**KULATHA: THERAPEUTIC APPROACH- A COMPREHENSIVE REVIEW**

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**ABSTRACT**

Ayurveda for the achievement of long, happy and healthy life has described *Trayopasthamba* (three sub pillars of life) - *Ahara, Nilra* and *Brahmacharya*. Among these *Ahara* is considered as the foremost sustainer of life. The classics have enumerated various food articles which come under the purview of food as well as medicine. *Kulatha* is one such dietary article having multiplicity in use from time immemorial. It can be utilized in different therapeutic conditions as food and also as medicine. They are good sources of proteins, which help to supplement cereals by improving their protein nutritive value. They also provide optimum quantities of minerals, vitamins and dietary fibre. It can be used as medicine both internally and externally. From Vedic period onwards different Ayurvedic samhitas has mentioned the pharmacological properties of *Kulatha*. It has been included under the Pathyas of many diseases such as Premeham, Amavatam, Swasam etc. In Ayurvedic classics under the *Kritannakalpana supa, Holaka* and *Yusha* are mentioned with *Kulatha*. Different preclinical and clinical trials has proved *Kulatha* as non toxic and therapeutically effective. *Kulatha* is cost effective and can be useful for the prevention as well as for the duration of diseases.

**KEYWORDS**: Trayopasthamba, Ahara, Kulatha, Kritanna.

**INTRODUCTION**

Ayurveda for the achievement of long, happy and healthy life has described *Trayopasthamba* (three sub pillars of life) - *Ahara, Nilra* and *Brahmacharya*. *Ahara* replenishes the subtle elements of the body, *Nilra* soothes the body and mind and observance of *Brahmacharya* is conducive for spiritual well being. Among these *Ahara* is considered as the foremost sustainer of life.[1] The classics have enumerated various food articles which come under the purview of food as well as medicine. *Kulatha* (Horse gram) is one such dietary substance. Horse gram was considered Horse fodder and its full potential as a part of the human diet has not been exploited completely. It is high in protein and iron which makes it a wholesome food that should be added to the diet on a regular basis.

**Kulatha**

Horse gram, popularly known as the “poor man’s pulse crop”, is one of the hardest among legume crops. The horse gram is normally used to feed horses, though it is also commonly used in dishes. In traditional Ayurvedic cuisine, horse gram is considered a food with medicinal qualities. The word *Kulatha* derived from the root word - *kul+stha + ka*. *Nirukti* of *Kulatha* is “Kulambhoonmilagnam sat tishtati” which means that one which stays deep rooted in the ground[3].

**Latin name**: Dolichos biflorus Linn  
**Family**: Fabaceae  
**Species**: Vigna unguiculata (Lin.) Walp., Dolichos unguiculata, Dolichos uniflorum (Lamk.), Macrotyloma uniflorum.[4]

**Historical review of Kulatha**

The popularity of *Kulatha* as an important food grain remains unchallenged from the Vedic period to the present era.

**Samhita period**

Acharya Charaka has mentioned *Kulatha* in Swedopagana and Shimbhidanyakavarga[5]. Susruta included it among *Artavajanakadrayva* and Dhanyavarga [6]. Vagbhata in Ashtangahrudaya cited *Kulatha* among Dhanyavarga only[7]. Ashatangasamgraha included it under Sodhanaadigana (*Asthapanagana*).[8]

**Nighantu period**


**Botanical description**

A branched sub-erect or trailing annual with small trifoliate leaves, bearing when mature narrow, flat, curved pods 3.5 to 5 cm long, tipped with a persistent style. The pods contain 5-6 flattened ellipsoid seeds, 3-6 mm long. [19]

**Geographical distribution**

It is a native of India and is distributed throughout the tropical regions. It occurs all over India up to an altitude of 1600 m. It is cultivated in Tamilnadu,

Uttarpradesh, Nagpur and parts of Assam. In Kerala, horse gram is traditionally grown during Rabi season in the paddy field and terraced uplands (Palliyals). In Southern districts of Kerala state, there is a practice of raising horse gram along with tapioca. [19]

Table 1: Synonyms of Kulatha mentioned various Samhitas and Nighantus [5, 6, 7, 10, 11, 12, 14, 16]

<table>
<thead>
<tr>
<th>Synonyms</th>
<th>CS</th>
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<th>AH</th>
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<th>KN</th>
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</table>

Varieties

a) According to Susruta 2 types- Kulatha and Vanyakulathad[20]. Vanyakulatha is indicated in Anaha, Medoroga, Gudakeela, Hikka, Swasa, Nayanamaya and Kapharoga but Raktapittakara. Vanyakulatha is included in Chakshushya group by Dhanwanthari Nighatu. [21]

b) According to Raja Nighantu 3 types- Tamrabeja, Shwetabeya and Sitetarabijah. [14]

Chemical Constituents

Urease, strepogenin, p-sitosterol, genistein, 2'-hydroxygenistein, dalbergioidin, kievitone, phaseollidin, isoferreirin, coumesterol, psoralidin, 5-O-a-Lrhamnopyranosyl(1 +2)-0-P-D-glucopyranoside, phytohaemagglutinins, P-Nacetylglucosaminidase, α- & P-galactosidases, a-mannosides, P-glucosides, 5-hydroxy-7, 3,4,5-trimethoxy-6methyl isoflavone-5-neohesperidoside, Dglucose, D-galactose, L-rhamnose, D-arabinose and L-ascorbic acid and amino acids viz., glycine, alanine, cysteine, serine and aspartic acid (seeds); genistein, 2'-hydroxygenistein, dalbergioidin, kievitone, phaseollidin, coumesterol, psoralidin, lectin like glycoprotein (content from leaves and stem); dolichinA and dolichin B (leaves); isoferreirin (5, 7, 4'-trihydroxy-2'-methoxyisofavanone) (plant). [22]

Physical constituents

Total ash- Not more than 5%; Acid-insoluble ash- Not more than 1%; Alcohol-soluble extractive- Not less than 3%; Water-soluble extractive- Not less than 12%. [23]

Table 2: Properties of Kulatha mentioned various Samhitas and Nighantus [5, 6, 7, 10, 11, 12, 14, 24, 25]

<table>
<thead>
<tr>
<th>Rasa</th>
<th>Virya</th>
<th>Vipaka</th>
<th>Guna</th>
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<tr>
<td>C. S</td>
<td>Kashaya</td>
<td>Ushana</td>
<td>Amla</td>
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<td>Su. S</td>
<td>Kashaya</td>
<td>Ushana</td>
<td>Katu</td>
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<td>A. S</td>
<td>Kashaya, Swadu</td>
<td>Ushana</td>
<td>Amla</td>
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<td>A. H</td>
<td>Kashaya, Swadu</td>
<td>Ushana</td>
<td>Amla</td>
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<td>Y. R</td>
<td>Kashaya</td>
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<td>B. P</td>
<td>Kashaya</td>
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<td>Katu</td>
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<td>K. N</td>
<td>Madhura, Kashaya</td>
<td>Ushana</td>
<td>Amla</td>
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<tr>
<td>R. N</td>
<td>Kashya, Katu, tikata</td>
<td>Ushana</td>
<td>Katu</td>
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<tr>
<td>MP. N</td>
<td>Kashaya</td>
<td>Ushana</td>
<td>Katu</td>
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</tbody>
</table>
Pharmacokinetics

**Karma-** Grahi, Mootrala, Netravikaranasaka, Vidahi, Swedasamgraha, Krimihara, Pittakrut, Medohara.


**Pharmacological activities**

Antihypertoxic, Hypocholesterolemic, Diuretic, Hypotensive, Antispasmodic, Abortifacient, Myocardial stimulant, Haemaglutinating, Hypolipidaemic, Spasmolytic, Antistress, Hypoglycaemic and Virus inhibitory. The raw seeds of Kulatha has the ability to reduce postprandial hyperglycemia by slowing down carbohydrate digestion and reduce insulin resistance by inhibiting protein tyrosine phosphatase 1 beta-enzyme[26].

**Seasonal Indication** - Since Kulatha has Ushnavirya and Amlavipaka it cannot be used in Greeshma rithu (summer season).

**Contra indications**

Pregnant women, Silajatrasayanaseva,[27] during Rasaseva – Kakaaragana is contraindicated. [20]

**Nutritive value of horse gram[29]**

<table>
<thead>
<tr>
<th>Components per 100 gm</th>
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<tbody>
<tr>
<td>Edible portion (%) 100</td>
</tr>
<tr>
<td>Carotene (microgram) 71.00</td>
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<tr>
<td>Moisture (gm) 11.80</td>
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<td>Thiamine (mg) 0.42</td>
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<tr>
<td>Proteins (gm) 22.00</td>
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<tr>
<td>Riboflavin (mg) 0.20</td>
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<td>Fats (gm) 0.5</td>
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<tr>
<td>Nicin (mg) 1.50</td>
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<tr>
<td>Sulphur (mg) 181</td>
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<tr>
<td>Iron (mg) 8.40</td>
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<tr>
<td>Chlorine (mg) 8.00</td>
</tr>
</tbody>
</table>

**Ahara (Diet)**

Food that is taken for the purpose of nourishment of the body in the form of solids or liquids is known as Ahara. According to Acharya Charaka our body is the supreme and final product of Ahara. The right kind of food consumed in proper manner leads to proper growth of the body. Most of the incurable diseases are produced due to improper food. So an intelligent and self controlled person should take conducive food in right quantity at the right time to prevent diseases.

Aharadravya contains Dhanyavarga one of the staple food of India. Dhanyavarga is again divided into Shukhadanyavarga (varieties of rice) and Shimbidhanya varga (legumes or pulses). Acharya Charaka named Shimbidhanya as Shamidhanya[30] and Susruta included it under Kudhanyavarga.[31]

Legumes or pulses are important constituents in the diet of a very large number of people, especially in the developing countries. Further they are good sources of proteins, which help to supplement cereals by improving their protein nutritive value. They also provide optimum quantities of minerals, vitamins and dietary fibre.

Diet has a pivotal role in the prevention of many diseases which is unfortunately ignored by people. For the prevention of diseases and promotion of health Charaka has mentioned regular intake of food articles in the name of Nityasevaniyayahara which comprises of food items like Shasthika (variety of rice), Shali (variety of rice), Yava (barley), Mudga (Green gram), Saindhava (rock salt), Amalaka (Indian gooseberry), Jangalamamsa rasa (meat of terrestrial animals), Madhu (honey), water, Payah (milk) and Sarpi (ghee). [32]

This food combination forms a balanced diet which is to be consumed regularly. Among them Dhanya varga (Pulses) forms an important group which supplies the required proteins both in the qualitative and quantitative aspects. Kulatha is one among the Shimbidhanya which is cultivated in several parts of South India, mainly as dry crop in moderate rainfall areas.

**Kulatha as Pathya**

Pathya apathy has been mentioned in Bhaishajya ratnavali.


**Kulathayusha as Pathya**

Nasaroga, Amavata, Sula, Gulma, Hridroga, Sheetapitta.

**Uses**

Kulatha can be used as Pathyavahara and Oushada. In South India Kulatha is used in the preparation of various side dishes. In north India especially in Maharashtra and costal region of Goa half ripened pulses are baked on flame of hay and are known as Holaka. Holaka doesn’t aggravate Vata, further they are good sources of minerals, vitamins and dietary fibre.

Available online at: [http://ijapr.in](http://ijapr.in)
pacifics obesity and *Kaphadosa*. Their properties are similar to the pulses of their origin.\(^{[37]}\)

Medicinal preparations include both internal and external medicines.

**Internal medicines (Formulations)**


**External medicines**

*Kolakulathada lepa* for *Udvartana, Kolaadyutkaarika in Vatavadydi, Kulathakashaya for Snana in Kaphajasopha*. Moreover it is used in *Sodhana* and *Marana* process of *Dravyas* like *Vajra*.

**Scope of Research**

The safety evaluation of *Kulatha* seeds on albino rats had proven that its therapeutic dose and five times more than therapeutic dose didn't produce any significant changes in haematological, biochemical and histopathological parameters of the albino rats which can be considered to have any pathological significance.\(^{[38]}\)

A comparative clinical trial conducted by Rana Gopal Singh et. al concluded that *Kulatha* can be used to reduce the recurrence of calcium oxalate stones and its shown to have a better result than conventional potassium citrate in such patients.\(^{[39]}\) In addition to this a research work of *Kulathayusha* on bronchial asthma conducted by Tiwari Ashishkumar concluded that intake of *Kulathayusha* for 1 month in a dose of 120mL morning and evening in empty stomach is effective in improving the subjective and objective parameters of bronchial asthma.\(^{[40]}\) This indicates the scope of further research on *Kulatha* in different therapeutic conditions.

**CONCLUSION**

*Kulatha* in Ayurvedic classics have been attributed the status of both diet and drug due to its versatile properties. *Kulatha* as medicine finds its use in a range of ailments varying from acute to chronic conditions. The factors necessary for a food article to be considered as diet are cost effectiveness, availability, palatability and its contribution to health. *Kulatha* satisfies all this criterias. Thus it can be utilized in different therapeutic conditions as food and also as medicine.

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