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REVIEW OF DARUHARIDRA IN CLASSICAL TEXTS

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ABSTRACT
Berberis aristata, commonly known as 'Daruharidra', is a renowned plant that has been utilized in various medicinal systems such as Ayurveda, Homeopathy, Unani, Chinese, and Allopathic for an extensive period. This versatile medicinal plant is employed either independently or in conjunction with other medicinal herbs to address a diverse range of ailments, including jaundice, leprosy, fever, rheumatism, and more. Belonging to the family Berberidaceae, it is characterized by its spinous, hard, and yellowish herbaceous nature. The plant's distribution spans sub-Himalayan regions, Sri Lanka, Bhutan, and the hilly areas of Nepal. Its historical significance as an herbal remedy extends over 2500 years, and it has played a crucial role in traditional medicine. One of its notable formulations, 'Rasont' acts as both a tonic and blood purifier, additionally used in the treatment of ulcers and ophthalmic diseases. Numerous reported clinical and experimental studies highlight the plant's diverse pharmacological properties, including antimicrobial, anti-inflammatory, analgesic, antipyretic, hepatoprotective, immunomodulatory, and cardiotonic activities. The wealth of therapeutic attributes associated with Berberis aristata underscores its importance in the realm of natural medicine.

KEYWORDS- *Daruharidra, Antidiabetic, Rasapanchak, Ayurveda, Berberine.*

INTRODUCTION

Medicinal herbs have a significant historical record of being employed to address a variety of ailments. India stands out among the nations that have cultivated a diverse range of medicinal plants and is often referred to as the "Botanical Garden of the World." These medicinal plants play a crucial role in the discovery of new drugs globally. Many of the drugs currently in use incorporate herbal components derived from plants. An example is *Berberis aristata*, known as *Daruharidra* in *Ayurveda*, which is a versatile medicinal plant utilized either independently or in combination with other medicinal plants to treat liver disorders, skin conditions, and allergic reactions.

BOTANICAL DESCRIPTION

Berberis aristata is a vertically growing, spiny herb with a smooth surface. The plant typically reaches a height of 2 to 3 meters and has a sturdy, woody structure. The bark is yellow to brown on the outside and yellow on the inside. The thorns, resembling modified leaves, are three-branched and 1.5cm in length, easily removable by hand in longitudinal strips.[1]

The leaves are arranged in clusters, numbering 5-8, and are spiny, simple, lanceolate, leathery, toothed, sessile, and verticillate. They measure 4.9cm in length and 1.8cm in breadth, displaying a light green color on the ventral surface and a deep green hue on the dorsal surface, characterized by reticulate pinnate venation.[2]

The flowers of *Berberis aristata* are yellow, complete, perigynous, hermaphrodite, and actinomorphic, arranged in racemose clusters with 11 to 16 flowers per raceme. The fully opened flower has an average diameter of 12.5mm. The calyx is polysepalous, comprising three small and three large sepals, each measuring 4 to 5mm in length. The yellow corolla is polypetalous, consisting of 6 petals.The androecium is polyandrous, featuring 6 stamens that are 5-6mm long, while the gynoecium, the female reproductive structure, is 4-5mm long and consists of a broad stigma and a short style. Flowering commences in mid-March and extends throughout the month of April.[3]

The fruit is edible, acidic, and succulent, having an ovoid to elliptical shape and a bright red color. The fruit measures approximately 7mm in length and 4mm in breadth, with a weight of about 227mg. Seeds are yellow to pink, range from 2 to 5 in number, weighing 25mg and occupying a volume of 29ml.

Phytochemicals in *Daruharidra*- Different chemical components are present in various parts of Daruharidra (Berberis aristata). One of the most significant alkaloids in the plant is berberine. The root bark of B. aristata contains various protoberberine alkaloids, including Karachine, dihydrokarachine, tetrahydropalmatine, tetrahydroberberine, epiberberine, palmatine, palmatine dehydrocaroline, jatrorhizine, columbamine, and palmatine chloride.[4] Additionally, alkaloids such as Aromoline, oxyberberine, berbamine, oxyacanthine, and

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berberine chloride are also extracted from the plant.[5] The bark of B. aristata is used to extract alkaloids such as pseudopalmatine chloride, pseudoberberine chloride, taxilamine, pakistanine, and 1-Omethylpakistanine.[6] In the flowers of the plant, polyphenolic flavonoids like quercetin, meratin, and rutin are present.[7] These diverse chemical components contribute to the plant's pharmacological properties and therapeutic potential.

Daruharidra in Ayurveda- *Ayurveda* is the oldest traditional medical system, and within its extensive repertoire, *Daruharidra* holds a paramount position. Referenced in ancient *Ayurvedic* texts such as *Charaka* and *Susruta Samhita*, as well as numerous *nighantus*, this herb is recognized for its multifaceted medicinal properties. It has been historically employed to address a diverse range of conditions, including dysentery, wound healing, skin ailments, inflammations, diarrhea, jaundice, menorrhagia, and eye disorders.

Sanskrit Name- *Pitadru, Kaleyak, Haridrav, Pachampacha, Kantakateri, Kamani, Hemakanti, Daruharidra, Pitadaru, Pitachandana, Karkatakini, Katamkati, Kanchani, Kamavati, Kastharanjani, Kusumbhaka, Krimihara, Darvi, Darunisha, Darupurba, Drabidabi, Nisha, Parjani, Parjanya, Pita, Pitaka, Poutika, Bishodhani, Swarnavarna, Stiraraga, Haridra, Haridru, Hemavarnavati, Hemakanta, Hemakranta, Hemakanti.*

Vernacular Names- Bengali-*Daruharidra;* Gujrati-*Daruharidra, Daruhlaadur;* Hindi-*Daruhaldi, Darhald;* Kannada-*Maradarishana, Maradarishina, Daruhaladi;* Malayalam- *Maramannal, Maramanjal;* Marathi-*Daruhalad;* Oriya-*Daruhalidi,* Punjabi-*Sumalu,* Tamil-*Gangeti,* Nepali-*Chutro. English*- Indian berberry, Tree turmeric, Termeric wood.

Classifications of *Daruharidra* in *Ayurveda*- *Daruharidra* is important medicinal plant in *Ayurveda* and have classifications on various *varga* as in table – **(Table no. 1)**

Name of the text	Classification under varga (grouping)	References
Charak samhita [8]	*Arshoghna, Kandughna, Lekhananiya*	*Sutra*-4/3,12,14; 5,60; *Viman*-7/17;8/143,150 *Chikitsha*-6/27, 28; 7/45, 60, 83, 90, 93, 96, 102, 113, 119, 135.139; 8/136; 14/160, 186,196, 221, 231, 234; 15/135,137; 16/53, 62, 72, 96; 26/52, 187, 190, 196, 197, 199, 200, 236, 241.
Sushruta samhita [9]	*Haridradi, Mustadi, Lakshadi*	*Sutra*-46/432; 38/27, 54; *Chikitsha*-2/69;5/42; 9/35; 18/18; 19/40; 11/8
Astanga Hridya [10]	*Arshoghna, Sirovirachana*	*Sutra*-15/4;20-38;22/19; *Saarir*-1/62; *Chikitsha*-8/103, 131; 9/58, 90; 10/35; 11/8; 12/6,7; 16-16, 43; 26/26; 37/73
Dhanvantari nighantu [11]	*Guduchhadi varga*	56-59
Kaiyadev nighantu [12]	*Aushadi varga*	1116-1117
Raj nighantu [13]	*Pipalyadi varga*	202
Bhavprakash nighantu [14]	*Haridradi varga*	201-205
Priya nighantu [15]	*Satapuspadi varga*	172-174
Nighantu adarsha [16]	*Daruharidradi varga*	6th *Varga*

Table 2: *Rasapanchak* of Daruharidra in different texts-

Name of text	*Guna*	*Rasa*	*Virya*	*Vipak*	*Doshakarma*	References
Dh.Ni.	*Ruksha*	*Tikta*	*Ushna*	-	-	*Guduchayadi varga:* 56-58
Ka. Ni.	*Ruksha*	*Tikta, Katu*	*Ushna*	*Katu*	*Kaphapittanashana*	*Aushadi varga:* 1116-1117
Bhav.Ni.	*Ruksha*	*Katu, Tikta*	*Ushna*	*katu*	*Kaphapittanashana*	*Hritakyadi varga*: 201-205
Pri.Ni.	-	*Tikta*	*Ushna*	-	*Kaphapittahara*	*Satapuspadi:* 172-174

(*Dh.Ni.- Dhanvantari nighantu, Ka. Ni.- Kaiyadev nighantu, Bhav.Ni.- Bhavprakash nighantu, Pri.Ni.- Priya nighantu)*

Karma (Action)-of *Daruharidra*-

Shothahara- Employed in the treatment of edema, Daruharidra demonstrates efficacy in reducing swelling.

Vedana Sthapan- Functioning as an analgesic, it alleviates pain.

Vrana Shodhana- Facilitating wounds healing, it contributes to the purification of wounds.

Pitta Sarak- With its impact on metabolism, it is utilized in addressing liver disorders, jaundice, and digestive and pancreatic issues.

Grahi- it is beneficial in the management of diarrhea and dysentery problems.

Rakta Shodhaka- Acts as a blood purifier, aiding in maintaining blood purity.

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Garbhashayashothahara- Improves uterine health and is employed in the treatment of pelvic inflammatory diseases.
Stravahara- Addresses issues related to abnormal discharge.

Guna (Properties) of Daruharidra *(B. aristata-)*
Lekhaniya- Aids in reducing toxicity and unnecessary fat in the body.
Kandughna- it is beneficial in the treatment of skin disorders
Arshoghna- Acts as an anti-hemorrhoidal agent.
Ropana- Exhibits properties that contribute to wound healing.
Twacha- it is useful in the treatment of skin diseases and finds applications in cosmetic products.
Stanyasodhana- Supporting the purification of breast milk.
Svedala- Promotes sweating, assisting in the elimination of toxins through perspiration.
Rasayana- Acts as a rejuvenating agent, contributing to overall well-being and vitality.

Table no. 3- Indications of Daruharidra in different texts

Indication	Dh.N.	M.N	K.N.	B.N.	R.N.	P.N.
Mukharoga	+	+	+	+	-	-
Netraroga	+	+	+	+	+	+
Karnaroga	+	+	+	+	+	-
Twakroga	-	-	+	+	+	-
Kandu	+	-	-	-	+	-
Shotha	-	+	+	+	-	-
Varna	+	+	+	+	+	+
Prameha	+	+	+	+	+	+
Yakritroga	-	-	-	-	-	+
Pandu	-	+	+	+	-	+
Raktavikara	-	-	-	+	-	+
Varnya	-	-	+	+	-	-
Visha	-	-	+	-	+	-
Visarpa	-	-	-	-	+	-

Table 4: Common Formulations of *Daruharidra* in *Ayurvedic* texts-

Name of text	Formulations	References
Charak samhita	*Phaltrikadi kwath*	Cha.Chi. 6/40
	Triphaladi Churna	Cha.Chi.7/68
	Madhvasav	Cha.Chi. 7/53
	Kanakksheeri tail	Cha.Chi. 7/111
	Kalyanak grita	Cha.Chi. 9/35
	Sidharthak Agad	Cha.Chi. 9/69
	Kanakarista	Cha.Chi.14/160
	Kiratatiktadya churna	Cha.chi.15/137
	Mandura vataka	Cha.chi.16/73
	Punarnava mandura vataka	Cha.chi. 16/93
	Dravadi leha	Cha.chi.16/97
	Vyoshadya ghrita	Cha.chi.16/119
	Mritsanjivani Agad	Cha.chi.23/16
	Peetak Churna	Cha.chi. 26/54
	Khadiraadi Gutika	Cha.chi. 26/206
Astanga Hridya	*Patoladi churna*	Ast.Hri.Chi.10/35
Chakradatta [17]	*Darvadi leha; Vyoshadya ghrita*	8/28; 8/56
	Trausanadya mandura	8/34
	Punarnava mandura	8/42
Sarangadhar samhita [18]	*Triphaladi swaras*	Sa.ma.1/9
	Punarnavadi kwath	Sa.ma.2/76
	Mandura vatak	Sa.ma.7.34
Bhav prakash Samhita [19]	*Punarnava mandura*	Bha.ma.chi.8/30
	Triushanadi mandura	Bha.ma.chi.8/50
	Astadashanga lauha	Bha.ma.chi.8/55

(**Sa.ma**.- *Sarangadhar samhita madhyam Khand*, **Bha.ma.chi-** *Bhav prakash Samhita Madhyam Khand)*

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CONCLUSION

Berberis aristata, commonly known as *Daruharidra*, stands as a notable medicinal plant with a rich history of use in *Ayurvedic*, Chinese, Unani, and other medicinal systems worldwide, dating back to ancient times. Traditional applications involve utilizing the plant as a tonic, demulcent, diaphoretic, diuretic, and alternative for the treatment of various ailments, including wound healing, skin diseases, rheumatism, snakebite, menorrhagia, jaundice, and eye problems.Clinical and experimental studies have shed light on the plant's chemical constituents, particularly berberine, showcasing a spectrum of pharmacological properties. These include anti-diabetic, anti-microbial, anti-cancer, antipyretic, hepatoprotective, ophthalmic, and cardiotonic activities. The wealth of therapeutic potential within this plant underscores its significant medicinal value.While the existing research provides promising insights into the use of Berberis aristata for treating a multitude of diseases and disorders, it is evident that further research and studies are essential to develop additional herbal and Ayurvedic formulations. The plant's versatility and historical efficacy make it a compelling subject for continued exploration and application in the realm of natural medicine.

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