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#### **Review Article**

# THERAPEUTIC ACTION OF HINGU IN RESPIRATORY SYSTEM: A LITERARY REVIEW

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#### **ABSTRACT**

Man has been struggling to get remedies for various life-threatening disorders which are common in the day to day life of the busy world. Many lifestyle disorders such as diabetes mellitus, hypertension, dyslipidemia, thyroid dysfunction, respiratory disorders, skin diseases, etc. arise due to incompatible diet, polluted atmosphere, sedentary life style, lack of exercise, lack of proper sleep, etc. Ayurveda, the science of life, advices to follow *Dinacharya*, *Ritucharya*, *Sadvritta* etc for the benefit of the common man to enhance longevity. Ayurveda utilizes the wide range of herbal drugs either as single drug or in combination for the purpose of health care remedies. The phyto constituents present in these drugs play the major role in treating the diseases. Ferula foetida, known as *Hingu* in Ayurveda has promising therapeutic value due to the presence of chemical constituents like sulphide derivatives, volatile oil etc. Many studies revealed the various pharmacological actions of *Hingu* such as carminative, antispasmodic, antimicrobial, antioxidant, etc. This review highlights the available information on the drug *Hingu* by due consideration to the action of *Hingu* on the respiratory system and the formulations with *Hingu* as an ingredient as available in the Ayurvedic texts in treating respiratory disorders. Some other aspects are also discussed in the review.

**KEYWORDS:** *Hingu,* Ferula foetida, *Pranavaha srotas,* Respiratory system.

#### INTRODUCTION

Herbal drugs or formulations are gaining popularity day by day as per common man's demand for relatively safe and immune developing drugs has increased.

Ferula foetida, a herbaceous perennial plant with fleshy, massive carrot shaped root with one or more forks, grows about 1.8-3m in height, requires dry or moist soil. Mostly, the dried latex (oleo-gum resin) obtained by making deep incision in the roots or rhizomes are preferred for the medicinal or culinary purpose.

Swasa, Kasa, Kshaya etc are considered as the common diseases affecting the Pranavaha srotas, that is the Respiratory disorders as per the contemporary system. There are five types of Swasa and Kasa rogas as explained by all the Acharyas. Hingu shows promising actions on the respiratory system, as it is antispasmodic, expectorant, etc. It is Vata-kapha hara and also Kasa- swasa roganut as per Kaiyadeva Niahantu.[1,2,3]

#### Scientific Classification[3]

**Kingdom** Plantae

**Family** Apiacea (Umbelliferae)

**Genus** Ferula **Species** foetida

As Per Ayurveda<sup>[4,5]</sup>
Kula: Satapushpa kula

#### Gana

- **1.** Samjna sthapana, Deepaniya, Swasahara (Charaka samhita)
- 2. Pippalyadi, Ushakadi (Sushruta samhita)

# **Botanical Description**<sup>[2]</sup>

It is a herbaceous perennial plant with fleshy massive carrot shaped root with one or more forks, attains a height of up to 12 feet. Stem is 1.8-3m high, solid, clothed with membranous leaf sheaths. Leaves radical, 45 cm long, shiny, coriaceous with pinnatifid segments and channeled petiole. Flowers 10-20 in the mainand 5-6 in the partial umbels. These are small and dirty yellow in colour. Fruits are oval, flat, thin and reddish brown in colour. Roots are thick, massive and pulpy.

**Origin And Distribution**<sup>[2,6]</sup>: It is indigenous to the plains of Kandahar, Eastern Persia & Western Afghanistan; wild in Punjab, Kashmir, etc.

#### **Synonyms**

Sahasravedhi, Jatukam, Bahlikam, Ramatham, Ugragandha, Soopadhupana, Agoodhagandha, Jarana, Jantughna, Gulmadighna, Rakshoghna, Bhedana, Deepana. Parts Used[3,6]: Niryasa (oleo-gum resin) extracted from the roots and rhizomes is used. It is obtained as an exudate of the decapitated rhizome or root of a plant about four years old.

# Ayurvedic Properties[1,4,6]

Rasa Katu. Tikta

Laghu, Tikshna, Snigdha Guna

Virva Ushna Vipaka Katu

Karma Kapha-vataharam, Hridhyam,

Artavajananam, Balyam, Shulaharam,

Chakshushyam, Pachanam

**Indications** Agnimandyam, Swasa, Kasa, Krimi,

Artavadosha, Apasmara, Murcha.

Shula, Gulma, Udara, etc.

#### Method and Time of Collection[2,6,7]

In March – April. just before flowering, the upper part of the root of 4-5 years old plant is selected. The stems are cut close to the root and the exposed surface is covered over by soil and dry twigs. The milky exudates appear from the cut surface when scrapped off after a few days. This process is repeated until no resin comes out. This dried resin is the commercial form of *Hingu*.

- When the plant is of 4 years old, during Vasanta ritu, the bark above the root is removed. The *Nirvasa* collected at that part is taken after one or two days. This process is repeated. To protect the resin from sunlight, dust, etc. a shade is provided -this method was commonly practiced in Iran and Baluchistan.
- In Kabul and Afghanistan, there was a different method, just above the root the trunk of the plant was cut and the resin was collected. This process was repeated and those parts were protected from sunlight and dust by providing proper shelter.

## **Chemical Composition**[8,9,10]

There are various chemical constituents in asafoetida - resin (40-65%), gum (20-25%), volatile oil (4-20%) and ash (1.5-10%). It comprises a number of sesquiterpenes in which assaresinotannol (A & B) is important. Glabanic acid is the active constituent present in Hingu with anti-cancerous property. The volatile oil component is rich in organo-sulfide compounds, which are responsible for odour and flavour of Hingu, like 2-butyl-propenyldisulfide, diallyl sulfide and dimethyl trisulfide. There are also ferulic acid, umbellic acid and some unidentified compounds present in *Hingu*.

#### Macroscopic Features of Hingu<sup>[2,3,12]</sup>

Shape It occurs in three forms commerciallytears, mass and paste.

Tears- purest of the three, it is greyish or

dull vellow in colour.

Mass- common commercial form which

may contain impurities.

Paste- also impure as it contains some

extragenous matter.

Size The tears are 0.5-3cm in diameter.

Colour It is yellowish white in colour changing to

reddish brown.

Odour It has an intense persistent, penetrating and

alliaceous smell.

Taste It tastes bitter alliaceous and acrid.

#### Test For Good Variety of *Hingu*[7]

- 1. Good variety of *Hingu* when put in water, it gradually dissolves and a vellowish white emulsion is formed which turns greenish yellow later. If it is adulterated, it gets immersed because of the impurities present in it.
- 2. When burnt with Gandhaka (sulpur), it forms a reddish grey colored mass. When this mass is diluted with water and filtered, it forms a purplish-blue fluorescence. This implies good variety of *Hingu*.

# Purification (Sodhanakarma)[7]

- 1. The *Hingu niryasa* is mixed well in 8 parts of water and then it is transferred into a *Snigdha Lohapatra* (metallic vessel smeared with oil); this is boiled in medium flame until the water gets evaporated.
- 2. *Hingu* is fried in ghee until it becomes dry and hard.

#### **Substituents and Adulterants** [2,7]

Hingu is usually found mixed with small stones, sand and rootlets of the plant. Gum Arabic, resin, gypsum, red clay, chalk, barley, wheat, wheat or corn flour, potato slices, acacia gum, etc. are reported to be used for adulterating asafoetida.

#### Therapeutic Actions[11]

Asafoetida is stomachic, antispasmodic, carminative, expectorant, anthelminthic, analgesic, nervine stimulant and a feeble laxative. It is useful in hysteria and hysterical affections, also in spasmodic affections such as asthma, whooping cough, angina pectoris, flatulent colic, etc. it produces remarkable effects in advanced stages of pneumonia and bronchitis in children and it also pacifies Kapha and Vata. It is also emmenagogue, tonic and useful in paralysis, giddiness, deafness, dyspnea in children, rheumatism, some eye diseases, dry cough, liver and spleen disorders, etc.

#### Toxic Effects[3]

Asafoetida has been found to be relatively nontoxic. A report of methemoglobinemia has been associated with the administration of *Hingu* in milk. It was observed that, Hingu exerts an oxidizing effect on fetal hemoglobin but not on adult hemoglobin. After the use of *Hingu*, an unusual swelling of the lips has been noticed in some people. Extensive oral and facial swelling can be considered as signs of allergic reaction of *Hingu*. In some cases, patients on treatment with *Hingu* experience stomach upset, headache, dizziness, skin rashes, etc.

# Formulations With *Hingu* Used In Respiratory Disorders

- 1. **Purana Ghrita:** Siddha (processed) with abhaya (Terminalia chebula), *Hingu* and *Vidalavana* is useful in the management of Swasa roga.<sup>[13]</sup>
  - As per Acarya Caraka, *Ghrita* is *Pitta-anilaharam* and hence pacifies *Vata*. It acts as best medicine due to the ability to penetrate the minute channels of the body. When processed with various drugs due to its *Yogavahi* nature it helps in promoting the actions of those drugs. *Purana Ghrita* is considered to be 10 years old by Caraka, Dalhana, Hemadri, Yogaratnakar; while 1 year old ghee is considered *Purana* by Bhavamishra. This type of ghee also contributes more to the therapeutic effects of the preparations.
- 2. *Nidigdhika disidhatamayogam: Nidigdhika* (*Solanum xanthocarpum*) and *Hingu churna* (powder) should be taken along with honey, *Swasa roga* can be cured in 3 days.<sup>[13]</sup>
  - In this yoga, the powder of Nidigdhika is taken as Amalaka pramana and Hingu is taken half of the quantity of Nidigdhika. Nidigdhika is Kapha-vata Samaka, Ushna virya and Katu vipaka. Its pharmacological actions like Swasa kasaghna, Kaphanisaraka, Vataghna, Peenasahara etc. implies the effect of this drug on respiratory system. Synonyms like Vyaghri which means a powerful drug that acts like a tiger to kill disease, Dravani which means that make Kapha to melt and move out which can be considered as expectorant in nature, etc clearly mentions the action of this drug.
  - Honey is taken as *Anupana* (adjuvant) here, it has *Madhura rasa kashaya anurasa* and is considered as best *Anupana* in *Kasa, Swasa, Kshaya* etc respiratory diseases.
- 3. Hinguadiyavagu: Sauvarchala, Hingu, Ajaji (Cuminum cyminum), Vida, Pushkaramoola (Inula racemose), Chitrakamoola (Plumbago zeylanica)these drugs are used to prepare Yavagu (gruel like preparation) and it is advised in Swasaroga.[14] The drugs Ajaji, Pushkaramoola Chitrakamoola are Kapha-vata Samaka in nature and have therapeutic actions in the diseases like Swasa, Kasa, Urahsula etc Sauvarchala and Vida are Vatasamaka; so these drugs when combined together shows good results in these disease conditions.

- Yavagu is the preparation which comes under the *Pathya kalpana* that is the Ayurvedic diet plan. It is a light diet in which the main ingredient is rice which is easy to digest and with lots of nutritional value and when prepared with combination of drugs its properties are also highlighted.
- 4. Pushkaradiyavagu: Pushkaramoola, Sathi (Hedychium spicatum), Trikatu (sunthi-Zingiber officinale, Maricha- Piper nigrum, Pippali- Piper Amlavetasa longum), Matulunaa. (Garcinia pedunculata). Vida lavana and Hinau- siddha (processed) *Yavagu* is beneficial in *Swasaroga*.[14] Sathi is Kapha-vatasamaka and its Rogaghna karma includes Kasaghna, Swasaghna and Vatanulomana. Maricha has synonym Kaphavirodhi that means it is a potent drug against kapha predominant disorders. Nagara or Sunthi has synonym Kaphaari which means useful in Kaphaja vyadhi. Both these drugs are Kapha-vata and therapeutic actions samaka Swasaghna, Vatanulomana, Kaphahara, etc. Pippali is Tridosha samaka and is Swasa-kasaahna by its properties. Both Matulunga and Amlavetasa are also Kapha-vata Samaka and acts on respiratory disorders like Kasa, Swasa, Hikka etc.
- 5. **Hinguadidravya prayoga:** The drugs Hingu, Sauvarchala, Kola (Zizyphus jujuba), Samanga (Mimosa pudica), Pippali and Bala (Sida cordifolia) Churna should be triturated with Matulunga rasa or Aranala (a variety of fermented gruel/Kanjika) can be used in Swasa roga.[14]
  - The drug *kola* and *Sauvarchala* are *Vatasamaka*. As per Raja Nighantu *Samanga* is *Kapha-pittahara* and *Swasa roganut*. *Bala* is *Vata-Pittasamaka*, *Balya*, *Rasayana*, *Hridya*, *Brimhana*, etc. *Matulunga* is also having action on respiratory diseases like asthma, cough, cold etc.<sup>[21]</sup> *Aranala* is prepared mainly from rice and is very light and easily digestible. These drugs when triturated with the *Matulunga rasa* or *Aranala* the potency increases and thereby enhances the action on the system also.
- 6. Kanasauvarchaladi Ghrita: Kana (Piper longum), Sauvarchala, Yavakshara, Vayastha (Terminalia chebula), Hingu, Coraka (Angelica glauca)<sup>[21]</sup>, Kayastha (Tulasi-Ocimum sanctum), Mastu (watery part of curd) and Dasamoola (group of ten drugs) are the contents. Ghee prepared with these drugs is effective in Swasa roga.<sup>[15]</sup>
  - Kana and Vayastha is Tridosha Samaka and has Swasa-kasaghna property. Both Coraka and Kayastha are Kapha-vatasamaka and are therapeutically useful in cough, dyspnoea, Parswasula, etc. Dasamoola includes drugs like Bilwa, Agnimantha, Syonaka, Patala, Gambhari,

*Prisniparni, Salaparni, Brihati, Kantakari and Gokshura*; in combination these drugs are very effective as *Tridosha-samaka* and also beneficial in respiratory diseases. Ghee with its natural properties when combined with these drugs enhances the therapeutic action.

7. Tejovatyadi Ghrita: Tejovati (Zanthoxylum armatum), Abhaya, Kustha (Saussurea lappa), pippali, Katurohini (Picrorhiza kurroa), Bhutika (Trachyspermum ammi), Pushkaramoola, Palasa (Butea monosperma), Chitraka, Sati, Tamalaki (Phyllanthus niruri), Patudwaya, iivanti (Leptadenia reticulata), Bilwa phala (Aegle marmelos), Vaca (Acorus calamus), Talisapatra (Abies webbiana), Hingu and ghee are the ingredients and is beneficial for patients of Swasa roga.[15]

The drugs *Tejovati, Kustha, Bhutika, Pushkaramoola, Palasa, Citraka, Sathi, Bilwaphala, Vaca, Talisapatra* and *Hingu* are *Kaphavatasamaka. Katurohini* and *tamalaki* are *Kaphapittahara* while *Abhaya* and *Jivanti* are *Tridoshasamaka.* These drugs when prepared with ghee acts even in the minute channels of the respiratory system and provides the beneficial effects to the patient suffering from the diseases like *Kasa, Swasa,* etc.

8. In diet– Acharya Vagbhata advices to include *Hingu* in preparation of food.<sup>[15]</sup>

As per Ayurveda the *Dravyas* (materials/drugs) are of two types *Aushadha* (medicine/drug) and *Ahaara* (food items) *Dravyas*. To achieve good results in treatment the *Vaidya* (physician) should prescribe best medicines as well as apt diet schedule as per the condition of patient and disease. This can be considered as *Pathya* which helps in enhancing the action of the prescribed drugs as it may not interfere with the patient's *Agni* (digestive power), etc. So, the use of *Hingu* which has *Kapha-vatasamaka* action and effective therapeutic action in the respiratory system as well as digestive system can bring wonderful results.

In the treatment of *Swasa roga*, Acarya Caraka explains those items which are *Kapha-vata samana*, *Ushna* and *Vata-anulomana* whether it is *Bheshaja*, *Paana*or *anna* are beneficial in the management of *Swasa* and *Hikka roga*.

9. Pathya kustumbaryadi kwath: Pathya (Terminalia chebula), Kustumbari (Coriandrum sativum), Musta (Cyperus rotundus), Sunthi, katrina, Parpata (Fumaria parviflora), Katphala (Myrica esculenta), Vaca, Bharngi (Clerodendrum serratum) and Devahwam (Cedrus deodara)-

decoction of these drugs should be taken by adding honey and *Hingu*.<sup>[16]</sup>

Pathya and Kustumbari are Tridosha-samaka while Musta and Parpataka are Kapha-pittahara. Katphala is Vata-kaphasamaka and is useful in treatment of Pratisyaya, Tamaka Swasa, Kasa, etc. Bharngi is also known as Kasaghni meaning that relieves Kasa. It is also Kapha-vatahara and also cures Swasa, Pinasa, Phuphusa-vikaras (diseases of lungs). Devadaru is also Kapha-vatasamaka and is Kasaghna, Vata-anulomana, etc. The Kwath preparation of these drugs can provide the patient relief from respiratory disorders.

- 10. **Katphaladi kwath:** Katphala, Katrina, Bharngi, Musta, Dhanyaka (Coriandrum sativum), Vaca, Abhaya, Sringi (Pistacia chinensis), Parpataka, sunthi, Surahwa (Cedrus deodara) are the ingredients. The decoction should be consumed after adding honey and Hingu.[17]
  - The drugs *Katphala, Bharngi, Vaca, Sringi, Sunthi* and *Surahwa* are *Kapha-vatasamaka* while *Musta* and *Parpataka* are *Kapha-pittasamaka. Dhanyaka* and *Abhaya* are *Tridosha-samaka.* This *Kwatha* is effectively used in the treatment of *Kasa-swasa rogas.*
- 11. **Renukadi kwath:** Decoction of *Renuka* (*Vitex spp.*)<sup>[22]</sup> and *Pippali* taken with *Hingu* relieves all kinds of *Hikka and Swasa*.<sup>[18]</sup>

Renuka is Pittala, Kapha-vatakrit, Anushna, Tikta katu rasa and Katu vipaka. It is Dipani, Pachani, Medhya, Trit, Daha, Kandunut. Pippali is Tridosha-Samaka, Ushna, Katu etc and is Swasa-kasaghna in action and *Hingu* as discussed earlier is useful in respiratory diseases. In combination these drugs are beneficial in treating the respiratory disorders like *Swasa roga*. In respiratory diseases which are arising due to exposure to any allergy triggering factors, which may induce itching, burning sensation etc along with breathlessness, cough, etc. these type of combination well explained in Avurveda classics can show better results. As many of the allergic diseases are related to respiratory system and the skin, these drugs can be useful in treating these conditions.

*tritavadhvam churna:* The ingredients of this are 3 Lavanas, 2 Ksharas, 2 Satapushpas, Vaca, Ajamoda (Apium leptophyllum), Ajagandha (Cleome  $gynandra)^{[21]}$ , Hapusha (Juniperus communis), Dwijeeraka (Cuminum cvminum, Carum carvi), Marica, Pippali, Pippalimoola, Gajapippali (Scindapsus officinalis) [21], Hingu, Hingu patri (Gardenia gummifera)[21], Sathi, Patha (Cyclea peltata or Cissampelos parietal), Sunthi, Chitraka, Cavya (Piper chaba), Vidanga (Embelia ribes) etc. These drugs are finely powdered and *Bhavana* (triturated with) is done with *Ardraka swarasa* and *Bijapuraka rasa* and then dried. This recipe should be taken with any of these- *Ghrita, Jeerna madya, Usnodaka, Kolambhasa, Takra, Ushtra Ksheera,* etc. It is beneficial in *yakrit- Pleeharogas, Gulma, Hikka, Swasa, Kasa* etc.<sup>[19]</sup>

Most of the drugs used here are *Vata-Kaphasamaka*, *Vatanulomana*, etc and are beneficial in the management of *Swasa*, *Kasa*, *Hikka*, *Kshaya Roga*, etc. The *Lavanas* used are *Vatasamaka* except *Saindhava* which is *Tridoshahara*.

- 13. **Sunthyadi churna:** Sunthi, Sauvarchala, Hingu, Dadima (Punica granatum) and Amlavetasa are finely powdered. This powder should be taken with lukewarm water as it is useful in Swasa roga and Hridroga. [19]
  - Hingu and Sunthi are Kapha-vatasamaka, Sauvarchala is Vatahara while Dadima is Tridoshasamaka when Madhura rasa and Kapha-Vatasamaka when it is of Amla rasa variety. Dadima possesses actions like Ruchya, Hridya, Agnideepana also. This Churna preparation is effective in treating various diseases.
- 14. Hinauadi churna-Hinau. Patha, Abhaya, Dhanyaka, Dadima, Chitraka, Sathi, Ajamoda, Ajagandha, Trikatu. Hapusha, Amlavetasa, Tintidika (Tamarindus indica), Poushkara, Vaca, Cavva, Dwikshara, Pancha lavana- all are taken in equal quantity and finely powdered. It should be consumed before or along with food or with Jeerna madya, Takra or Ushnodaka. It is beneficial in Vata-kaphaja gulma, Hridgraha, Kasa, Swasa, Hikka, Grahani roga, Anaha etc.[19]

The drugs like *Hingu*, *Dadima*, *Chitraka*, *Sathi*, *Poushkara*, *Cavya*, etc are *Kapha-vata samaka* while *Abhaya*, *Dhanyaka* are *Tridoshahara*. These drugs in combination are beneficial in the management of cough, breathlessness, chest tightness etc.

15. Yogaraja guggulu: Panchakola (Pippali, Pippalimoola, Cavya, Chitraka, Nagara), fried Hingu, Ajamoda, Sarshapa (Brassica campestris), Indrayava Dwijeeraka, Renuka, (Holarrhena antidysentrica), Vidanga, Gajapippali, Katuka (Picrorhiza kurroa), Ativisha (Aconitum heterophyllum), Bharngi, Vaca, Murva (Marsdenia tenacissim)- these drugs are taken in 1 Sana quantity, Triphala (Abhaya, Amalaki- Emblica officinale, Vibheetaki- Terminalia bellerica)double the quantity and Guggulu (Commiphora *mukul*) equal to the total of all- are taken, finely powdered, then transferred to a vessel smeared with ghee, then cooked well and later rolled into

pills. This alleviates 3 *Doshas*, acts as *Rasayana*, very effective in the treatment of all types of *Vata vyadhi*, *Kustha*, *Prameha*, *Swasa*, *Kasa*, *Mandagni*, *Aruchi* etc.<sup>[20]</sup>

This is a very commonly used drug in daily practice and has beneficial effects in different systems.

#### Other Common Formulations with *Hingu*<sup>[3,7]</sup>

Hingu ashtaka churna, Hingu vacadi churna, Dwiruthara hinguvacadi churna, Hingu triguna taila, Rajapravruthini vati, Ayaskriti, Phalasarpis, Kumaryasavam etc.

### **DISCUSSION**

Ferula foetida, known as Hingu in Ayurveda is such a drug with lots of properties and actions. Theniryasa (oleo-gum resin) is Katu-tikta rasa and possess Laghu, Tikshna and Snigdha gunas. It is Kapha-Vatahara, Hridhya, etc. It is indicated in various disease conditions like Aanimandva, Swasa, Kasa, Gulma, Udara, etc. The presence of various phyto-constituents like sulfide derivatives, volatile oil, ferulic acid, etc. are the factors which provides the drugs with a number of therapeutic actions such as antispasmodic. carminative. expectorant. antimicrobial, anti-inflammatory, antioxidant, etc. It can be highly recommended in the treatment of respiratory diseases especially in asthmatic patients because of its antispasmodic, expectorant, etc. properties. Because of its antispasmodic. expectorant, etc. properties, many formulations with *Hingu* are available in the Ayurvedic texts which are beneficial in treating respiratory diseases. Its action on other systems is also of greater importance. Many preparations with *Hingu* as an ingredient are available for management of ailments of other systems of the body.

#### CONCLUSION

Asafoetida is an oleo-gum resin, which is dried latex collected from the roots and rhizomes by incision on these parts. It is well known culinary spice but also possess various therapeutic actions. Hence, it can be used for the treatment of various diseases like asthma and other respiratory disorders, gastro-intestinal diseases, etc. Various formulations are available in the Avurvedic texts which contain asafoetida as an ingredient and those related to respiratory system are discussed here. The various chemical or phyto-constituents present in the drug are properties and actions. Studies and research works have reported antiviral, anti-cancerous, etc. activities of the drug. The potential and therapeutic value of the drug is high which needs to be studied more.

#### REFERENCES

- Acharya Priyavrat Sharma & Dr. Guruprasad Sharma. Kaiyadeva Nighantu (Pathyapathya Vibodhaka) Published by Chaukhambha Orientalia, Varanasi, 1st Edition 1979, pg.no: 223, sloka no: 1209-1211.
- Vaidyaratnam P.S Varier's Arya vaidyasala Kottakkal. Indian Medicinal Plants a compendium of 500 species Vol.3, Published by: Orient Longman Private Limited, Chennai; Reprint – 2007, pg.no:13-16.
- 3. JA Kareparamban, PH Nigam, AP Jadav, VJ Kadam, Ferula foetida "Hing": A Review article, RJPBCS April-June 2012, Vol.3 Issue 2, pg.no:775-786.
- 4. RK Sharma & Bhagwan Dash Caraka Samhita [Text with English translation & critical exposition based on Cakrapani Datta's Ayurveda Dipika] (Sutrasthana) Vol.1, Published by: Chowkhamba Sanskrit Series Office, Varanasi, Reprint Edition: 2012.
- 5. Prof.K.R.Srikantha Murthy Susruta Samhita (Illustrated) (Sutrasthana) Vol.1 Published by: Chaukhambha Orientalia, Varanasi, Reprint Edition: 2010.
- 6. Dr.JLN Sastry Illustrated Dravyaguna Vijnana (Study of the Essential Medicinal Plants in Ayurveda) Vol.2 Published by: Chaukhambha Orientalia, Varanasi, Reprint Edition: 2012; pg.no: 254-257.
- 7. Prof.D.Shanth Kumar Lucas Dravyaguna-Vijnana (study of Materia Medica)- Vol.2, Published by: Chaukhambha Visvabharati, Oriental Publishers & Distributors, Varanasi, 1st Edition: 2008.
- 8. Prabhat Kumar Upadhyay, Sugandh Singh, GopalAgrawal, Vishal Kumar Vishwakarma, Pharmacological activities & Therapeutic uses of resins obtained from Ferula asafoetida Linn: A Review, April 2017, International Journal of Green Pharmacy, Vol 11(2), S240-247
- 9. Asafoetid-synonyms, etc. from www. epharmacognosy.com
- 10. Asafoetida- Etymology & other names, uses, composition, etc from www.wikipedia.com
- 11. K.R. Kirtikar & B.D. Basu Indian Medicinal Plants Text Vol.2, Published by: International Book Distributors, Dehradun, 2<sup>nd</sup> Edition: 2006; pg.no:1216-1218.

- 12. Prof. G.S Levekar, Kailash Chandra, B.P Dhar, etc. Database on Medicinal Plants used in Ayurveda & Siddha Vol.8; Published by: CCRAS, Govt. of India, New Delhi, 2007; pg. no: 125-140.
- 13. Prof.K.R.Srikantha Murthy Susruta Samhita (Illustrated) Uttarasthana, Published by: Chaukhambha Orientalia, Varanasi, Reprint Edition: 2010.
- 14. RK Sharma & Bhagwan Dash,Caraka Samhita [Text with English translation & critical exposition based on Cakrapani Datta's Ayurveda Dipika] (Cikitsa sthana) Vol.4, Published by: Chowkhamba Sanskrit Series Office, Varanasi, Reprint Edition: 2012.
- 15. Prof.K.R Srikantha Murthy Vagbhata's Ashtanga Hrdayam (Text, English translation, Notes, Appendix and Indices) (Cikitsa sthana) Vol.2, Published by: Chowkhamba Krishnadas Academy, Varanasi, Reprinted Edition: 2012; Chapter 4.
- 16. Prof.K.R Srikantha Murthy Vagbhata's Ashtanga Hrdayam (Text, English translation, Notes, Appendix and Indices) (Cikitsa sthana) Vol.2, Published by: Chowkhamba Krishnadas Academy, Varanasi, Reprinted Edition: 2012; Chapter 1.
- 17. Sahasrayogam with Sujanapriya Vyakhyanam, by Vidyarambham publishers.
- 18. Ayurveda-Vidwan Prof. K.R.Srikantha Murthy Sarngadhara Samhita- A treatise on Ayurveda by Sarngadhara translated in English Published by: Chaukhambha Orientalia, Varanasi, Reprint Edition: 2012, Chapter 2.
- 19. Ayurveda-Vidwan Prof. K.R.Srikantha Murthy Sarngadhara Samhita- A treatise on Ayurveda by Sarngadhara translated in English Published by: Chaukhambha Orientalia, Varanasi, Reprint Edition: 2012, Chapter 6.
- 20. Ayurveda-Vidwan, Prof.K.R.Srikantha Murthy Sarngadhara Samhita- A treatise on Ayurveda by Sarngadhara translated in English Published by: Chaukhambha Orientalia, Varanasi, Reprint Edition: 2012, Chapter 7.
- 21. Citron fruit: citrus medica uses, dose, research, etc from www.easyayurveda.com
- 22. Dr.Bulusu Sitaram Bhavaprakasa of Bhavamisra (Original text along with commentary and translation including Nighantu portion) Vol.1 Published by: Chaukhambha Orientalia, Varanasi, Reprint Edition: 2012, Chapter 6 (III) Karpooradi Varga, pg. no: 221-222, sloka no: 105-106.

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