

## ***Haridra* (*Curcuma longa* Linn.) Depiction in Ayurvedic and Indian Alchemy (*Rasashastra*) Literature: A Classical Memoir**

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### **Abstract**

*Haridra*, (*Curcuma longa* Linn., Zingiberaceae), has been well documented in Ayurvedic pharmacopoeias which includes *Samhita* (treatise), *Nighantus* (lexicons), *Chikitsagrantha* (compendia of Ayurveda) and *Rasagrantha* (compendia related to alchemy). This paper provides a collective information regarding *Haridra*, its morphological characters, properties and actions, from *Nighantu*, *Samhita* and *Rasagrantha*. The study reveals that plant *Haridra* has about eighty synonyms (pariyaya), highlighting its morphological characters and pharmacological properties. It is attributed with properties like *Dahahara* (alleviating burning sensation), *Rujahara* (alleviating pain), *Varnya* (complexion promoter) and *Vishodhana* (cleansing of the body) etc. As a single drug, *Haridra* is indicated in about fifteen clinical conditions inclusive of *Prameha* (increased frequency and turbidity of urine), *Kustha* (diseases of skin), *Pandu* (anemia), *Visha* (poisoning), *Vrana* (Ulcer) etc. *Haridra* is used for *Shodhana* (processing), *Marana* (calcination) and *Jarana* (incineration) of various metals and gems in Indian alchemy. This review may enrich to documentary research and may provide collective and detailed information about *Haridra* as is presented in ayurvedic classical texts.

**Key word:** Ayurveda; *Curcuma longa*; *Haridra*, Turmeric

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### **Introduction**

Ayurveda, one of the oldest traditional health care system, is known for its unique fundamental principles, treatment guidelines, and drugs which are recorded in texts like *Veda* (6000 BC), *Samhita* (1500 BC – 600 AD) and *Sangraha grantha* (800 AD-1900AD)<sup>1</sup>. The drugs used in Ayurveda, based on their origin, can be categorized as three categories namely- herbal, mineral and of animal origin. Recently, drugs/ formulations of herbal origin have gained great importance and raising attention globally.<sup>2</sup> Among the drugs of herbal origin plants like *Haridra* are used as spices and also for curative purpose. *Haridra* in particular, has gained global attention for its anticancer and other properties.<sup>3</sup>

*Haridra*, botanically identified as *Curcuma longa* Linn.,

Family Zingiberaceae, is a perennial herb, having aromatic, deep orange yellow color rhizome, root fibers with tubers. Leaves are elliptic-oblong, caudate-acuminate. Inflorescence is central to the leaf-tuft and appearing with the leaves. Flower few to a bract, yellow, not exerted<sup>4</sup>. Plant is a native of South Asia and is cultivated extensively throughout warmer parts of the world, including India<sup>5</sup>. It is one of the common kitchen item available throughout India with various vernacular names like *Manjal* (Tamil); *Pampi*, *Pasupu* (Telugu); *Haldi* (Urdu); *Halad* (Konkani) etc<sup>6</sup>. Its rhizome contains an active principle Curcumin (C<sub>21</sub>H<sub>20</sub>O<sub>5</sub>), mixture of 3 Curcuminoids, 71.5% Curcumin-1 + 19.4% demethoxycurcumin+9.1% bismethoxycurcumin. Terpenoidal constituents like; 68 monoterpenes- euginol, geraniol, limonene; 109 Sesquiterpenes- áCurcumene, Curlone, termerol, Zingiberin; 5 diterpenes; 3 triterpenes. Yellow pigments and

colouring matter. Phenolic compounds- phenyl propens, vanillic acid, Vanilla. Fatty acids like linoleic acid, palmitic, oleic acid, stearic acid. Steroids like  $\beta$ sitosterol, stigmasterol and gitoxigenin. Other constituents are sugars, proteins and resins, alkaloid and an essential oil<sup>[7]</sup>. *Nighantus* and other classical texts of Ayurveda attributed *Haridra* with many synonyms based on *Guna-karmas* (properties and actions) and applications etc., This article attempts to present a comprehensive information on various aspects of *Haridra* from available classical sources of ayurvedic texts .

### Materials and Methods

Information regarding the drug *Haridra* is collected from thirty *Nighantu* available either in the library of Gujarat Ayurveda University, Jamnagar or online source of E-Nighantus by their thorough screening by the authors. (Table-1).

**Table 1: list of referred *Nighantu* where *Haridra* has been described.**

Sr.No.	<i>Nighantu</i>
1	<i>Abhidhanamanjiri</i> <sup>[8]</sup>
2	<i>Abhidhanaratnamala</i> <sup>[9]</sup>
3	<i>Amarakosha</i> <sup>[10]</sup>
4	<i>Astanga Nighantu</i> <sup>[11]</sup>
5	<i>Bhavaprakasha Nighantu</i> <sup>[12]</sup>
6	<i>Dhanavantari Nighantu</i> <sup>[13]</sup>
7	<i>Haritakyadi Nighantu</i> <sup>[14]</sup>
8	<i>Hridayadipaka Nighantu</i> <sup>[15]</sup>
9	<i>Kaiyadeva Nighantu</i> <sup>[16]</sup>
10	<i>Laghu Nighantu</i> <sup>[17]</sup>
11	<i>Madanadi Nighantu</i> <sup>[18]</sup>
12	<i>Madanapala Nighantu</i> <sup>[19]</sup>
13	<i>Madhavadravyaguna</i> <sup>[20]</sup>
14	<i>Mahausadha Nighantu</i> <sup>[21]</sup>
15	<i>Nighantu Adarsha</i> <sup>[22]</sup>
16	<i>Nighantusheca</i> <sup>[23]</sup>
17	<i>Paryayamuktavali</i> <sup>[24]</sup>
18	<i>Paryayaratnamala</i> <sup>[25]</sup>
19	<i>Priya Nighantu</i> <sup>[26]</sup>

20	<i>Raja Nighantu</i> <sup>[27]</sup>
21	<i>Rajavallabha Nighantu</i> <sup>[28]</sup>
22	<i>Sarasvati Nighantu</i> <sup>[29]</sup>
23	<i>Saushruta Nighantu</i> <sup>[30]</sup>
24	<i>Shabdachandrika</i> <sup>[31]</sup>
25	<i>Shaligrama Nighantu</i> <sup>[32]</sup>
26	<i>Shankara Nighantu</i> <sup>[33]</sup>
27	<i>Shivakosa Nighantu</i> <sup>[34]</sup>
28	<i>Siddhamantra Nighantu</i> <sup>[35]</sup>
29	<i>Siddhasara Nighantu</i> <sup>[36]</sup>
30	<i>Sodhala Nighantu</i> <sup>[37]</sup>

classification and *Rasa karma* of *Haridra*, as described in various *Rasagrantha* (Table-2) and *Samhita*(Table-3)

**Table 2 :List of referred *Rasagrantha* where *Haridra* has been described.**

Sr.No.	<i>Rasagrantha</i>
1	<i>Anandakanda</i> <sup>[38]</sup>
2	<i>Arkaprakasha</i> <sup>[39]</sup>
3	<i>Ayurvedaprakasha</i> <sup>[40]</sup>
4	<i>Bharatabhaishjyarnakara</i> <sup>[41]</sup>
5	<i>Bruhat Rasarajasundara</i> <sup>[42]</sup>
6	<i>Rasajalanidhi</i> <sup>[43]</sup>
7	<i>Rasaprakashasudhakara</i> <sup>[44]</sup>
8	<i>Rasasanketikalika</i> <sup>[45]</sup>
9	<i>Rasakaumudi</i> <sup>[46]</sup>
10	<i>Rasamrutama</i> <sup>[47]</sup>
11	<i>Rasapaddhati</i> <sup>[48]</sup>
12	<i>Rasa ratnasamucchaya</i> <sup>[49]</sup>
13	<i>Rasatarangini</i> <sup>[50]</sup>
14	<i>Rasayanasara</i> <sup>[51]</sup>
15	<i>Rasendrachudamani</i> <sup>[52]</sup>
16	<i>Rasendracintamani</i> <sup>[53]</sup>
17	<i>Rasendramangala</i> <sup>[54]</sup>
18	<i>Rasendrasambhava</i> <sup>[55]</sup>
19	<i>Rasendrasarasangraha</i> <sup>[56]</sup>
20	<i>Rasopanishata</i> <sup>[57]</sup>
21	<i>Yogatarangini</i> <sup>[58]</sup>

**Table 3: List of referred *Samhita* where *Haridra* is described.**

Sr.no.	<i>Samhita</i>
1	<i>Astanga Hrudaya</i> <sup>[59]</sup>
2	<i>Astanga Sangraha</i> <sup>[60]</sup>
3	<i>Charaka Samhita</i> <sup>[61]</sup>
4	<i>Shushruta Samhita</i> <sup>[62]</sup>
5	<i>Vangasena Samhita</i> <sup>[63]</sup>

*Nighntus* and *rasagranthas*, available in manuscript form, were excluded from the present research study. This study covers the available *Samhitas*, *chikitsagranthas*, *nighantus* and *rasagranthas*. The available data are presented in precise tabular format in a systematic manner with regards to the synonyms, classification, properties, actions and indications on various disease conditions. Standard dictionaries were referred for the interpretation of classical Ayurvedic terminologies and their nearest English equivalents<sup>[64, 65]</sup>. The probable English equivalent of technical terminologies were noted referring the Ayurvedic Formulary of India (AFI)<sup>[66]</sup>.

## Result and Discussion

### *Paryaya* (synonyms)

In *Ayurvedic* texts like *Nighantus* (lexicon), *Kosha*

(dictionary) and *Samhitas* (classical texts)<sup>[67]</sup> synonyms are commonly attributed to a single plant in order to illustrate its morphological as well as pharmacological characters. It is in this context, *Haridra* is observed to have about 80 synonyms to describe its morphological and pharmacological features. On examining the synonyms attributed to *Haridra*, various clearly demonstrable features are hairy roots (*Lomashamoolika*); leaves look like ginger (*Ardrakadala*); rhizome look like ginger (*Ardrakakanda*); yellow flowers (*Peeta*); yellowish outside (*Peeta*, *Peetika*, *Pitangi*); golden colour within (*Kanchani*, *Svarnavarna*); looking decent (*Varavarneeni*, *Varnavilasini*); draws attention in the market due to its bright colour (*Hattavilasini*); possesses antimicrobial property (*Krumighni*); increases color and complexion of the skin (*Gauri*); treats chronic stage of jaundice or *Halimaka* (*Haridra*), treats urinary diseases (*Mehaghni*, *Mehaghatini*) and treats poisoning (*Vishaghni*); used in all auspicious occasions (*Mangalya*); preferred by women as cosmetic drug (*Yoshitapriya*, *Varnavilasini*); and dyeing clothes (*Rajani*). All the above described morphological as well as pharmacological characters match well with the plant *Curcuma longa* Linn. of the family *Zingiberaceae*. Detailed lists of interpretations of these synonyms of *Haridra* have been enumerated in Table 4.

**Table 4: *Nirukti* (Etymology) of synonyms and their interpretation**

Synonym of <i>Haridra</i>	<i>Nirukti</i> and Interpretation <sup>[68, 69]</sup>
<b>Based on Pharmacognostical characters</b>	
<i>Kanchani</i> <sup>[8,10,12,15,21,23-26,29,30-31]</sup> , <i>Svarnavarna</i> <sup>[11,27,31]</sup>	The colour of the rhizomes are golden
<i>Nishakhya</i> <sup>[8,10,12,15,21-23]</sup> , <i>Nisha</i> <sup>[11,13,15,16,18,19,25,26,29,31]</sup> , <i>Nishahva</i> <sup>[9,11,31,32]</sup> , <i>Nishayam</i> <sup>[17,37]</sup> , <i>Ratri</i> <sup>[11,24,29]</sup> , <i>Tami</i> <sup>[29]</sup> , <i>Kshapa</i> <sup>[11,24]</sup> , <i>Kshanada</i> <sup>[32]</sup>	The color is as beautiful as full moon light .
<i>Pinda</i> <sup>[8,9,18,19,30,36]</sup> , <i>Pindabhadra</i> <sup>[16]</sup>	In order to distinguish it from <i>Daruharidra</i>
<i>Pita</i> <sup>[8-10,12-19,21,22,25,27,29,30-32, 37]</sup> , <i>Pitangi</i> <sup>[16]</sup> , <i>Peetavarna</i> <sup>[26]</sup> , <i>Pitika</i> <sup>[13,18,23-25]</sup>	The color of the rhizome and the flower are yellow
<i>Varavarneeni</i> <sup>[10,12-14,16-19,21-23,27,31,32,37]</sup>	The rhizomes are good looking
<i>Lomashamoolika</i> <sup>[11,16]</sup>	The rhizomes are hairy.
<i>Bhadra</i> <sup>[27]</sup> , <i>Bhadralata</i> <sup>[13,16,17,31,37]</sup> , <i>Romashaparnika</i> <sup>[9]</sup> , <i>Nirvisha</i> <sup>[11]</sup> , <i>Pinga</i> <sup>[13,23,37]</sup> , <i>Pingala</i> <sup>[27]</sup> , <i>Pingeti</i> <sup>[8]</sup> , <i>Shobha</i> <sup>[21]</sup> , <i>Shobhana</i> <sup>[27]</sup>	

<b>Based on Pharmacological actions</b>	
<i>Haridri</i> <sup>[27]</sup> , <i>Harita</i> <sup>[13,16,17,23,27,37]</sup> ,	It is an effective drug for Jaundice
<i>Vishaghni</i> <sup>[13,27,37]</sup>	It is an effective drug for Poison
<i>Krimighna</i> <sup>[8,12,14,21,30]</sup>	It is an effective drug for worms
<i>Mehaghatini</i> <sup>[34]</sup> , <i>Mehaghni</i> <sup>[24,32]</sup>	It is an effective drug for <i>Prameha</i>
<b>Other</b>	
<i>Ranjani</i> <sup>[8,13,16,19,24]</sup> , <i>Rajani</i> <sup>[8,9,11,13,15-19,23,24,27,29,30,36,37]</sup> , <i>Rangini</i> <sup>[13,37]</sup> , <i>Ranjana</i> <sup>[29]</sup> , <i>Dirgharaga</i> <sup>[27]</sup> , <i>Dirgharanga</i> <sup>[9,13,16,31,37]</sup> , <i>Haridranjani</i> <sup>[27]</sup>	This is used as coloring agent / it colors the cloths
<i>(Lakshami, Mangala, Mangalya, Pavitra, Shiva)</i> <sup>[27]</sup> , <i>Sumangalya</i> <sup>[37]</sup>	It is used at all auspicious occasions
<i>Yoshitpriya</i> <sup>[12,14,21,22]</sup> , <i>Yuvati</i> <sup>[21,31,32]</sup> , <i>Yoshidvallabhika</i> <sup>[30]</sup> , <i>Strivallabha</i> <sup>[8]</sup> , <i>Sundari</i> <sup>[31]</sup>	Liked by women as a cosmetic
<i>Hattavilasini</i> <sup>[12,14,19,21]</sup>	<i>Haladi</i> is a common market article which draws attention due to its bright colour
<i>Haladi</i> <sup>[12,14,21,22,30]</sup> , <i>Haladika</i> <sup>[13]</sup>	It pierces the sand and grows laterally as well as deep into the soil
<i>Gauri</i> <sup>[8,9,11,13,16,18,19,23-25,,27,29,30,32,37]</sup>	It is treated as goddess Parvati or it provides good complexion and colour to skin
<i>Varnavilasini</i> <sup>[13,16,37]</sup> , <i>Varavarneeni</i> <sup>[10,12-14,16-19,21-23,27,31,32,37]</sup> , <i>Varnadatri</i> <sup>[21,27]</sup> , <i>Varnani</i> <sup>[27]</sup> , <i>Varnapradayini</i> <sup>[37]</sup> , <i>Varnavati</i> <sup>[8,13,16,18,19,23,30,36]</sup> , <i>Varni</i> <sup>[29]</sup> , <i>Varneeni</i> <sup>[9,16,24,27]</sup> , <i>Hemaragini</i> <sup>[21,32]</sup> , <i>Suvarna</i> <sup>[27]</sup>	
<i>Janishtha</i> <sup>[27]</sup> , <i>Jayanti</i> <sup>[13,27,37]</sup> , <i>Kasa</i> <sup>[21]</sup> , <i>Pinja</i> <sup>[16,29]</sup> , <i>Shipha</i> <sup>[27]</sup> , <i>Shopha</i> <sup>[27]</sup> , <i>Subhagahvya</i> <sup>[27]</sup> , <i>Shyama</i> <sup>[11,27]</sup> , <i>Tarangini</i> <sup>[23]</sup> , <i>Vara</i> <sup>[11,27]</sup> , <i>Varangi</i> <sup>[27]</sup> ,	
<i>Veshthesha</i> <sup>[16]</sup> , <i>Veshya</i> <sup>[16,23]</sup> , <i>Vilasini</i> <sup>[27]</sup> , <i>Vitapriya</i> <sup>[23]</sup> , <i>Vrusheshta</i> <sup>[17]</sup>	

### Classification

Depending upon the origin, morphology, property, pharmacodynamics and therapeutic values of the drug, ancient texts have classified the drugs into various groups and coined technical terms for these groups as *Mahakashaya* (Group of ten drugs), *Gana* (class), *Varga* (group of drug) and *Skandha* (group). *Haridra*, has been classified into various groups/sections, by almost all classical texts. The signature and simile is perceived while going through these classifications certifying the scientific approach of *Nighantus* behind these classifications. Out of 30 *Nighantus*, 23 had described the drug under a Vargas.

*Paryayamuktavali*, *Nighantushesha*, *Saraswatinighantu* and *Abhidhanamanjari* have classified drugs according to morphology and quoted in *Kandavarga*, *Gulmakanda*, *Latavarga* and *Velladi varga* respectively. *Abhidhanaratnamala* has classified drug according to *Rasa* and quoted under *Tiktaskandha*. *Siddhamantra Nighantu* has classified drug according to *Doshagnata* and quoted under *Pitta-kaphaghna varga*. Rest have mentioned in different *Dravya vargas* such as *Guduchyadi*, *Haritakyadi*, *Aushadhi*, *Pippalyadi* and *Shatapushpadi Varga* etc. The details of classifications of *Haridra* have been enumerated in Table 5.

**Table 5: Classification of *Haridra* in various *Samhita*, *Rasagrantha* and *Nighantu*.**

Classification	<i>Gana, Varga and SkaEdha</i>
Based on action	<i>Lekhaniya</i> <sup>[55, 60, 61]</sup> , <i>Kushthaghna</i> <sup>[55, 60, 61]</sup> , <i>Vishaghna</i> <sup>[55, 60, 61]</sup> , <i>Vamanopayogi</i> <sup>[60, 61]</sup> , <i>Shirovirechana</i> <sup>[60, 61]</sup> , <i>Sarvoshadhi</i> <sup>[63]</sup> , <i>Marakavarga</i> <sup>[43, 55]</sup> , <i>RanjanaGana</i> <sup>[39]</sup>
Based on properties	<i>Tiktaskandha</i> (group of bitters) <sup>[9, 59-63]</sup>
Based on colour	<i>Pitavarga</i> <sup>[42, 43, 49, 53, 55, 57]</sup> , <i>Raktavarga</i> <sup>[57]</sup>
Based on first drug of the group	<i>Haritakyadivarga</i> (group of <i>Haritaki</i> and other drugs) <sup>[12,14]</sup> , <i>Guduchgyadivarga</i> (group of <i>Guduchi</i> and other drugs) <sup>[13,37]</sup> , <i>Pippalayadivarga</i> (group of <i>Pippali</i> and other drugs) <sup>[27]</sup> , <i>Shatapushpadivarga</i> (group of <i>Shatapushpa</i> and other drugs) <sup>[26]</sup> , <i>Haridradi Gana</i> (group of <i>Haridra</i> and other drugs) <sup>[11,22,30,55,59, 60, 62]</sup> , <i>Mustadi</i> (group of <i>Musta</i> and other drugs) <sup>[55,59,60,62,63]</sup> , <i>Lakshadi</i> (group of <i>Laksha</i> and other drugs) <sup>[55, 63]</sup> , <i>Aragvadhadi</i> (group of <i>Aragvadha</i> and other drugs) <sup>[63]</sup> , <i>Vachadi-haridradi</i> <sup>[63]</sup> , <i>Abhayadi</i> (group of <i>Abhaya</i> and other drugs) <sup>[19]</sup>
Based on habit	<i>Gulmakanda</i> (group of shrubs) <sup>[23]</sup> , <i>Kandavarga</i> (group of root) <sup>[24]</sup> , <i>Latavarga</i> (Group of climber) <sup>[29]</sup> , <i>Velladivarga</i> <sup>[8]</sup> , <i>Vrukshadivarga</i> (group of tree) <sup>[31]</sup>
Based on number	<i>ChaturthaGana</i> <sup>[18]</sup> , <i>ChatushpadaVarga</i> <sup>[15]</sup> , <i>AshtaVarga</i> <sup>[32]</sup>
Based on use	<i>Aushaddivarga</i> <sup>[16]</sup>
Based on <i>Dosha Karma</i>	<i>Pitta-kaphaghnnavarga</i> <sup>[35]</sup> , <i>Shleshmasamshamanavarga</i> <sup>[63]</sup> , <i>Vatasanshamana</i> <sup>[62,63]</sup>
Based on profession	<i>Vaishyadivarga</i> (marketing) <sup>[10]</sup>
Other	<i>Madhyahnikaparincheda</i> and <i>Aushadhashrayaparincheda</i> <sup>[29]</sup>

***Rasadipanchaka* (Ayurvedic pharmacodynamics properties) and *Doshagnata***

It is emphasized in most of *Nighantu* that *Haridra* possesses *Katu*, *Tikta*<sup>[12,14,16,19,21,27]</sup>*Rasa*, *Ruksha*<sup>[12-14,16,19,21,33]</sup>*Guna*, *Ushna*<sup>[12-14,16,19,21,26,27,33]</sup>*Veerya* and *Kapha-pitta Shamaka*<sup>[12,14,16,17,19,21,26,28,37]</sup> property. Some *Nighantu* mentioned *Haridra* having only *Tikta*<sup>[13,26,33]</sup> *Rasa*, and *Kapha-Vata-Rakta Shamaka*<sup>[27,33]</sup> property. A drug performs certain local and general actions either by its *Rasa*, *Guna* and certain specific therapeutic actions by its *Vipaka* and *Veerya*. *Acharya Charaka* states that some substances act in accordance with their *Rasa* (taste), and some in accordance to their post digestive effects (*Vipaka*), *Veerya* (potency), or specific actions (*Prabhava*)<sup>[61]</sup>.

***Karma and Rogaghnta* (Actions and therapeutic indications):**

*Haridra* has been indicated in the management of 15 different disease conditions. Among these, maximum indications are for *Meha* (Increased frequency and turbidity of urine)<sup>[12-14,16,17,19,21,26-28,33,37]</sup> followed by *Tvagdosha* (Skin disorders)<sup>[12,14,16,17,19,21,26,28,33,37]</sup>, *Vrana* (ulcer)<sup>[12,14,16,19,21,26-28,33,37]</sup>, *Pandu* (anaemia)<sup>[12,14,16,17,19,21,28,33,37]</sup>, *Shopha* (oedema)<sup>[12,14,16,17,19,21,28,33,37]</sup>, *Visha* (poison)<sup>[12,13,16,19,27,28,33]</sup>, *Apaci* (Chronic lymphadenopathy)<sup>[12,16,17,28,33,37]</sup>, *Kandu* (itching)<sup>[13,17,27,28,33,37]</sup>, *Kushtha* (disease of skin)<sup>[13,17,28,33,37]</sup>, *Krumi* (worm infestation)<sup>[13,17,33,37]</sup>, *Aruchi* (tastelessness)<sup>[13,33]</sup>, *Pinasa* (chronic rhinitis)<sup>[13,33]</sup>, *Abhighata* (trauma)<sup>[26]</sup>, *Jvara* (fever)<sup>[17]</sup>, *Shitapitta* (urticaria)<sup>[26]</sup> and four *Karma* like

*Varnya* (complexion promotor)<sup>[12-14,16,19,21,27]</sup>, *Daha* (burning sensation)<sup>[19]</sup>, *Ruja*(pain)<sup>[28]</sup> and *Vishodhani* (cleansing of the body)<sup>[13]</sup>. *Dhanvantari Nighantu*, *Laghu Nighantu*, *Sodhala Nighantu* and *Rajavallabha Nighantu* have indicated *Haridra* in maximum disease conditions.

### **Haridra in Rasashastra**

*Rasashastra* recommends the processing of drugs of metallic origin, through a systematic approach namely *Sanskara*, which is capable of refining the properties of the drug. *Shodhana* means a process of purification and detoxification of the drug to enhance the safety the drug.

*Haridra* is commonly recommended, in most of the *Rasashastra granthas*, for this purpose . *Marana* (incineration) and *Jarana* (calcination)<sup>70</sup> are used to remove *Visha* (toxic compounds), and to convert them to chemically modified compounds which are less toxic. *Haridra* is used in 9 steps of purification, among the 18 recommended for *Parada*. These 9 steps are *Mardana*, *Murcchana*, *Jarana*, *Anuvasana*, *Utthapana*, *Shodhana*, *Svedana*, *Patana* and *Ranjana*. *Haridra* is also used for processing of various other metals like *Abhraka Satva Patana*, *Makshika Marana* and *Satva Patana*, *Haratala Marana* (Table-6).

**Table 6: Use of *Haridra* in processing of *Parada* (mercury) and other metals**

<b>Indication</b>
<b>Rasa / Parada</b>
<i>Hingulottha Parada</i> <sup>[40]</sup> , <i>Paradabhasma</i> <sup>[38]</sup> , <i>ParadaJarana</i> <sup>[52,53]</sup> , <i>Paradamardana</i> <sup>[41,43,45,46,54,55]</sup> , <i>Paradamurcchana</i> <sup>[41]</sup> , <i>Paradapatana Sanskara (Adhahpatana)</i> <sup>[43,49]</sup> , <i>Parada Shodhana</i> <sup>[38,40,41,43,50,55,57,58]</sup> , <i>Parada Shodhana Dvitiyaprakara</i> <sup>[56]</sup> , <i>Parada Shodhana Sanskara-4<sup>th</sup>Dashana Sanskara</i> <sup>[57]</sup> , <i>Parada Utthapana Vidhi</i> <sup>[43]</sup> , <i>Paradashuddhiprathamaprakara</i> <sup>[51]</sup> , <i>Paradasyaanuvasana</i> <sup>[43]</sup> , <i>Paradasyamaraka Gana</i> <sup>[50]</sup> , <i>Rasaranjana</i> <sup>[43]</sup> , <i>Rasavedana</i> <sup>[43]</sup> , <i>Vishodakabandha (Paradabandha)</i> <sup>[38]</sup>
<b>Maharasa/Uparasa</b>
<i>Abhraka bhasmalohitakarana</i> <sup>[50]</sup> , <i>Abhraka satvabhasma bhakshanavidhi</i> <sup>[53]</sup> , <i>Abhraka satvapatana</i> <sup>[38,58]</sup> , <i>Haratala marana</i> , <i>Manahshila shuddhi</i> <sup>[48]</sup> , <i>Makshika marana</i> <sup>[46]</sup> , <i>Makshika satvapatana</i> <sup>[43]</sup> , <i>Rasaka satvapatana</i> <sup>[38,43,44,48,49,52,55]</sup> , <i>Vaikranta satva Patana</i> <sup>[43,48]</sup>
<b>Dhatu</b>
<i>Arashuddhi</i> <sup>[49,54]</sup> , <i>Banga bhasma</i> <sup>[38]</sup> , <i>Banga marana</i> <sup>[43,53]</sup> , <i>Banga shodhana</i> <sup>[38,43,49]</sup> , <i>Kanta lohabhasma</i> <sup>[38]</sup> , <i>Loha marana</i> <sup>[43]</sup> , <i>Naga bhasmavidhi</i> <sup>[57]</sup> , <i>Naga shodhana</i> <sup>[43,47,48,54]</sup> , <i>Raupya marana</i> <sup>[43]</sup> , <i>Tikshnalauhabhasmamaranavidhi</i> <sup>[48]</sup>
<b>Ratna/Uparatna</b>
<i>Rajavartasatva Patana</i> <sup>[52]</sup> , <i>Vajra Shodhana</i> <sup>[43]</sup>
<b>Other</b>
<i>Bhunaga satvapatana</i> <sup>[51,52,58]</sup> , <i>Dehalohasiddhipradan</i> <sup>[44]</sup> , <i>Drutimelapana</i> <sup>[38]</sup> , <i>Kanjividhi</i> <sup>[51]</sup> , <i>Palandulashunad-inaamnirgandhikarana</i> <sup>[39]</sup> , <i>Ranjanatailavidhi</i> <sup>[38]</sup> , <i>Saranataila</i> <sup>[43]</sup> , <i>Sarvadosaharasankshiptashodhitavidhi</i> <sup>[43]</sup> , <i>Visha shodhana</i> <sup>[55]</sup>

### **Conclusion**

The plant whose leaves and rhizomes look like that of *Zingiber officinale* (*Ardrakadala*, *Ardrakakanda*), bears yellow flowers (*Peeta*), hairy (*Lomashamoolika*),

yellowish outside (*Peeta*, *Peetika*, *Pitangi*), golden within (*Kanchani*, *Svarnvarna*), look decent (*Varavarneeni*, *Varnavilasini*), draw attention in the market due to its bright colour (*Hattavilasini*) is known as *Haridra* and is

equated botanically to *Curcuma longa* Linn. of family Zingiberaceae. Ayurvedic pharmacodynamics of *Haridra* unveils that it possesses *Ruksha*, *Ushna* property and pacifies *Kapha-Pitta dosha*. *Haridra* possesses four medicinal properties like *Dahahara* (alleviating burning sensation), *Rujahara* (alleviating pain), *Varnya* (complexion promotor) and *Vishodhita* (cleansing of the body). The drug is indicated in 15 clinical conditions like *Prameha* (increased frequency and turbidity of urine), *Kustha* (disease of skin), *Pandu* (anemia), *Visha* (Poison), *Vrana* (Ulcer) etc. *Haridra* is also used for *Shodhana* (processing/purification procedure), *Marana* (calcination) and *Jarana* (incineration) of *Parada*, *Maharasa/Uparasa*, *Dhatu* and *Ratna/Uparatna*. This review may steer further scientific researches to explore all the pharmacological properties of *Haridra* delineated in various *Nighantus* (lexicons) and may be referred as a revisit of classical description of *Haridra* and its concurrent utility.

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