Madanphala* revealed that unprocessed drug had higher levels of oleanolic acid and saponin, tannin, and phenol. In contrast, the processed sample (*Samskarit*) had lower levels of phenol, oleanolic acid, tannin, and saponin. Studies report that saponins on contact produce a generalized irritation of the mucous membranes producing sneezing, vomiting and irritation. Therefore, we may infer that reduction in the saponin content after *Samskara* might have resulted in the reduced intensity of initiation and completion of *Vamana* and absence of *Pratiloma Pravrutti*.

Classical Formulations of *Madanphala*: *Triphlaadi Kwath* - *Santarpanjanya Roga* e.g. Diabetes (CS.Su.23.10), *Aaragvadhaadi Niruh Basti*, *Patoladi Niruh Basti* and *Patoladi Anuvasan Basti*- *Jwarnashak* (Antipyretic) (CS.Ci.3.245,241,252), *Pippalyaadi Lepa* (second) (CS.Ci.14.54), *Pippal-yaadi Anuvasan Basti- Arsha* (Piles) (CS.Ci.14.131),

Durlabhaadi Kshaar- increases strength in *Grahani* (Small intestine) (CS.Ci.15.180), *Mritsanjeevan Agad*- cures all type of poisioning (CS.Ci.23.56), *Bhaagaryaadi* oil - for *Nasya* in rhinitis (CS.Ci.-26.153), *Shaarengashtaadi Churna* - in *Urustambh* (spastic paraplegia) treatment (CS.Ci.27.33), *Bala Tail* - used in fever, cough, vomiting, epilepsy, all *Vata* disorders (CS.Ci.28.154), *Erandmooladi Niruh basti* - obstruction of urine, stool and gas, painful abdominal distension ,piles, IBS (CS.Si.3.39), *Punarnavaadi Niruh Basti - Tridoshaj Roga* (CS.Si.3.67), *Jeevantyaadi Anuvasan Yamak*- eliminates disorders related to urine, sperms and menstruation (CS.Si.4.9), *Madanphala Tail- Kaphajanya Roga* (CS.Si.4.17), *Aanah Varti* - used in *Vataj, Mutraj* and *Purishaj Udavart* (Reverse movement of gases, urine and stool) (SS.Ci.14.12), *Vidangaadi Tail* - used in oily enema to treat gout, diabetes ,piles (SS.Ci.37.40), *Shampaakaadi Aashthapan Basti* - obstruction of urine, stool & gas, destroys *Vata* & *Kapha*, strengthens muscles (SS.Ci.38.44), *Koshaatakaadi Kalpa* - used in non-oily enema for the treatment of low digestive fire & *Kaphaj* disorders (AH.Ka.4.18), *Yaapnabasti* (AH.Ka.4.38), *Yaman Sneha*- Destroys *Vata-Pitta*, increases strength, semen, gastric fire, destroys problem related menstruation & sperms*, Saindhavaadi Tail* -given in *Anuvasan Basti,* cures spleen disorders, *Udavart,* cough (AH.Ka.4.59,62), *Goshringaadi Dhoop* – medicinal smoke for fever (AH.U.3.55), *Madhukaadi* oil – piles, & skin disorders (AH.U.28.35), *Pippalyādi Taila*- in anorectal disorders. (AH.Ci.8.89)

Phytochemistry of *Madanphala*

Randisoide-A**[19]**, dumetoronin A, B, C, D, E, F**[20]**, ursosaponin which on hydrolysis gives ursolic acid**[21]**; triterpene saponins: 3-0-[B-D-xylopyranosyl] oleanolic acid**[22]**, 3-0-[B-D-glucopyranosyl-(1-3)-B-D- galactopyranosyl) oleanolic acid. 3-0-[B-D-glucopyranosyl-(12)-β-D-glucopyranosyl-(1-3)-B-D-galactopyranosyl oleanolic acid, 10-methylixoside**[23]**, 3-0-10-B-D-glucopyranosyl-(1-4)-0-B-D glucopyranosyl-(1-3)-(B-D-glucuronopyranosyl)] oleanolic acid, 3-0-[0-B-D-glucopyranosyl-(1→6) 0-B-D-glucopyranosyl-(13)-(B-D-glucuronopyranosyl)] oleano -lic acid, 3-0-10-B-D-glucopyranosyl- (1+2)-(B-D-glucopyranosyl)] oleanolic acid, 3-0-10-B-D-glucopyranosyl-(1-3)-(β-D- glucuronopyranosyl)] oleanolic acid, 3-0-10-B-D-glucopyranosyl-(1-3)-(B-D-glucopyranosyl)] oleanolic acid (randianin)**[24, 25]**, 3-0-[B-D-glucopyranosyl] oleanolic acid, 3-0-[B-D-glucuronopyranosy!] oleanolic acid.**[25]**

Pharmacological activities

1. Antibacterial activity: Various extract of fruit powder of *dumetorum* screened for antibacterial activity against E. coli, B. subtilis, S. aureus and S. typhi by disc diffusion method on nutrient agar media using Amoxycillin 100ug/ml as standard reflected that methanolic fruit extract exhibited antibacterial activity towards both gram positive and gram-negative bacteria, highest activity being against E. coli and least against S. aureus.**[26]**

2. Anti-Allergic and Anti-inflammatory activity: *Randia dumetorum* is used in treatment of Asthma (*Tamak Shwasa*), Rhinitis, cold, pain etc. Extract and its fractions significantly inhibited leucocytosis and eosinophilia in mice. The crude methanol extract of fruit of *Randia dumetorum* effectively reduced the carrageenin induced oedema in hind paw of the rats, significant reduction in granular tissue formation was recorded.**[27]**

3. Antioxidant and Hepatoprotective activity: The methanol extracts of *dumetroum* leaf and bark evaluated for *in vitro* antioxidant activity exhibited good antioxidant activity in terms of reducing power assay, total antioxidant assay and DPPH (1,1-diphenyl-2-picrylhydrazyl) radical scavenging assay. *Randia dumetroum* leaf and bark methanol extracts at 400 mg/kg protects against CCl_4 induced hepatotoxicity by reversing all the abnormal parameters to significant levels.**[28]**

4. Immunomodulatory activity: The immunomodulatory activity of *dumetorum* was evaluated by various extracts (Methanol, petroleum ether, chloroform, and ethyl acetate) on mice for their effects on humoral and cell-mediated immunity. The chloroform extract, particularly at 100 mg/kg, significantly enhanced the humoral antibody response and delayed-type hypersensitivity (DTH). In the cyclophosphamide-induced mylo-suppression paradigm, this fraction also increased the total WBC level at a dosage of 100 mg/kg ($p < 0.001$). The only immunity impacted by petroleum ether and methanol fractions was cell-mediated immunity.**[29]**

5. Cardioprotective activity: Ethanolic extract of fruits of *dumetorum* exhibited cardio-protective activity against doxorubicin induced cardiotoxicity. The extract offered wide range of protection through control of hemodynamic parameters, modulation of various markers,

Imparting antioxidant action and thereby improvement in histopathology as well showing potent cardioprotective activity against doxorubicin induced cardiotoxicity.**[30]**

6. Other Activities: Cardiac Stimulant and Depressant, Hypotensive and CNS Depressant, Anthelmintic, Antidiarrheal, Antipyretic, Anti-ovulatory, Anticancer, Insecticidal, Antifungal, Antiviral and Antipyretic activities have also been reported in *Randia dumetorum*.**[31]**

Toxicity Studies

1. Toxicological study of *Randia dumetorum* seeds in wistar albino rats: A single exposure to the medicine did not result in any toxicity or death during acute toxicity. After 14 days, there was a brief rise in SGOT and SGPT levels before they returned to normal. A hematological analysis showed a considerable drop in hemoglobin levels along with a corresponding drop in packed cell volume and total red blood cell count. In comparison to the control, biochemical analyses showed a rise in SGOT and SGPT levels as well as a fall in creatinine levels. On histological investigation, the important organs showed no significant morphological alterations. These observations reaffirm the Ayurvedic conviction that the drug is "*Anapāyi* (CS.Ka.1.13)" i.e. relatively non harmful. **[32]**

2. Cytotoxicity of *Randia dumetorum* leaf extract: The study on *R. dumetorum* leaves revealed the presence of various phytochemicals like glycosides, flavonoids, and phenolic compounds, while alkaloids and proteins were absent. All extracts demonstrated notable antioxidant activity, methanol and water extracts showed significant cytotoxicity (LC_{50} = 1.07 µg/ml) compared to DMSO (Dimethyl Sulfoxide). These findings suggest that *R. dumetorum* leaves may serve as a potential source of antioxidants with mild cytotoxic properties.**[33]**

3. Toxicity of Methanolic Extract of Fruits of *Catunaregam spinosa* (Rubiaceae) on Zebra Fish (*Danio rerio*) Embryos: A study exposing *Danio rerio* embryos to *dumetorum* fruit extract—which contains dumetoronins—observed concentration-dependent mortality and developmental deformities. The LC_{50} for embryo lethality was approximately 19.5 mg/L. This indicates significant embryotoxic and teratogenic potential at higher concentrations.**[34]**

4. Stupefying activity of fruit of *Randia dumetorum*: Chemical responsible for fish poisoning present in *Randia dumetorum* (*Madanphala*) is randianin, a hemolytic triterpenoid saponin found in fruit. The saponins, including dumetoronins A to F, also contribute to plant's fish-poisoning properties. **[35]** Kulakkattolickal et al. (2019)**[36]** conducted toxicity screening on fish using aqueous extracts of ripe *Catunaregam spinosa* (Synonym *Randia dumetorum*) fruit. They observed high toxicity to grass carp (*Ctenopharyngodon idella*) and air-breathing predatory species (*Ophiocephalus punctatus*, *Clarias batrachus*, *Heteropneustes fossilis*) with LC_{50} values between 0.02–0.04% within 2 hours. In their lab tests, a 5-hour LC_{50} of just 0.0036% (w/v) was recorded for *fossilis.*

Results

Randia dumetorum (*Madanphala*) has been thoroughly reviewed and investigated, results of contemporary phytochemical and pharmacological research support multifaceted understanding of its significance as a classical emetic (*Vamak Dravya*) in Ayurveda. Known for its function in *Vaman Karma* (Therapeutic emesis), *Madanphala* falls under *Vamak Dravya* category and is referred in reputed texts like Charak Samhita, Sushrut Samhita and Ashtang Hridya. It is acknowledged as most effective medication in *Agrya Prakaran* for causing therapeutic enema and emesis (CS.Su.25.40). Emphasized for being non-toxic, safe, and generally free of negative reactions when processed properly (CS.Si.11.13). It is driven by qualities such as *Ushna, Tikshna, Sukshma, Vyavayi* & *Vikasi* which ensure liquefication, breakdown, and evacuation of *Doshas* via oral route. It has pharmacological activities such as Anti-inflammatory, antibacterial, anti-allergic and immunomodulatory, antioxidant, anthelmintic, central nervous system depressant, cardiac stimulant, anticancer, antifungal, & antiviral. Reduced quantities of phenolics & saponins were found in processed *Madanphala*, which helped to moderate emetic reaction & minimize adverse effects. *Samskara* alters drug's potency & safety profile while utilizing contemporary analytical evidence to support traditional methods.

Conclusion

Madanphala (*Randia dumetorum*) is principally recognized for its potent emetic (*Vamak*) properties.

It is considered to be one of best drugs for *Shodhana* therapy, especially *Vamana Karma* (Therapeutic emesis). Present review reveals that it has also been indicated for treatment of various other disease conditions. Pharmacological properties of this important drug described in classical texts of Ayurveda have been substantiated through evidences from modern pharmacological studies. Properties of *Madanphal Anapayitvata* (non-harmful), *Ushna*, *Tikshna*, and *Sukshma Gunas*, it has demonstrated both safety and therapeutic precision, making it an ideal drug toinduce therapeutic emesis without any serious adverse effects. The significance of *Samskara* (Processing) of drug has been established by comparative phytochemical analysis of purified and non-purified fruits. This is a major evidence to substantiate wisdom of Ancient Sages of *Ayurveda* in elimination and controlling probable adverse effects of drugs due to presence of some noxious substances. Furthermore, modern research corroborates its Anti-inflammatory, Antimicrobial, and stress-modulating actions substantiating classical claims and traditional uses. Thus, therapeutic utilization of *Madanphal* since long for in *Ayurveda* may be considered as an example of deep undertanding of its toxic nature and processing of dug to minimize its toxicity. There appears a need of further studies to towards exploration of this important plant based drug with utilization of modern scientific tools to re-establish therapeutic utility of *Madanphal.*

Abbreviations Used

CS. - Charak Samhita, SS. - Sushruta Samhita, AH. - Astang Hridaya, Sg.S - Sharagndhar Samhita, BS. - Bangasen Samhita, MP.Ni. - Madanpal Nighantu, D.Ni. - Dhanvantari Nighantu, K.Ni. - Kaiyadev Nighantu, BP.Ni. - Bhavprakash Nighantu, R.Ni. - Raj Nighantu, Su. - Sutra Sthan, Ni. – Nidana Sthana, Vi. – Vimana Sthana, Sa. – Sarir Sthana, Ci. – Cikitsa Sthana, Ka – Kalpa Sthana, Si. - Siddhi Sthan, U. – Uttar Tantra/Uttar Sthan.

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