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### Review Article

#### A CLASSICAL DRUG REVIEW ON VIDANGADI LAUHA W.S.R. TO MADHUMEHA (DIABETES MELLITUS TYPE - II)

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#### ABSTRACT

**Background:** *Medhumeha* is a *Santarpanajanya Vyadhi*. In India, it is increasing rapidly in the urban population and today become the diabetic capital of the world with approximately 33 million adults with diabetes and is likely this number will increase to 57 million by 2025. *Vidangadi Lauha* is a formulation consists of herbal drugs as mentioned in *Bhaishaja Ratanavali* with the applicability in *Medumeha* (Diabetes mellitus Type - II). **Material and Methods:** Ayurvedic texts, as well as the data bases web-based search engines, journal, were used to search for relevant literature and information. **Result:** *Vidangadi Lauha* referred in *Bhaishaja Ratanavali* was reviewed, analysed in detail and showed the dominance of *Tikta-Katu-Kashaya Rasa*, *Laghu-Ruksha Guna*, *Ushna Virya*, *Katu Vipaka* and *Deepan Paachan* properties might have corrected *Kapha Dushti* and removes *Medodhatwagnimandya* which corrected *Medo Dhatu Dushti* and having *Pramehara* property directly acting on etiopathogenesis of *Madhumeha*. Pharmacological activity like anti-diabetic effect were also reported. **Conclusion:** Scientific validation of *Vidangadi Lauha* has proved the efficacy in reducing the sugar level could be considered as of possible therapeutic value.

**Keywords:** Diabetes mellitus Type - II, *Madhumeha*, *Medo Dhatu Dushti*, *Vidangadi Lauha*.

#### 1. INTRODUCTION

Hyperglycemia, hyperlipidemia, hyperaminoacidemia, and hypoinsulinemia are the hallmarks of diabetes mellitus, a systemic metabolic disease that results in a reduction in the amount of insulin secreted by the pancreatic beta cells. Hyperglycemia, hyperlipidemia, hyperaminoacidemia, and hypoinsulinemia are the hallmarks of diabetes mellitus, a systemic metabolic disease that results in a reduction in the amount of insulin secreted by the pancreatic beta cells.<sup>i</sup> The prevalence of diabetes is predicted to rise globally from 4% in 1995 to 5.4% by 2025. This is a growing issue worldwide, particularly in India, where the urban population is growing at a rapid rate, making it the diabetic capital of the world. There are currently about 33 million adults with diabetes in India, and by 2025, that number is probably going to rise to 57 million<sup>ii</sup>.

Ninety percent of people with diabetes have type II diabetes, or insulin-independent diabetes, which is more common and can be treated with diet, exercise, and medication. Both of these conditions cause hyperglycemia, which in turn causes the acute signs of diabetes, such as blurred vision, nausea, vomiting, lethargy, irritability, mood swings, and frequent urine production, which results in unusual thirst and increased fluid intake<sup>2</sup>.

In *Ayurvedic* texts the given characteristic features of *Madhumeha* shows marked similarity with the syndrome of Type 2 Diabetes. It is *Tridoshaja Vyadhi*, *Acharyas* have mainly emphasized on vitiation of *Kapha Dosha*, *Medovridhhi* and *Medodhatwagnimandhya*. According to *Charak* major causative factor (*Nidana*) of *Madhumeha* are *Madhura*, *Amla*, *Lavana Rasa* dominant diet mentioned as '*Gramya Udaka Aanupa Rasa Payansi Dadhini*'<sup>iii</sup> and life style such as '*Aasya Sukham Swapna Sukham*'<sup>iv</sup> are similar to the causes quoted as over eating, eating of large amount of carbohydrates mainly sugar rich substances, dairy products, practicing sedentary life style, overweight in modern medical literature. *Sushruta* has mentioned *Sahaj* and *Apathya-Nimattaja* varieties of *Madhumeha*. All these factors described in different texts of *Ayurveda* implies that life style plays important role in progression of *Madhumeha*.

*Vidangadi Lauha* is a formulation consists of herbal drugs as mentioned in *Bhaishaja Ratanavaliv*. Present review is aimed at gathering the information about the details of the constituents of this formulation along with the applicability of this formulation in *Medumeha* (Diabetes mellitus Type – I)

## 2. MATERIALS AND METHODS

### 2.1. Method of review

All the relevant *Ayurvedic* texts, as well as the data bases Google scholar, PubMed, Medline, AYUSH Research Portal, and Digital Helpline for *Ayurveda* Research Articles (DHARA), dissertation works from *Ayurveda* colleges, studies available on Research Gate web-based search engines, journal, were used to search for relevant literature and presented in systematic manner.

### 2.2. Procurement of Trial Drugs

All the trial drugs i.e. *Vidangadi Lauha* was identified.

### 2.3. Preparation of Drugs

All the drugs were prepared as per the method of preparation of *Vatikalpana* as mentioned in *Sharangadhara Samhita*<sup>vi</sup> in Pharmacy of S.G.M.P.G *Ayurvedic* Medical College and Hospital Saheri, Ghazipur.

### 2.4. Materials for *Vidangadi Lauha*

Description of Ingredients of *Vidangadi Lauha*, with English / Latin name, Part used and its quantities are as given in Table 1:

**Table 1: Ingredients of '*Vidangadi Lauha*'**

Sr. No	Name of Drugs	Botanical name/ English Name	Part used	Proportion
1.	<i>Vidanga</i>	<i>Embelia ribes</i> Burm.	Fruit	1 part
2.	<i>Haritaki</i>	<i>Terminalia chebula</i> Retz.	Fruit	1 Part
3.	<i>Bibhitaki</i>	<i>Terminalia belerica</i> Roxb.	Fruit	1 Part
4.	<i>Amalaki</i>	<i>Embelica officinalis</i> Gaertn.	Fruit	1 Part
5.	<i>Musta</i>	<i>Cyperus rotundus</i> Linn.	Rhizome	1 Part
6.	<i>Pippali</i>	<i>Piper longum</i> Linn.	Root	1 Part
7.	<i>Sunthi</i>	<i>Zingiber officinale</i> Roxb.	Rhizome	1 Part
8.	<i>Jiraka</i>	<i>Cuminum cyminum</i> Linn.	Fruit	1 Part
9.	<i>Krishnajiraka</i>	<i>Carum carvi</i> Linn.	Fruit	1 Part
10.	<i>Lauha Bhasma</i>	<i>Ferrum</i>	----	9 Part

## 3. RESULT

The pharmacological properties of the formulation can be explained on the basis of the individual drug properties as mentioned below:

### 1. VIDANGA

<b>Latin Name</b>	<i>Embelia ribes</i> Burn.
<b>Family</b>	<i>Myrsinaceae</i>
<b>Synonyms</b>	<i>Vidanga, Chitratandul, Jantunasan, Jantug, Krishnatandula, Vatari.</i>
<b>Vernacular Name</b>	<ul style="list-style-type: none"> <li>English Name: <i>Embelia</i></li> <li>Hindi Name: <i>Vaividanga</i></li> </ul>
<b>Classical Categorization:</b>	<ul style="list-style-type: none"> <li><i>Charakasamhita: Krumighna, Kusthaghna, Truptighna</i></li> <li><i>Susrutasamhita: Sursadi, Pippalyadi</i></li> </ul>
<b>Part Used</b>	<ul style="list-style-type: none"> <li>Fruits</li> </ul>
<b>Rasapanchaka</b>	<ul style="list-style-type: none"> <li><i>Rasa: Katu</i></li> </ul>

	<ul style="list-style-type: none"> <li>• <b>Guna:</b> Laghu, Ruksha, Tikshna</li> <li>• <b>Virya:</b> Ushna</li> <li>• <b>Vipaka:</b> Katu</li> <li>• <b>Doshaghnata:</b> Kapha Vatahara</li> </ul>
<b>Karma</b>	<ul style="list-style-type: none"> <li>• Dipana, Pachana, Krimighna, Anulomana.</li> </ul>
<b>Rogaghnata</b>	<ul style="list-style-type: none"> <li>• Krimidanata, Dantashoola, Agnimandhya, Vamana, Udarashoola, Krimi, Gandamala, Mutrakrichaha, Ajirna</li> </ul>
<b>Chemical constituents</b>	<ul style="list-style-type: none"> <li>• The main active component is Embelin [2-5 dihydroxy 3-undecyl-1, 4 benzoquinone] Embelic acid, christembeline, an alkaloid, resinoid, volatile oil, Quercitol &amp; fatty ingredients. Embelin reacts quantitatively with formaldehyde to give vidangin [methylene-his-2-5-dihydroxy-4-undecyl-3-6-benzoquinones].</li> </ul>

## 2. HARITAKI

<b>Latin Name</b>	<i>Terminalia chebula</i> Retz.
<b>Family</b>	Combretaceae
<b>Synonyms</b>	<i>Abhaya, Kayastha, Shiva, Pathya, Vijaya, Amruta, Shiva, Rohini, Vijaya, Chetaki, Putana, Haimavatya, Shreyasi, Jivanti.</i>
<b>Vernacular Name</b>	<ul style="list-style-type: none"> <li>• <b>English Name:</b> Myrobalan</li> <li>• <b>Hindi Name:</b> Harad</li> </ul>
<b>Classical Categorization:</b>	<ul style="list-style-type: none"> <li>• <b>Charakasamhita:</b> <i>Jwavarghna Mahakashaya, Prajasthapana Mahakashaya, Kusthaghna Mahakashaya, Kasaghna Mahakashaya, Arshoghna Mahakashaya</i></li> <li>• <b>Susrutasamhita:</b> <i>Triphala Gana, Amalakyadi Gana, Parusakadi Gana, Trivrutadi Gana</i></li> </ul>
<b>Part Used</b>	<ul style="list-style-type: none"> <li>• Fruits</li> </ul>
<b>Rasapanchaka</b>	<ul style="list-style-type: none"> <li>• <b>Rasa:</b> Kashaya, Katu, Tikta, Amala, Madhura</li> <li>• <b>Guna:</b> Laghu, Ruksha</li> <li>• <b>Virya:</b> Ushna</li> <li>• <b>Vipaka:</b> Madhura</li> <li>• <b>Doshaghnata:</b> Tridoshahara</li> </ul>
<b>Karma</b>	<ul style="list-style-type: none"> <li>• <i>Vedanasthapana, Rasayana, Vranashodhana, Vranaropana, Brimhaniya, Dipana, Pachana, Medhya, Krimighna, Kushthaghna, Chakshushya, Anulomana.</i></li> <li>• <b>Externally:</b> <i>Vranashodhana-Ropana, Vedanasthapana, Shothahara.</i></li> <li>• <b>Internally:</b> <i>Buddhi-Indriya Balya, Dipana, Srotoshodhana, Yakruttejaka, Shothahara, Shonitasthapana, Anulomana, Krumighna, Mrudurechana, Rasayana, Vrushya, etc.</i></li> <li>• Haritaki has been considered as <i>Pathya</i> (wholesome to everyone). Its actions are <i>Ayushya, Varnya, Vayahstapani, Paushtika</i> and <i>Medhya</i> etc.</li> </ul>
<b>Rogaghnata</b>	<ul style="list-style-type: none"> <li>• <i>Vibandha, Aruchi, Udavarta, Gulma, Udararoga, Arsha, Pandu, Shotha, Jirnajwara, Vishamajwara, Prameha, Shiroroga, Kasa, Tamakashwasa</i><sup>vii</sup></li> </ul>
<b>Chemical constituents</b>	<ul style="list-style-type: none"> <li>• Tannic acid, chebulinic acid, glycoside, anthraquinones, Chebulegic acid, Tercnebin, Vitamin C, Benzoic, srearic acid (flower), malic acid (leaves) and polyphenolic compounds<sup>viii</sup>.</li> </ul>

### 3. BIBHITAKI

<b>Latin Name</b>	<i>Terminalia belerica</i> Roxb.
<b>Family</b>	Combretaceae
<b>Synonyms</b>	<i>Aksha, Karshaphala, Karshaphala, Bhutavasa, kalidruma, Karnaphala.</i>
<b>Vernacular Name</b>	<ul style="list-style-type: none"> <li>• <b>English Name:</b> Beleric Myrobalan</li> <li>• <b>Hindi Name:</b> Baheda, Finasa, Bahera</li> </ul>
<b>Classical Categorization:</b>	<ul style="list-style-type: none"> <li>• <b>Charakasamhita:</b> <i>Jvarahara Mahakashaya, Virechanopaga Mahakashaya</i></li> <li>• <b>Sushrutasamhita:</b> <i>Triphala Gana, Mustadi Gana</i></li> <li>• <b>Vagbhata:</b> <i>Mustadi.</i></li> </ul>
<b>Part Used</b>	<ul style="list-style-type: none"> <li>• Fruit rind, Seed, seed kernal</li> </ul>
<b>Rasapanchaka</b>	<ul style="list-style-type: none"> <li>• <b>Rasa:</b> <i>Kashaya</i></li> <li>• <b>Guna:</b> <i>Ruksha, Laghu</i></li> <li>• <b>Virya:</b> <i>Usana</i></li> <li>• <b>Vipaka:</b> <i>Madhura</i></li> <li>• <b>Doshakarma:</b> <i>Kaphahara, Tridoshaghna</i></li> </ul>
<b>Karma</b>	<ul style="list-style-type: none"> <li>• <i>Kaphapittajita, Bhedaka, Kruminasana, Chakshusya, Keshya, Kasahara<sup>ix</sup></i></li> <li>• <b>Externally:</b> <i>Shothahara, Vedanasthapana, Raktastabhana</i></li> <li>• <b>Internally:</b> It is useful in <i>Kasa, Krimi</i>. Fruits are useful in Bronchitis, sore throat, inflammation, Asthma, etc. The bark is useful in Anaemia and leucoderma.</li> </ul>
<b>Rogagnata</b>	<ul style="list-style-type: none"> <li>• <i>Svarabheda, Netraroga, Kasa, Pittajvara, Mamsa-Medo-Dosha, Chhardi, Krumiroga, Vibandha<sup>x</sup>.</i></li> </ul>
<b>Chemical constituents</b>	<ul style="list-style-type: none"> <li>• Gallic acid, tannic acid, ellagic acid, fructose, galactose, mannitol, bellericanin and glycosides<sup>xi</sup>.</li> </ul>

### 4. AMALAKI

<b>Latin Name</b>	<i>Emblica officinalis</i> Gaertn.
<b>Family</b>	Euphorbiaceae.
<b>Synonyms</b>	<i>Vayastha, Vrushya, Jatiphalarasa, Shiv, Dhatriphala, Shreephala, Amrutaphala</i>
<b>Vernacular Name</b>	<ul style="list-style-type: none"> <li>• <b>English Name:</b> Indian Gooseberry</li> <li>• <b>Hindi Name:</b> Amla, Aonla</li> </ul>
<b>Classical Categorization:</b>	<ul style="list-style-type: none"> <li>• <b>Charak:</b> <i>Jvaraghna, kasaghna, Virechnopaga, Kusthaghna, Vayasthapana.</i></li> <li>• <b>Shushruta:</b> <i>Amalakyadi, Parushkadi, Triphala.</i></li> <li>• <b>Vagbhata:</b> <i>Parushakadi.</i></li> </ul>
<b>Part Used</b>	<ul style="list-style-type: none"> <li>• Root, Bark, Leaf, Fruit, Seed.</li> </ul>
<b>Rasapanchaka</b>	<ul style="list-style-type: none"> <li>• <b>Rasa:</b> <i>Amlapradhana, Pancharasa (Lavanavarjita)</i></li> <li>• <b>Guna:</b> <i>Laghu, Sara, Mrudu, Ruksha</i></li> <li>• <b>Virya:</b> <i>Sheeta</i></li> <li>• <b>Vipaka:</b> <i>Madhura</i></li> <li>• <b>Doshakarma:</b> <i>Tridoshashamaka</i></li> </ul>
<b>Karma</b>	<ul style="list-style-type: none"> <li>• <i>Chedana, Upasho-shana, Kledashodhana, Vrishya, Rasayana, Medhya</i></li> </ul>

<b>Rogagnata</b>	<ul style="list-style-type: none"> <li>• <i>Prameha, Jwara, Adhmana, Shosha, Trushna, Raktapitta, Amlapitta, Daha.</i><sup>xii</sup></li> </ul>
<b>Chemical constituents</b>	<ul style="list-style-type: none"> <li>• Its fruit contains vit C, phyllembin, linolic acid, indole acetic acid, terchebin, corilagin, ellagic acid and phyllembic acid.</li> <li>• In root, ellagic acid, lupeol, and oleanolic aldehyde are present.</li> <li>• Bark - leucodelphinidin, procyanidin, tannin etc.</li> <li>• Ascorbic acid and gallotannins<sup>xiii</sup>.</li> </ul>
<b>Actions &amp; Uses</b>	<ul style="list-style-type: none"> <li>• The fruits are astringent, cooling, anodyne, carminative, digestive, laxative and tonic.</li> <li>• Useful in dyspepsia, colic, flatulence, hyperacidity, peptic ulcer, headache, anaemia.</li> </ul>

### 5. MUSTA

<b>Latin Name</b>	<i>Cyperus rotundus</i> Linn.
<b>Family</b>	Cyperaceae
<b>Synonyms</b>	<i>Varida, Mustaka, Kuruvinda</i>
<b>Vernacular Name</b>	<ul style="list-style-type: none"> <li>• <b>English Name:</b> Nut grass</li> <li>• <b>Hindi Name:</b> Motha</li> </ul>
<b>Classical Categorization:</b>	<ul style="list-style-type: none"> <li>• <b>Charakasamhita:</b> <i>Lekhaniya, Trishnanigrahana, Kandughna.</i></li> <li>• <b>Sushrutasamhita:</b> <i>Mustadi, Vachadi.</i></li> <li>• <b>Vagbhata:</b> <i>Mustadi, Vachadi.</i></li> </ul>
<b>Part Used</b>	<ul style="list-style-type: none"> <li>• Rhizome</li> </ul>
<b>Rasapanchaka</b>	<ul style="list-style-type: none"> <li>• <b>Rasa:</b> <i>Tikta, Katu, Kashaya</i></li> <li>• <b>Guna:</b> <i>Laghu, Ruksha</i></li> <li>• <b>Virya:</b> <i>Sheeta</i></li> <li>• <b>Vipaka:</b> <i>Katu</i></li> <li>• <b>Doshakarma:</b> <i>Kaphapittashamaka</i></li> </ul>
<b>Karma</b>	<ul style="list-style-type: none"> <li>• <i>Dipana, Ama-pachana, Lekhana, Shothahara, Grahi, Krumighna, Vishaghna</i></li> </ul>
<b>Rogagnata</b>	<ul style="list-style-type: none"> <li>• <i>Aruchi, Atisara, Agnimandya, Trisna, Raktavikara, Kasa, Mutrakrichha, Rajorodha, Stanyavikaara, Charmavikara, Kandu, Kushtha, Jvara, Dourbalya, Visha, Mastishkadourbalya, Vatarakta, Madatyaya, Vrana.</i></li> </ul>
<b>Chemical constituents</b>	<ul style="list-style-type: none"> <li>• Cineol copadiene, copaene, cyperen 1 &amp; 2, cyperenone, isopatchoulone, cyperotundone, cyperol, cyperolone, æ – cyperone, epoxyguaiene, isocyperol, isokobusone, kobusone, mustakone, patchulene, rotundone, æ &amp; β selinene, sugenol, β sitosterol etc.</li> </ul>
<b>Actions &amp; Uses</b>	<ul style="list-style-type: none"> <li>• Useful in anorexia, flatulence, colic, vomiting, dysentery.</li> </ul>

### 6. PIPPALI

<b>Latin Name</b>	<i>Piper longum</i> Linn.
<b>Family</b>	Piperaceae
<b>Synonyms</b>	<i>Pippali, Maagadhi, Vaidehi, Kanaamula, Katushna, Chapala, Ushna, Upkulya, Tikshnatandula, Chatakshira, Ushna.</i>
<b>Vernacular Name</b>	<ul style="list-style-type: none"> <li>• <b>English Name:</b> Piper</li> <li>• <b>Hindi Name:</b> Pippali</li> </ul>
<b>Classical Categorization:</b>	<ul style="list-style-type: none"> <li>• <b>Charakasamhita:</b> <i>Kasahara, Shoolaprashamana</i></li> <li>• <b>Sushrutasamhita:</b> <i>Pippalyadi, Shirovirechana</i></li> </ul>
<b>Part Used</b>	<ul style="list-style-type: none"> <li>• Fruit</li> </ul>
<b>Rasapanchaka</b>	<ul style="list-style-type: none"> <li>• <b>Rasa:</b> <i>Katu</i></li> <li>• <b>Guna:</b> <i>Laghu, Snigdha, Tikshna</i></li> </ul>

	<ul style="list-style-type: none"> <li>• <b>Virya:</b> Anushna Sheeta</li> <li>• <b>Vipaka:</b> Madhura</li> <li>• <b>Doshakarma:</b> Kaphavatashamaka</li> </ul>
<b>Karma</b>	<ul style="list-style-type: none"> <li>• Deepana, Vatanulomana, vatahara, Jantughna, Medhya, Balya, Krimighna, Rasayana</li> </ul>
<b>Rogagnata</b>	<ul style="list-style-type: none"> <li>• Agnimandya, Aruchi, Ajirna, Gulma, Krimiroga, Arsha, Pandu, Daurbalya, Pleehavridhi</li> </ul>
<b>Chemical constituents</b>	<ul style="list-style-type: none"> <li>• Two alkaloids piper longumine and piper longuminine, zingiberene, piperine, pipartine, carbonyl compound, alkaloids pipemonanaline, piprunde caalidine.</li> </ul>
<b>Actions &amp; Uses</b>	<ul style="list-style-type: none"> <li>• Dried spikes are carminative, tonic, laxative, digestive, and antiseptic. They are useful in anorexia, dyspepsia, flatulence, colic, diarrhoea, gastric disorders.</li> </ul>

### 7. SUNTHI

<b>Latin Name</b>	<i>Zingiber officinale</i> Roxb.
<b>Family</b>	Zingiberaceae
<b>Synonyms</b>	<i>Kaphari, Vishva, Nagara, Mahausadha, Visvabhesaja</i>
<b>Vernacular Name</b>	<ul style="list-style-type: none"> <li>• <b>English Name:</b> Ginger</li> <li>• <b>Hindi Name:</b> Sonth</li> </ul>
<b>Classical Categorization:</b>	<ul style="list-style-type: none"> <li>• <b>Charakasamhita:</b> <i>Truptighna, Deepaniya, Arshoghna, Shoolaprashamana</i></li> <li>• <b>Sushrutasamhita:</b> <i>Pippalyadi, Trikatu</i></li> <li>• <b>Bhavprakash:</b> <i>Panchakola, Shadushana</i></li> </ul>
<b>Part Used</b>	<ul style="list-style-type: none"> <li>• Rhizome</li> </ul>
<b>Rasapanchaka</b>	<ul style="list-style-type: none"> <li>• <b>Rasa:</b> <i>Katu</i></li> <li>• <b>Guna:</b> <i>Laghu, Snigdha</i></li> <li>• <b>Virya:</b> <i>Ushna</i></li> <li>• <b>Vipaka:</b> <i>Madhura</i></li> <li>• <b>Doshagnata:</b> <i>Vata-Kaphashamaka</i></li> </ul>
<b>Karma</b>	<ul style="list-style-type: none"> <li>• Vedanasthapana, Vatashamaka, Sheetaprashamaka, Rochana, Deepana, Pachana, Triptighna, Vatanulomana, Bhedana, Grahi</li> </ul>
<b>Rogagnata</b>	<ul style="list-style-type: none"> <li>• Aruchi, Chhardi, Agnimandya, Ajirna, Vibandha, Anaha, Gulma, Udarashoola, Arsha, Hridroga, Sheetapita</li> </ul>
<b>Chemical constituents</b>	<ul style="list-style-type: none"> <li>• Heptane, isovaloraldehyde, camphene, casinine, myrecene, limonene, gingerol, zingerone, ginger glycolipids A, B, C, gingersols, cysteine, leucine and arginine</li> </ul>
<b>Actions &amp; Uses</b>	<ul style="list-style-type: none"> <li>• The dry ginger is emollient, appetizer, laxative, stomachic, stimulant, anthelmintic and carminative. It is useful in dyspepsia, piles, hyperacidity, abdominal pain and vomiting.</li> </ul>

### 8. JIRAKA

<b>Latin Name</b>	<i>Cuminum cyminum</i> Linn.
<b>Family</b>	Apiaceae
<b>Synonyms</b>	<i>Medhya, Ajaji, Dipaka, Dirghaka, Auttara Patha, Jarana</i>
<b>Vernacular Name</b>	<ul style="list-style-type: none"> <li>• <b>English Name:</b> Cumin seeds</li> <li>• <b>Hindi Name:</b> Safeed Jeera</li> </ul>
<b>Classical Categorization:</b>	<ul style="list-style-type: none"> <li>• <b>Charakasamhita:</b> <i>Shoolaprashamana</i></li> <li>• <b>Sushrutasamhita:</b> <i>Pippalyadi</i></li> <li>• <b>Vagbhata:</b> <i>Pippalyadi</i></li> </ul>
<b>Part Used</b>	<ul style="list-style-type: none"> <li>• Fruits</li> </ul>

<b>Rasapanchaka</b>	<ul style="list-style-type: none"> <li>• <b>Rasa:</b> <i>Katu</i></li> <li>• <b>Guna:</b> <i>Laghu, Ruksha</i></li> <li>• <b>Virya:</b> <i>Ushna</i></li> <li>• <b>Vipaka:</b> <i>Katu</i></li> <li>• <b>Doshaghnata:</b> <i>Kapha-Vata shamaka</i></li> </ul>
<b>Karma</b>	• <i>Vrushya, Deepana, Pachana, Garbhasaya Shodhaka, Grahi</i>
<b>Rogaghnata</b>	• <i>Krimi, Jirna Jwara, Adhmana, Kustha, Grahani, Atisara, Gulma, Netra roga.</i>
<b>Chemical constituents</b>	• It contain 3.5 to 5.2 % volatile oil called as tymene. Cuminin, diacyl glycerol, oxalic, cuminaldehyde, p-cymene etc.
<b>Actions &amp; Uses</b>	• The paste is an anti-inflammatory and analgesic action. It alleviates the inflammation of uterus it is also a galactogogue and aphrodisiac. It is used in leucorrhoea.

### 9. KRISHNAJIRAKA

<b>Latin Name</b>	<i>Carum carvi</i> Linn.
<b>Family</b>	<i>Apiaceae</i>
<b>Synonyms</b>	<i>Asitajiraka, Krishnajiraka</i>
<b>Vernacular Name</b>	<ul style="list-style-type: none"> <li>• <b>English Name:</b> Black Caraway</li> <li>• <b>Hindi Name:</b> Kala Jeera</li> </ul>
<b>Part Used</b>	• Fruits
<b>Rasapanchaka</b>	<ul style="list-style-type: none"> <li>• <b>Rasa:</b> <i>Katu</i></li> <li>• <b>Guna:</b> <i>Laghu, Ruksha</i></li> <li>• <b>Virya:</b> <i>Ushna</i></li> <li>• <b>Vipaka:</b> <i>Katu</i></li> <li>• <b>Doshaghnata:</b> <i>Kapha-Vata shamaka</i></li> </ul>
<b>Karma</b>	• <i>Deepana, Aruchi, Agnimandya, Mukha durgandhanashana</i>
<b>Rogaghnata</b>	• <i>Ajirna, Gulma, Udarashoola, Krimi</i>
<b>Chemical constituents</b>	• The major compounds occurring in caraway are carvacrol, carvone, $\alpha$ -pinene, limonene, $\gamma$ -terpinene, linalool, carvenone, and p-cymene, whereas the major compounds occurring in cuminaldehyde, limonene, $\alpha$ - and $\beta$ -pinene, 1,8-cineole, o- and p-cymene, $\alpha$ - and $\gamma$ -terpinene, safranal and linalool.
<b>Pharmacological actions</b>	• It possess anti-oxidant, diuretic, anti-diabetic, anti-microbial activities.
<b>Actions &amp; Uses</b>	• Caraway was used for gastrointestinal cramps and feelings of fullness, as well as nervous cardiac-gastric complaints, in spasmodic gastrointestinal complaints, flatulence, irritable stomach, indigestion, lack of appetite, dyspepsia in adults, and in relieving flatulent colic of infants.

### 10. LAUHA BHASMA

<b>Latin Name</b>	<i>Ferrum.</i>
<b>Rasapanchaka</b>	<ul style="list-style-type: none"> <li>• <b>Rasa:</b> <i>Tikta, Madhura, Kashaya</i></li> <li>• <b>Guna:</b> <i>Guru, Ruksha</i></li> <li>• <b>Virya:</b> <i>Sheeta</i></li> <li>• <b>Vipaka:</b> <i>Madhura</i></li> <li>• <b>Doshaghnata:</b> <i>Kapha-Pitta shamaka</i></li> </ul>
<b>Karma</b>	• <i>Deepana, Lekhana, Balya, Medhya, Vrishya, Rasayana, Sarvavyadhihara</i>

<b>Rogagnata</b>	<ul style="list-style-type: none"> <li>• <i>Raktapitta, Kasa, Shwas, Palita, Shula, Amlapitta, Pandu, Kamala, Mutrakriccha</i></li> </ul>
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**Table No. 2: Average of Pharmacodynamics of *Vidangadi Lauha***

Properties	Observations in <i>Vidangadi Lauha</i>	
	Total No. of Drugs	Percentage%
<b>Rasa</b>		
<i>Madhura</i>	3/10	30
<i>Amla</i>	2/10	20
<i>Katu</i>	8/10	80
<i>Lavana</i>	0/10	00
<i>Tikta</i>	4/10	40
<i>Kashaya</i>	6/10	60
<b>Guna</b>		
<i>Guru</i>	2/10	20
<i>Laghu</i>	8/10	80
<i>Ruksha</i>	8/10	80
<i>Snigdha</i>	2/10	20
<i>Tikshna</i>	2/10	20
<b>Vipaka</b>		
<i>Madhura</i>	6/10	60
<i>Katu</i>	4/10	40
<b>Virya</b>		
<i>Ushna</i>	6/10	60
<i>Sheeta</i>	3/10	30
<i>Anushna Sheeta</i>	1/10	10
<b>Doshagnata</b>		
<i>Tridosahara</i>	4/10	70
<i>Kapha-Vatahara</i>	5/10	80
<i>Kapha-Pittahara</i>	1/10	10
<b>Karma</b>		
<i>Dipana</i>	8/10	80
<i>Vrushya</i>	7/10	70
<i>Pachana</i>	6/10	60
<i>Rasayana</i>	5/10	50
<i>Anulomana</i>	4/10	40
<i>Medonashaka</i>	4/10	40
<i>Trushnanigraha</i>	4/10	40
<i>Balya</i>	4/10	40
<i>Lekhaniya</i>	3/10	30
<i>Chakshushya</i>	3/10	30
<i>Dahaprashamana</i>	1/10	10

#### 4. DISCUSSION

In *Ayurveda*, disease diabetes mellitus can be correlated with *Madhumeha*. It is *Tridoshaja* in origin with predominance of *Kapha*. The ingredients of *Vidangadi Lauha* consists of *Vidanga, Triphala, Musta, Pippali, Sunthi, Jiraka, Krishnajiraka, and Lauha Bhasma*. There are many drugs are described alone or in combination in various *Ayurvedic* classics in *Madhumeha*. One of the main content (9 parts) in the *Vidangadi Lauha* is *Lauha*. It mainly acts on *Mutravaha Srotas*. It is effective on main dosha i.e. *Apana Vayu*.

*Vidangadi Lauha* showed the dominance of *Kashaya, Katu* and *Tikta Rasa*. *Katu Vipaka* and *Ushna Virya* with the dominance of *Ruksha* and *Laghu Guna*. Therefore they are effective on main *Dushya* i.e. *Bahudrava Shleshma*. It is able to control *Kaphadosha & Medodushti* mainly, which are main *Dushya* in *Madhumeha*. Majority of *Dravya* have *Agnideepana, Amapachana, Rasayana, Vushya, Anulomana, Trushna nigraha,*

*Chakshusya, Lekhana and Medohara* properties. *Rasayana* property helps in reducing *Daurbalya, Klama, Hasta-padatala Daha* and *Karpada Suptata*.

All the *Dravya* have *Deepana Pachana* properties mainly *Deepana, Pachana* property reduces the *Ama* present in the body. Its helps to improve disturbed metabolism. Therefore, it mainly acts on *Dhatvagnimandya* and has been proved very effective in all sign and symptoms like *Shithilangta, Aalasya, Virrshariragandha, Tantra, Trushnanigraha* and property reducing *Pipasa*. (Table 1 & 2).

*Vidangadi Lauha* has pharmacological activity like anti-oxidant and anti-diabetic effect and in reducing the blood sugar level could be due to the antioxidant mechanisms, free radical scavengers which is a key step<sup>xiv</sup>.

## 5. CONCLUSION

The classical formulation *Vidangadi Lauh* is a very unique which finds its great utility in management of *Medumeha* (Diabetes mellitus Type - II) and therefore need scientific evaluation through pharmacological and clinical studies to validate the same. Large scale manufacturing and multiples of clinical trials can be useful for generation of large amount of clinical trial data.

## CONSENT

It is not applicable.

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## COMPETING INTEREST

Authors have declared that no competing interest exist.

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