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DARUHARIDRA (*BERBERIS ARISTATA DC.*) AN IMPORTANT AYURVEDIC MEDICINAL PLANT - A REVIEW

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Abstract

Herbal medicinal plants play an important role in the traditional system of medicine, they have been used since centuries in various health systems like Ayurveda, Siddha and Unani etc. Daruharidra botanically identifies as *Berberis aristata* is well known medicinal plant in Ayurveda which is used alone or in combination with other medicinal plants. This medicinal plant is very useful in skin diseases like skin inflammation and psoriasis and apart from this it is also used in various diseases like jaundice, splenomegaly, rheumatoid arthritis, fever, morning sickness etc. A major bioactive marker of this plant is berberine, which is known for its activity against cholera, acute diarrhea, amoebiasis and latent malaria and for the treatment of oriental lesions caused by *Leishmania tropica*. Although *Berberis aristata* is officially considered as Dahruharidra, review revealed that *B. asiatica*, and other species of *Berberis* like *chytria* are also taken under the name of Daruharidra. All the information about Daruharidra has been discussed in this review.

Keywords: Daruharidra, *Berberis aristata*, berberine, skin disease.

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Sanskrit Synonyms

Name	Cha.	Shu.	AH	DN	MN	RN	KN
Nisha			+			+	
Daruharidra	+	+	+	+	+	+	+
Darvi	+	+	+	+	+	+	
Kantkari			+	+	+	+	
Pachampacha				+		+	
Kalayak				+		+	
Pitadaru			+	+	+	+	
Haridrae		+	+				
Rajani		+	+	+			
Kaliyak			+	+		+	
Atha				+	+		
Kusumbhka				+			
Kantlanti							
Darunisha				+			
Pitchandana				+			
Daru			+				
Peeta				+			
Hemvkanti				+			

Cha – Charaka Samhita, Shu.- Sushruta samhita, AH- Astanga Hridaya, DN- Dhanvantari Nighantu, MN- Madanpala Nighantu, RN- Raj Nighantu, KN- Kaiyadeva Nighantu,

Introduction

Berberis aristata(DC.) commonly known as Daruhaldiand chitra belongs to the family Bereridaceae It is an evergreen shrub and widely distributed from Himalayas to Sri-lanka and hilly area of Nepal [1]. Daruharidra is an important medicinal plantand has been used in the indigenous system of medicine since a long time [2, 3, 4]. Fruit of this plant is edible and rich source of Vit-C. The root bark of this herb is rich in barberin and isoquinoline both chemical compound are anti-fungal, anti-bacterial, anti-oxidant, anti-viral, anti-diabetic, and anti-inflammatory in nature [5].

Vernacular Name [6, 7]

Sanskrit	Dirvi, Kata, Suvarnavarn
Hindi	Dahaldi, Daruhaldi
English	Indian beriberi, turmeric
Bangali	Daruharidra,
Gujarati	Daruhaladar
Kannada	Bagisutra
Malayalam	Maramanjil
Marathi	Daruhalad
Oriya	Daruharidra
Punjabi	Daruhalidi, sumalu
Tamil	maramanjil, Mullukala, Usikkala
Telugu	Kasturipushpa
Himachal Pradesh	Rasont, Kashmal
Nepal	Chitra, Chutra
Urdu	Darhald

Taxonomical Classifications [8]

Kingdom	Plantae
Division	Phanerogamea
Subdivision	Angiospermea
Class	Dicotyledonae
Subclass	Polypetalae
Order	Ranunculales
Family	Berberidaceae
Genus	Berberis
Species	aristata

Ayurvedic Classification of Daruharidra [9]

Charaka Samhita	Arshaghna Mahakashaya, Lekhaniya Mahakashaya, Kandughna Mahakashaya and Tikta skandha
Sushruta Samhita	Mustadigana, Laksadigana, , Haridradi gana and Tiktavarga
Astanga hridaya	Nasayagana, Vachadigana, Mustadi gana, Anjandigana

Habitat [10]

It is found in the temperate and sub-tropical regions of Asia, Europe, America, Nepal and Bhutan in India it has been found in Jammu& Kashmir, Himachal Pradesh and Uttar Pradesh an altitude range 2000-4000meter.

Botanical Descriptions

Habit- It is an erect spiny shrub about 6.6 to 9.8 feet in height, wood are hard and yellow, bark are yellowish to brown from outside and deep yellow from inside. The bark is covered with three branched thorns [11].

Leaves- The leave are arranged in tufts of 5 to 8 and are approximately 4.9cm long and 1.8 cm broad, deep green on the dorsal surface, leathery in texture and are toothed on margin [12].

Flower- Flower are yellow and about 12.5 mm in diameter, it appears in racemose inflorescence in a cluster of 11 to 16 [13].

Fruit- Fruits are berries and approximately 7mm long, 4mm in diameter and about 227mg in weight. [14]

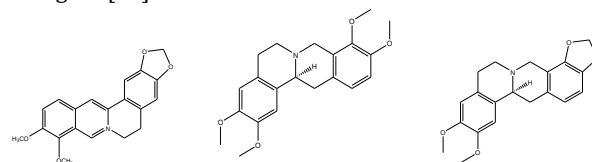
Seed- Seed are 2 to 5 in number, varying in color from yellow to pink [15, 16].

Phyto-constituents

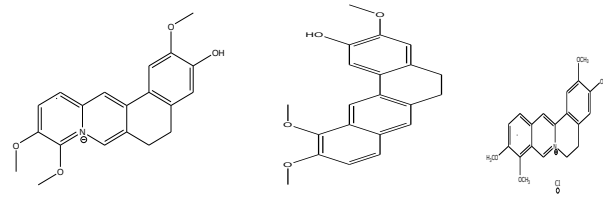
Root bark of the B. aristata contain proto-berberine, tetra-hydropalmatine, tetra-hydroberberine, jatrorrhizine, columbamine, and palmatine Chloride [17]. aromoline, oxyberberine, berbamine, oxyacathine and berberin chloride [18,19]. pseudopalmatin GGGG chloride, psudoberberine chloride, taxilamine, pakistanine, 1-O- methylpakistanine were also extracted from the bark of Plant [20,21].

Flower contains polyphenolic flavonoid named quercetin, meratine, rutine [22]. And acid E-caffic acid and chloregenic acid [23].

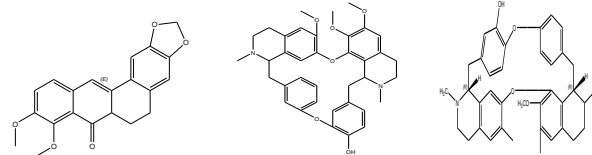
Rhizome contain Cadmium, Lead, Chromium, Zinc, Iron, and Manganese [24].



1. Berberine 2. Tetrahydropalmatine 3. Tetrahydroberberine



4. Jatrorrhizine 5. Columbamine 6. Palmatine Chloride



7. Oxyberberine 8. Berbamine (C₃₇H₄₀N₂O₆) 9. Oxyacanthine

Ayurvedic Properties of B. Aristata [25]

Rasa (Taste): Kashaya (Astringent), Tikta (Bitter)

Guna (property): Laghu (light), Ruksha (Dry)

Vipaka (Metabolic Property): Katu (Pungent)

Virya (Potency): Ushna (Hot)

Part Used [26]: Root, stem, Fruit, water extract

Ayurvedic Action [27]: Shothhara, Vedanasthapan, Vranashothana, Deepan, Pitta-Sarak, Grahi, Raktashodhak, Garbhashaya shothahara.

Uses [28]: Kandu (Itching), Medoroga (Obesity), Mukharoga (Mouth Disease), Vrana (Ulcer), Amatisara (Diarrhea), Urustambha (Life Style Disease), Kapharoga (Disease of Head and Neck), Karnaroga (Ear Disease), Netra Roga (Eye Disease).

Dose of Daruharidra in Different form [29]

Decoction: 50-100 ml

Fruit Powder: 3-5gm

Pharmacological Activity of B. aristata.

S. No	Extract	In vitro / In vivo models	Dose	Pharmacological Action	References
1.	Equeou	Hamste	500-	Hepatoprot	[30-

	s and metabolic extract	r, Rat model	1000mg/kg	ective, Anti-Inflammatory	[35]
2.	Alkaloid and hexane extract	Rabbit, infant mouse essay		Anti-microbial, Anti-bacterial, Anti-fungal	[36-41]
3.	Root extract	Rabbit, infant mouse	500-1000mg/kg	Antidiarrheal	[42-45]
4.	Ethanol and alcoholic extract	Alloxan induced rats	250mg/kg	Hypoglycemic	[46-48]
5.	Methanolic extract	Human colon cancer	250mg/kg	Anti-cancerous	[50-51]
6.	Aqueous ethanolic extract	Diabetic rat	250mg/kg	Anti-oxidant	[52-53]
7.	Alcoholic extract	Rabbit	100mg/kg	Anti-platelet	[54-55]
8.	Fruit extract	Rabbit	500mg/kg	Cardio tonic	[56]

Ayurvedic Uses of Daruharidra (*Berberis aristata* DC.)

Disease	Uses	Reference
Anaemia & Jaundice	Darvighrita,	CS.Ci.16/54
Skin diseases	Darvi or Rasanjana taken with Cow's urine Decoction of darvi, Khadira and Nimbu	CS.Ci.7/61 AH.Ci.19/37
Dysuria	Darvi and Amalaki juice mixed with honey	CS.Ci.26/53
Scrotal enlargement	Paste of Darvi with Cow's urine	AH.Ci.13/33
Disease of Mouth	Extract of darvi (Rasanjana) with honey	CS.Ci.26/202, AH.U.22/105
Coryza	Smoking of sticks made of darvi, Nirgundi, danti and Tulasi	VM.60/16
Eye Diseases	Eye drop made with Decoction of darvi and prapaundarika	AH.U.16/33
Pradara	Darvyadi kvatha	VM.63/6
Leucorrhoea	Decoction of Daruharidra mixed with honey	GN.6.1.24
Poison	Haridra & daruharidra are used as paste	GN.7/1/11

Prameha	Darvi and amalaki juice mixed with honey	VD.7/20
Wound	Oil cooked with durva juice / Kampillaka or Paste of Darvi Bark	CS.Ci.25/93

Identity, Purity and Strength [API-Vol-2, Page no-35]

Total Ash Value	NMT 2%
Acid insoluble Ash	NMT 5%
Foreign matter	NMT 14%
Alcohol Soluble Extractive Value	NLT 6%
Water soluble extractive Value	NLT 8%

Important Formulation of Daruharidra

Daruhaldi Powder, Madhumehtantak Churna, Navkarshik Churna, Bhringaraja Taila, Ashwagandhyarista, Khadiradi Gutika, Khadirarista, Triphala Ghrta.

Conclusions

On review of various Ayurvedic literature it was found that Daruharidra is an important medicinal plant described in different ayurvedic samhita such as Carak samhita, Shusruta Samhita and Astanga hridaya and in other ayurvedic treatise and are used in skin disease, anaemia, jaundice, dysuria, scrotal enlargement, disease of Mouth, leucorrhoea and in other health issues, further on review of various published research works it is found that it shows various pharmacological activity like hepato-protective, anti-inflammatory, anti-microbial, anti-diarrheal, anti-cancerous and cardio-protective activity.

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Conflict of Interest

No Conflict of Interest

Author Contribution

Ashwini Kumar Kushwaha conceived the idea of the article, Raj Patel wrote the article, Shushant Priyadarshi and Ashwini Kumar Kushwaha edited and proofread the document.

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