



CHAKRAMARDA (*CASSIA TORA LINN.*) – A LITERATURE REVIEW

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ABSTRACT:-

Chakramarda commonly known as *chakavad* in Hindi and Ring worm plant in English, a drug has been used by Ayurvedic physicians, for the management of various diseases such as ringworm, eczema, psoriasis etc. *Chakramarda* is a well-known plant widely distributed in India. It is an annual shrub and grows in wild wasteland. Different parts of plant like leaves, seed, and root are reputed for their medicinal values. Seeds have anti parasitic properties, the paste of seeds are applied topically on ringworms and scabies. Both leaves and seeds constitute a valuable remedy in skin disease chiefly for ringworm and itching. The root of plant is used as a bitter tonic, stomachic, purgative and anthelmintic properties. The decoction of whole plant is given as a vermifuge and purgative and also used for washing and healing of wound. The paper is an attempt to collect and explore the information related to *chakramarda* from various available *grantha* popularly known as *Samhitas*, *Ras Granthas* and *Nighantus*. In this article, summarization of the various synonyms, morphological properties, pharmacological activities, uses is attempted. The review indicates that this drug has wholesome references in various ancient and modern texts.

Keywords: - *Chakramarda*, Traditional & Ethano-medicinal uses, Pharmacological activities.

INTRODUCTION:

Vedas, *Samhitas*, *Nighantus* and *Sangraha Granthas* are the source of information of the drugs obtained from natural origin in Ayurveda¹. *Chakramarda* has been used from time immemorial. The botanical source of the plant is *Cassia tora Linn.* of the Fabaceae family i.e., *Shimbi kula*. *Chakramarda* is well known medicinal plant commonly found in India and other tropical countries. Various medicinal properties have been attributed to this plant in traditional system of Indian medicine.

Chakramarda plant is easily available in all regions of India especially in rainy seasons. It is found as in roadsides wastelands. It has *katu rasa*, with *katu vipak*, and *ushna virya*. This plant is being *laghu*, *ruksha* in *guna* and *doshghanta* is *kaphavatshamak*². In *Ayurveda Samhita*, *Chakramarda* is said to be very useful in many disease like *Kushta*, *krumi*, *Dadru* etc.

Chakramarda have been used as a remedy for various skin ailments, rheumatic disease and as laxatives. The leaves are used as a laxative in the form of decoction also used for the treating piles³ and used as a vegetable in rainy season. A *Chakramarda leaf* has been found to possess significant hepatoprotective activity and anti-inflammatory activity. Due to presence of proteins, a small amount of fat, many minerals and natural fibers, it is regarded as a poor man's food⁴.

The seeds of *chakramarda* have been used in Chinese medicine as aperients, antiasthma, diuretic agent and also improve the visual activity⁵. In Japanese pharmacopoea, *chakramarda* seeds are used as tonic and stomachic used for ringworm and other skin disease⁶.

Geographical Distribution⁷:-It is found as a weed throughout India, ascending up to an attitude of 1550 m in Himalaya, universely distributed in wild state in Himachal Pradesh, Bihar, and Orissa, Bengal, Punjab, Rajasthan, on waste lands and along road side of, Maharashtra, Karnataka and plains of Tamilnadu

Morphology⁸:-It is an annual foetid herb, 30-90 cm high. Leaves are green in colour. Leaflets are in 3 pairs, distinctly petioled, opposite, conical at one end, ovate, oblong and base oblique. Flowers are pale yellow in colour usually in nearly sessile pairs in the axils of the leaves with five petals, upper one are very crowded. Pods are subteret or 4 angled, very slende, 6-12 inch long, incompletely septate, membranous with nymorous brown oblong rhombohedral seeds⁸.

Cassia tora linn. has following Taxonomical classification⁹:-

1. Kingdom	:-	Plantae
2. Sub Division	:-	Tracheobionta
3. Division	:-	Spermatophyta
4. Class	:-	Magnoliopsida
5. Subclass	:-	Rosidae
6. Order	:-	Fabales
7. Family	:-	Fabaceae/Leguminosae
8. Genus	:-	Cassia Mill.- senna
9. Species	:-	<i>Cassia tora</i>

MATERIALS AND METHODS:-

To elaborate the potential of *chakramarda* in the treatment, review of literature is an essential part. Available *Ayurvedic* literatures were studied for better understanding of drug. Information regarding to drug is collected from various books related medicinal plants, *Samhitas*, *Nighnatu*s, *Ayurvedic* text books, various journals, research articles and internet media was also used for availability and necessity for understanding the subject.

Table 1¹⁰:- Synonyms attributed to *chakramarda* by different classical texts of *Ayurveda*

Pharmacognostical characters	
<i>Meshlochan</i>	Leaf resembles of eyes of <i>mesha</i>
<i>Uranakhya</i>	The seeds are similar to sambar's eye
<i>Dadrubeej</i>	Seeds are very hard in nature
Synonyms based on pharmacological actions	
<i>Edgaj</i>	Ringworm
<i>Dadrughna</i>	Cures <i>dadru</i>
<i>Chakri</i>	Destroyed Ringworm
<i>Kharjughna</i>	Cures <i>kandu</i> and <i>Dadru kushta</i>
<i>Kushtaghna</i>	Used in treatment of <i>kushta</i>

<i>Pamagati</i>	Used in treatment of <i>pama</i>
<i>Chakramarda</i>	Cures ringworm infestation
Others	
<i>Edagaja</i>	It is very delicate herb and even goats can spoil them if they move in the areas where there plants are available. Hence, similar is made that even a goat is as good as an elephant for this plant
<i>Prapunnat</i>	It is often used by human beings for different purposes internally.
<i>Padmat</i>	It affectionate water like <i>Padma</i> and grows in rainy season

CLASSIFICATION:-**Vedic kala¹¹:-**

Chakramarda explained in *parskargruhyasutra (Pa. Gru.)* in *Mulvidhi* chapter.

Purana kala¹²:-

In *Garuda Purana*, a separate chapter is available for medicinal plants but no description about *chakramarda* is available

Samhita kala:-

In *Charak Samhita*, *chakramarda* included in *shakavarga*, it is used as a vegetable¹³.

In *Sushrut Samhita*, it was included in *urdwabhagahara gana*¹⁴.

In *Ashtanga Hridaya*, the word *chakramarda* is not found, but in many places used its synonyms like *edgaja* and *prapunnada*. It is explained in *shiroroga adhikara* and its *lepa* are advised in *shiroroga*¹⁵.

Nighantu kala:-**Table no. 2:-**

<i>Nighnatu</i>	<i>Varga</i>
<i>Ashtanga nighnatu</i> ¹⁶	-
<i>Dhanawantari nighantu</i> ¹⁷	<i>Karaviryadi varga</i>
<i>Shodhal nighantu</i> ¹⁸	<i>Karaviryadi varga</i>
<i>Madanpal nighnatu</i> ¹⁹	-
<i>Kaiyadev nighantu</i> ²⁰	<i>Aushadhi varga</i>
<i>Bhavaprakash nighantu</i> ²¹	<i>Haritakyadi varga</i>
<i>Raj nighantu</i> ²²	<i>Shatahvadi varga</i>
<i>Nighnatu ratnakar</i> ²³	-
<i>Shaligram nighantu</i> ²⁴	<i>Ashtavarga</i>

<i>Priya nighantu</i> ²⁵	<i>Shatapushpadi varga</i>
<i>Nighnatu adarsh</i> ²⁶	<i>Putikaranjadi varga</i>

PHARMACOLOGICAL PROPERTIES

Table 3:- Pharmacological properties attributed to *chakramarda* in different *nighantus*

<i>Nighantu</i>	<i>Rasa</i>	<i>Vipaka</i>	<i>Veerya</i>	<i>Guna</i>	<i>Doshghnata</i>	<i>Rogghanta</i>
<i>Ashtanga nighnatu</i> ²⁷	-	-	-	-	-	-
<i>Dhanawanatari nighantu</i> ²⁸	<i>Katu</i>	-	<i>Ushna</i>	-	<i>Vatakaphaghna</i>	<i>Kandu, dadru</i>
<i>Shodhala nighnatu</i> ²⁹	-	-	-	-	-	-
<i>Madanpal nighnatu</i> ³⁰	-	-	-	-	<i>Vatapittaghna</i>	-
<i>Kaidev nighnatu</i> ³¹	<i>Madhura and lavana</i>	-	<i>Sheeta</i>	<i>Laghu, guru, ruksha</i>	<i>Vatakaphaghna</i>	<i>Kandu, gulma, kas</i>
<i>Bhavprakash nighantu</i> ³²	<i>Katu</i>	-	<i>Ushna</i>	-	-	-
<i>Raj nighantu</i> ³³	-	-	-	-	-	-
<i>Nighnatu ratnakar</i> ³⁴	<i>Madhura</i>	-	-	<i>Laghu, Ruksha</i>	<i>Pittavataghna</i>	
<i>Shaligram nighnatu</i> ³⁵	<i>Katu</i>	-	-	<i>Sheet</i>	<i>Vatapittaghna</i>	<i>Kushta, kandu, krumighna</i>
<i>Priya nighantu</i> ³⁶	-	-	-	-	-	<i>Kandu, dadru</i>
<i>Nighnatu adarsh</i> ³⁷	<i>Madhura and Katu</i>	<i>Katu</i>	<i>Ushna</i>	-	<i>Vatakaphaghna</i>	

FORMULATION:-

Table 4:-

Sr. no.	Ayurvedic text	Synonyms	Rogadhikara	Dosage form
1	<i>Charak Samhita</i>	<i>Edagaja</i>	Skin disease, piles, ringworm ³⁸	External use
			Skin disease ³⁹	External use
			<i>Mandala kushta, krimi, kandu</i> ⁴⁰	<i>Kanaka kshiri tail</i>
			Worms, <i>dadru, shvitra</i> ⁴¹	External use
		<i>Prapunnad</i>	Skin disease ⁴²	External use
			<i>Kushta</i> ⁴³	External use
2	<i>Sushrut Samhita</i>	<i>Prapunnad</i>	<i>Shvitra</i> ⁴⁴	<i>Lepa</i>
			<i>Mahakushta</i> ⁴⁵	<i>Kwath</i>
		<i>Chakramarda</i>	<i>Dadru</i> ⁴⁶	<i>Lepa</i>
3	<i>Bhavprakasha</i>	<i>Chakramarda</i>	<i>Kandu, mandal kushta</i> ⁴⁷	<i>Madhyamanjishtadi kwath</i>
			<i>Kandu kushta</i> ⁴⁸	<i>Mahamarichyadi tail</i>
			<i>Pama, kandu</i> ⁴⁹	<i>Saindhavadi tail</i>
			<i>Dadru, kushta</i> ⁵⁰	<i>Durvadi yoga</i>
		<i>Prapunnad</i>	<i>Shitapitta</i> ⁵¹	<i>Churna</i>
4	<i>Yog Ratnakar</i>	<i>Chakramarda</i>	<i>Kushta</i> ⁵²	<i>Panchanimba churna</i>
			Severe itching ⁵³	<i>Lepa</i>
			<i>Pama, charmadala, vicharchika</i> ⁵⁴	<i>Lepa</i>
			<i>Pama kandu</i> ⁵⁵	<i>Lepa</i>
			<i>Kushta, complexion</i> ⁵⁶	<i>Brihatsindura taila</i>
			<i>Pama, charmadala, vicharchika, Kushta</i> ⁵⁷	<i>Maheshwar ghrut</i>
		<i>Edgaja</i> ⁵⁸	<i>Kushta</i> ⁵⁹	<i>Lepa</i>

			Spider bite, <i>dadru</i> , <i>kushta</i> , <i>gajakarna</i> ⁶⁰	<i>Lepa</i>
		<i>Prapunnata</i> ⁶¹	Sinus, infected wound ⁶²	<i>Vajra taila</i>
			<i>Dadru</i> , <i>Pama</i> , <i>Kitibh</i> ⁶³	<i>Lepa</i>
			<i>Dadru</i> ⁶⁴	<i>Lepa</i>
5	<i>Rasaratna Samuchaya</i>	<i>Chakramarda</i> ⁶⁵	<i>Shweta Kushta</i> , <i>Kandu</i> , <i>krumiroga</i> ⁶⁶	<i>Mahamartand Taila</i>
6	<i>Bharat Bhaishjya Ratnakar</i>	<i>Chakramarda</i> ⁶⁷	<i>Vatarakta</i> , <i>Kandu</i> , <i>Mandal</i> , <i>all Kushta</i> ⁶⁸	<i>Mahatrunak Taila</i>
			<i>Vatarakta</i> , <i>Granthivata</i> , <i>Aamvat</i> , <i>Bhagandar</i> , <i>Arsh</i> , <i>all Kushta</i> ⁶⁹	<i>Mahapind Taila</i>
			<i>Kushta</i> ⁷⁰	<i>Trunak Taila</i>
		<i>Prapunnat</i> ⁷¹	<i>Kandu</i> ⁷²	<i>Prapunnatadi Lepa</i>

CHEMICAL COMPOSITION⁷³

Table 5:-

SN	Plant parts	Chemical composition
1	Leaves	1) Anthraquinone glycosides 2) Flavonoids 3) Sennosides 4) Kaempferol-3-diglucoside
2	Seeds	1) Anthraquinone 2) Naphthopyrone 3) Three naphthopyrone glucoside 4) Cassiaside 5) Chrysophanic acid-9-anthone
3	Seed oil	1) Oleic 2) Linoleic 3) Palmitic 4) Stearic 5) Lignoceric acids

4	Panwar gum (obtained from seeds of cassia tora)	1)Neutral of heteropolysaccharide of galactose 2)Mannose
5	Pods	1)Sennoides
6	Flowers	1)Kaemferol 2) Leucopelargonidine
7	Roots	1)Leucopelargonidine 2) β -Sitosterol
8	Stem	1)Arachidic acid 2)Isostearic acid 3)Palmitic acid 4)Marginic acid 5)Behenic acid

SUBSTITUTION & ADULTERATION OF CHAKRAMARDA:-

- 1) *Cassia occidentalis* Linn. is sometimes used as substitute for *Cassia tora* on account for linguistic similarity in regional names. *Cassia tora* seeds are used as substitute for coffee⁷⁴.
- 2) *Bakuchi* (*Psoralea corylifolia*) seeds substituted with *Chakramarda* seeds (*Cassia tora* Linn.)⁷⁵
- 3) Adulteration of *chakramarda*:- Leaves of *Cassia tora* linn. resembles with the leaves of *Senna*, therefore sometimes the true *senna* is adulterated with the leaves of this plant⁷⁶.

TRADITIONAL USES⁷⁷:-

Different parts of *chakramarda* are known to possess various ailments by rural and tribal people of Satpura region of Madhya Pradesh along with its uses in *Ayurvedic* and Chinese system of medicine. Due to its moist quality and cold property of herb, it acts on liver and large intestine channels, clear the heat and liver fire, improve vision. Due to its fungicidal activity, it is also used as natural pesticide in organic farms. Seed powder is most popular in pet food industry and also useful in mining and other industrial application when mixed with guar gum.

CLASSICAL USES OF CHAKRAMARDA:-

Table 6:-

1	Sidhham kushta	For Local application- used root of <i>chakramarda</i> with kanji ⁷⁸
2	Shiroroga	The seeds of <i>chakramarda</i> with amla dravya. and applied locally ⁷⁹ .
3	Gandamala	1)Make a kalka of the root of <i>chakramarda</i> and cook it with soft flame in <i>Bhringarajaswarasa</i> and <i>sarshapa taila</i> . Then filter it and put <i>sindur</i> . This <i>siddha</i> oil cures <i>gandamala</i> ⁸⁰ 2) <i>Chakramarda</i> tailam ⁸¹

4	Dadru	Seeds of chakramarda with leaves of radish are apply on dadru ⁸²
5	Shoth and visphota	Chakramarda swaras can be used in shoth and visphota caused by bhallataka ⁸³
6	Pama	Chakramarda seeds pounded with takra and apply on pama ⁸⁴
7	Teething time	At the time of teething, chakramarda leaves kwath given to children for strength ⁸⁵
8	Kushta ⁸⁶	<ul style="list-style-type: none"> Chakramarda, Vidanga, Haridra, Daruharidra, Aragvadha and Kushta this combination is excellent for eradicating kushta external application of chakramarda, sarjarasa etc. Mixed with sour gruel is remedy for sidhma type of kushta seeds of chakramarda, with equal quantity of jiraka and a bit of sudarshan root destroy ringworm and kushta
9	Vatavyadhi ⁸⁷	Vegetable or other dietary preparations of chakramarda leaves alleviates vatavyadhi.
10	For Easy delivery ⁸⁸	The root of chakramarda is pounded finely and put into the vagina. It helps easy delivery.

ETHANOMEDICAL USES⁸⁹:-

Table 7:-

1)	Eczema	Root of <i>chakramarda</i> used for local application on eczema
2)	Warts	In warts, applied paste of <i>chakramarda</i> leaves for 7 days
3)	Ringworm	Mixed swaras of <i>chakramarda</i> leaves with lemon juice and apply it on ringworm
4)	<i>Somaroga</i> / vaginal discharge	<i>Chakramarda</i> root grind with rice water and used in <i>somaroga</i>
5)	Migraine	Pounded Seeds of <i>chakramarda</i> with <i>kanji</i> and applied locally
6)	<i>Vasa meha</i>	<i>Chakramarda</i> root kwath used for <i>vasa meha</i>
7)	<i>Shitpitta</i>	In <i>shitpitta</i> , <i>Chakramarda</i> seeds powder with <i>ghruta</i> used.

PHARMACOLOGICAL ACTIVITIES⁹⁰:-

1) **Antioxidant activity**:- The methanolic extract of seed of *chakramarda* shows stronger antioxidant activity.

2) **Antifertility activity:-** *Chakramarda* leaves extract exhibited maximum antifertility activity in 1 female rats. The antifertility activity of the drug has been found to be related to oestrogenic activity.

3) **Antigenotoxic properties:-**

Antifertility properties and the possible mechanism of water extracts from *cassia tora* treated with different degrees of roasting were evaluated by Ames Salmonella/microsome test and the comet assay.

4) **Antifungal activity:-**

The leaf extract has shown the significant antifungal activity to inhibit the growth of *Candida albicans*, *Aspergillus niger*.

It shows antifungal activity due to chrysofenol and chrysophanic acid-9-anthrone and other anthraquinones such as emodine, physcion and rhein.

5) **Anti-inflammatory effect:-**

The anti-inflammatory effect of methanolic extract of leaves of *Cassia tora* was investigated against carrageenan, histamine, serotonin and dextran induced rat hind paw oedema. It exhibited significant anti-inflammatory activity against these agents.

6) **Purgative effect:-**

The methanolic extract of *Cassia tora* leaves was found to possess purgative action. Seed have been used as a purgative, probably due to the presence of emodine, aloe-emodine and anthraquinone glycosides.

7) **Anti-microbial activity:-**

The chloroform, methanol and aqueous extracts of leaves of *Cassia tora linn* observed to have antimicrobial property. As the extracts displayed activity against some bacteria and fungi which can cause skin infection and gastro-intestinal disorder. Methanolic extracts also showed antifungal activity.

RESULT AND DISCUSSION:-

There are many references about the use of the plant *chakramarda*, as medicine in the *veda* and as *Samhita granthas* of *Ayurveda*.

In *Ayurveda*, different traditionally used names, known as *Paryaya* (synonyms) have been attributed to a single plant to describe morphological description habitat and pharmacological characters. There are about 25 synonyms attribute to *chakramarda* to describe its morphological and pharmacological characters are available in various classical texts of *Ayurveda* written during different time.

Many of the *Acharyas* of *Ayurveda* has described the *Rasa* of *Chakramarda* as *Katu*, exceptionally *Nighantu Ratnakara* has described it as *Madhura* only and *Nighantu Adarsha* described it as *Madhura* and *Katu*. Only *Nighantu Adarsha* has explained the *vipaka* of the *Chakramarda* as *Katu*. No other *Nighantukara* have explained the *Vipaka* of the *Chakramarda*.

CONCLUSION:-

This article gives us the traditional knowledge about *chakramarda* with its properties and formulation being used in various conditions like *kushta*, fungal infection, *vatavyadhi* etc. Many investigations on *Cassia tora linn*. have now established that it has an important medicinal plant having a plethora of chemical constituents effective against a large number of ailments. So it is necessary to take clinical trials according to its studies carried out and the exploit the full medicinal potential of *Cassia tora linn*.

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