

AN OVERVIEW OF APAMARGA

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ABSTRACT

Apamarga (*Achyranthes aspera* Linn.) belong to the family Amaranthaceae is distributed throughout tropical, subtropical and warmer regions of the world. It is a stiff erect herb, 30-90 cm high. *Apamarga* (*Achyranthes aspera* Linn.) is *Katu*, *Tikta in Rasa*, *Laghu*, *Rūkṣa*, *Tīksna* in *Guṇa*, *Uṣṇa* in *Virya*, *Katu* in *Vipāka* and acts as *Kapha-vātahara*, *Sirovirecana*, *Dīpana-pācana* and *Medohara*. Owing to their importance Caraka denoted a chapter as "*Apāmargatanduliya*". In English it is known as Chaff Tree, Prickly Chaff Flower, Rough Chaff Tree. It has Betaine, achyranthine, hentriacontane, ecdysterone; achyranthes saponins A, B, C, D. *Apamarga* is a rich source of Potassium. According to Ayurvedic Text *Apamrga* can be used in Excessive hunger, Piles, *Visūcikā*, *Sidhma*, Gravels and stone, Dysuria,

Difficult labour, Wounds, Sinuses, Accidental wounds Eye disease, Ear disease, Head disease, Dog-bite, Meno-metrorrhagia, Abdominal pain, Jaundice, Insomnia and Pain in Vagina etc. Many Researches has been conducted over *Apamarga* till now.

KEYWORDS: *Apamarga*, Pharmacological properties, Classical uses.

INTRODUCTION

Caraka considered Apāmārga as the best among the drug used for *Nasya/Sirovirecana*. For this purpose the seeds which are famous as '*Apāmārga Tandula*' are used. Owing to their importance Caraka denoted a chapter as (C.S.Su. 2 Chapt.)."Apāmārgatanduliya."^[1] Bhāvamiśra quoted that the fruits of Apāmārga are Madhura rasa, Madhura vipāka in nature but leads to constipation (Viṣṭambhi). *Apamarga* is useful to cure disease caused by thirst and hunger, defects of the organs, speech, physical debility, sterility and all other ailments.^[2] (A.V.Kanda 4th 17.6-8).

- **VernacularNames^[3]**

- *Hindi - Chirchita, Chirchita, Latjira, Apamarga*
- *Telgu – Apamargam, Apamargmu*
- *Bengali - Apang*
- *Gujrati - Aghedo*
- *Arabi - Alkurn*
- *English - Chaff Tree, Prickly Chaff Flower, Rough Chaff Tree*

- **Synonyms**

Kapi pippalī, Pratyak-puṣpī, Mayūraka, śikharī, Kiñihī, Adhahśalya, Markatapippalī, Kubja.

- **Apāmārga Classical Categorization**

Caraka- Sirovirecanopaga, Krimighna, Vamanopaga

Suśruta- Arkādi

Vāgbhata – Arkādi

- **Different varieties-**All the nighaṇṭu writers described two kinds of Apāmārga viz., Śveta (white) and Rakta (red) varieties. However, Kaiyadeva mentioned three varieties viz., Apāmārea(white), Vaśira (red) and Rāmātha (blue?).

- **Taxonomic Classification^[4]**

- Kingdom - Plantae
- Subkingdom - Tracheobinota
- Super Division - spermatophyte
- Division – Mangoliophyta
- Class - Mangoliophsida

- Subclass - Caryophyllidae
 - Order - Caryophyllales
 - Family - Amaranthaceae
 - Genus - *Achyranthes*
 - Species – *Aspera*
- **Latin Name - *Achyranthes Aspera* (Linn.)**
 - **Macroscopic Description of *Apamarga*^[5] (*Achyranthes aspera*)**
 - A stiff erect herb, 30-90 cm high.
 - **Stem-** Young stem irregularly quadrangular, older ones angular to nearly cylindrical, branches opposite decussate, many at the base.
 - **Flower-** Bisexuals, greenish-white, arranged in long spikes, inverted.
 - **Root-** Dried pieces of the root are cylindrical, gradually tapering towards the lower end, rarely branched, lateral roots very few, thin, fibrous, wiry, surface rough, faintly longitudinally striated, at places exfoliated, exhibiting few rootless scars, brownish, internally yellow, and fracture fibrous. Odour and taste not characteristic.
 - **Fruit-** One seeded oblong, cylindrical, utricle with truncate apex, 2 to 5 mm in length and about 1.5 mm in thickness.
 - **Seeds-** Sub cylindrical, truncate at the apex and rounded at the base. Brown colored, test mealy sweet. Odour not characteristic.



A. *Apamarga* plant



B. Different parts of *Apamarga*

- **Distribution-** Common as weed throughout India.
- **Major Chemical Constituents-** Betaine, achyranthine, hentriacontane, ecdysterone; achyranthes saponins A, B, C, D.

- **Properties-**

Rasa- Katu, Tikta

Guṇa- Laghu, Rūkṣa, Tīksna

Virya- Uṣṇa

Vipāka- Katu

Karma- Kapha-vātahara, Sirovirecana, Dīpana-pācana, Medohara

- **Indications-** Chardi, Hrdruja, Ādhmāna, Kandū, śūla, Udara, Apacī, Raktārśas, Viṣūcikā, Krimi, Sidhma, Sadyo vraṇa, Mūtrakrcchra.
- **Part Used-** Root, seed, leaf, whole plant, kṣāra.^[6]
- **Dosage-** Fresh juice 10-20 ml, Ksara 0.5-2 g, Powder- 3-5 gm.
- **Important Preparations-** Apāmārga kṣāra taila, śikharī ghrta.

- **Apamarg TLC**

Sr. No.	Parameter	Result
1.	Apperence	Raw Herb
2.	Colour	Green but violet pink at nodes
3.	Odour	Characteristic
4.	TLC Rf values	366 nm-0.52,0.65,0.87 254 nm-0.5,0.15, 0.87 Visible Light- 0.5,0.15,0.87

1. TLC of *Apamarga*^[7]



a. visible light



b. 254nm



c.366nm

- **Research**^[8]

(1) The **diuretic activity** of 'Ksāra' was found to be due to its high potassium content (Bhide et al., 1958).

(2) Clinically, administration of the decoction of whole plants to patients of **leprosy** has been reported to show encouraging results in lepra reaction as well as the quiescent stage lepromatous leprosy (Ojha et al., 1966 & Ogha & Singh, 1968)

(3) The alcoholic extract of the whole plant showed **hypoglycaemic activity** in albino rats (Dhar et al., 1968).

(4) The chloroform-soluble basic fraction (from plant) raised the BP of anaesthetized dog, caused initial transitory stimulation of respiration and increased amplitude of contractions of isolated guineapigs heart. It also showed spasmolytic action against various spasmogens on intestine and uterine muscles of guineapigs and a slight diuretic action in rats (Kapoor & Singh, 1967).

(5) Achyranthine, produced hypotension, depression of the heart, dilatation of the blood vessels and increase in the rate and amplitude of respiration in anaesthetized dogs. It also showed spasmogenic effect on frog's rectus muscle and diuretic as well as purgative action in albino rats (Neogi et al., 1970).

(6) The alkaloidal fraction of the alcoholic extract of root bark inhibited the contractile response of isolated rat uterus suspended in oxygenated modified Ringer solution at 30° to 0.01 and 0.015 units of oxytocin (Gupta & Khanijo, 1970).

(7) The aqueous and alcoholic extracts of roots caused a sharp and transient fall in BP without any significant action on the respiration of anaesthetized dogs. On frog's heart it had negative inotropic and chronotropic effect (Gambhir et al., 1965).

(8) The saponin mixture isolated from seeds showed a significant increase in the force of contraction of isolated heart of frog, quinea pig and rabbit (Gupta et al., 1972a).

(9) The diuretic effect of saponin mixture was associated with increase in the excretion of Na & K in urine as found with acetazolamide (Gupta et al., 1972b).

(10) Shoot essential oil showed antifungal activity against *aspergillus carneus* (Phytochem. 1992, 31, 1811).

- **Pharmacological Activities**^[9]

Diuretic, Spasmolytic, Hypoglycemic, Purgative, Antimicrobial, Antifungal, Abortifacient, Hypotensive, Vasodilator, Cardiac depressant, Cardiac stimulant.

CLASSICAL USES OF APAMARGA (*Achyranthes aspera* Linn.) IN AYURVEDA^[10]**1. Excessive hunger**

Liquid gruel prepared apāmārga seeds with milk and inguana meat-juice alleviates bhasmaka (characterized by) excessive hunger. (CS.SU.2.33)

2. Piles

- a. Apāmārga root is pounded, mixed with honey and taken with rice-water daily. (SS.Ci.6.13)
- b. The paste of the seeds of apāmārga taken with rice-water alleviates bleeding piles.(SG.2.5.19).

3. Visūcikā

The root of apāmārga taken with water destroys visūcikā. (BP.C1.6.110).

4. Sidhma

1. Radish seeds pounded with the juice of apāmārga or with kadalikṣāra mixed with haridrā and applied to the part destroys sidhma. (VM.51.17).
2. Sidhma is also destroyed by application of apāmārga ash. (VD.11.60).

5. Gravels and stone

Alkali made of tila, apāmārga, kadalī, palaśa and yava should be taken with sheep urine in gravels and stones. (AH.C1.11.31).

6. Dysuria

Apāmārga root taken with milk overcomes dysuria. (VD.7.4)

7. Difficult labour

1. The root of apāmārga should be introduced and kept into vagina. It induces labour easily. (BS.striroga.233).

8. Wounds

1. Apāmārga, aśvagandhā, tālapatrī, suvarcalā and drugs of kakolyādi gana are recommended for elevation of wound.(SS.SU.37.30).
2. Apāmārga is the first drug listed along with other drugs- āragvadha, nimba, kośātakī, tila, brhatī, kantakārī, haritāla and manahsilā as sodhana (purifier) of wounds to be used in sodhana taila.(SS.SU.37.17-18).

9. Sinuses

1. Oil is prepared with the fruits of apāmārga alongwith (cow) urine and applied to sinus. (SS.C.17.25).

10. Accidental wounds

The paste of apāmārga leaves applied locally checks haemorrhage. (VD.16.120; also CD.44.42).

11. Eye disease

Root of apāmārga rubbed in a copper vessel with rock salt and curd water and applied locally alleviates inflammation in eye.(GN.3.3.366).

12. Ear disease

Apāmārgakṣāra-taila (oil cooked with alkali-water and paste of apāmārga) alleviates tinnitus and deafness by instilling in the ear.(VM.59.25).

13. Head disease

Massage with oil cooked with apāmārga fruits removes all types of pain in head. (GN.3.1.125).

14. Dog-bite

Juice of (the leaves of) apāmārga is applied on the wound.(AS.U.46.64).

15. Meno-metrorrhagia

Sprinkling of apāmārga juice on head checks excessive bleeding.(GN.6.1.54).

16. Abdominal pain

Ghee cooked with decoction of apāmārga and paste of pippalī destroys abdominal pain. (SY. ghrta.5)

17. Jaundice

Roots of apāmārga and śami 10 gm are pounded and administered with buttermilk. It alleviates jaundice, oedema and anaemia.(RRS. 19.109)

18. Insomnia

Decoction of kākajāṅghā, apāmārga, kokilākṣa and suparnikā induces sleep. (HS.3.15.6)

19. Pain in Vagina

1. A pair of leaves of apāmārga introduced into vagina relieves pain instantaneously. (GN.6.6.15).
2. Application of the paste of the roots of apāmārga and punarnavā removes vaginal pain during puerperium. (VM.13.40).

DISCUSSION

Ayurvedic System of Medicine has given a lot of importance to the plant; *Apamarg*. Caraka Samhita has named a full chapter after this plant “*Apamarg Tanduliya*”, It can be used for treating multiple disease in different ways. *Apamarg* is best used in making the threads of *Ksharasutra*. These threads are used in the treatment of Fistula and Abscess. It balances *Kapha* and *Vata* doshas. It has a very effective role in disease where hunger becomes uncontrollable and the condition is known as *Bhasmaka Roga* in Ayurveda. There are numerous ways in which it can be put to use to relieve conditions affecting the head region right from migraine to epilepsy, convulsions Etc. *Apamarga* root paste is used to cure various skin disorders. *Apamarga* (*Achyranthes aspera* Linn.) belong to the family *Amaranthaceae* is distributed throughout tropical, subtropical and warmer regions of the world *Apamarga* almost all of its parts are used in traditional systems of medicines, seeds, roots and leaves are the most important parts which are used medicinally. *Apamarga* is well described in Veda and Purana text. Atharvaveda extensively quoted *Apamarga* as a Antimicrobial action. This plant drives away the vitiated doshas from the body. In Ayurveda classics has mentioned *Apamarga* by the synonym of *Kinihi*, *Marga* (purification of Strotas) and *Mayuraka* these synonym are indicate its Antimicrobial action. In Nighantu have described mainly two varieties of *Apamarga*. Rajnighantu, Nighantu Adarsh and Kaiydev Nighantu have described three varieties of it. Regarding *Rasa panchaka* of *Apamarga*, most of the authors described it having, *Tikta*, *Katu rasa*, *Ushna veerya*, *Laghu*, *Ruksha* and *Tikshna guna*. Regarding dosha karma of *Apamarga*, it is mentioned as *Kaphavatahara* and few Acharya had mentioned it as *Kaphapittahara* (Shodhal Nighantu). Regarding Karma of it, Acharyas detailed its action as *Shothahara*, *Vedanasthapana*, *Lekhana*, *Vishaghna*, *Shirovirechana*, *Rochan*, *Deepan*, *Pachana*, *Pittasaraka*, *Krimighna*, *Tvagvikara*, *Kushthaghna*, *Kandughna* etc. According to modern literature *Apamarga* is acrid, bitter, thermogenic, expectorant, revulsive, carminative, digestive, laxative, anti-inflammatory, anti- dermatosis, wound healer. It is useful in cough, asthma, bronchitis, flatulence, colic, painful inflammation, ophthalmopathy, vomiting, leprosy, dropsy, skin diseases.

CONCLUSION

Apamarga is an important plant in Ayurveda system of Medicine. It is widely distributed throughout India, *Apamarga* is an easily available plant, Its availability makes it more useful. Many therapeutic uses of *Apamarga* is described in Ayurveda. Due to its *Ras Panchaka* it is very much effective in *Vata Kaphaj Vikar*. It can be used for treating multiple disease in different ways. More and more researches should be conducted over the Medicinal value of *Apamarga*.

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