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## Review Article

### **MEDICINAL PROPERTIES OF APAMARG (*ACHYRANTHES ASPERA* LINN.)**

**Ashwini Kumar Sharma**

Lecturer, P.G. Dept. of Dravyaguna, Rishikul Govt. P.G. Ayurvedic College & Hospital, Haridwar, Uttarakhand, India.

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#### **ABSTRACT**

The Indian system of medicine, *Ayurveda*, a medical science practiced for a long time for disease free life. It relies mainly upon the medicinal plants for the management of various diseases. Among these herbs *Apamarg* (*Achyranthes Aspera* Linn.) is very important and easily available herb mentioned in *Vedic* literature and in *Atharvaveda*, considered as lord of all plants on earth. This medicinal plant found as a weed throughout India up to 900 m. Though almost all of its parts are used in traditional system of medicines, seeds, roots, and shoots are the most important parts, which are used medicinally. The present article gives important information on therapeutic uses, traditional medicinal uses mentioned in various *Samhitas* and *Nighantus*, phytochemical and pharmacological properties of modern era.

**KEY WORDS:** *Apamarg*, *Achyranthes aspera*, Phytochemistry, Pharmacological properties.

#### **INTRODUCTION**

In *Regveda* there is no reference about this plant, in *Yajurveda* has referred *Apamarga* by saying "Apamarga, please prevent us from ill actions and bad dreams". Accordingly *Apamarga* can enhance the will power and controls the minds of the persons who ever uses it<sup>[1]</sup>. *Saktu* (powder) of *Apamarga* having the *Rakshagna* (Antimicrobial) property and remove the excessive water from the body<sup>[2]</sup>.

*Atharvaveda* refers *Apamarga* at about eleven places. It considers this drug as the Lord of all plants on earth because it can increase life span by wiping away all the diseases. *Apamarga* is useful to cure diseases caused by thirst and hunger, defects of the organs, speech; sterility, physical debility and all other ailments<sup>[3]</sup>.

*Atharvaveda* describes that *Apamarga* can sweep away chronic diseases, the evil habit of using foul language and also the ailments which cause severe pain as well as decrease in vitality<sup>[4]</sup>.

*Achyranthes aspera* Linn. is an important medicinal plant which is found as a weed throughout India up to 900 m. It has been used all the parts in traditional systems of medicines like *Ayurveda*, *Unani* and *Siddha*. Seeds, roots and

shoots are the most important parts those can be used as a medicine.

*Apamarga* is one of the herbs mentioned *Bruhatryis* in different groups, *Shirovirecana dashaimani*<sup>[5]</sup>, *Krimigna dashaimani*<sup>[6]</sup>, *Vamanopaga dhashamani*<sup>[7]</sup>, *Arkadi gana*<sup>[8,9]</sup> *shirovirecana gana*<sup>[10]</sup>, *Kakolyadi gana*<sup>[11]</sup> *Viratarvadi gana*<sup>[12]</sup>, *Shyamadi gana*<sup>[13]</sup>, *Tiktavarga*<sup>[14,15]</sup>.

*Apamarga* is one of the *Ksharas* (caustics) mentioned as *Kshrapancaka*<sup>[16]</sup>, *Ksharasaptaka*<sup>[17]</sup>, *Ksharashtaka*<sup>[18-22]</sup> *Ksharadhashaka*<sup>[23]</sup>.

*Apamarga* is the best among the drugs used for *Nasya/Sirovirecana*, for this purpose the seeds, which are famous as *Apamarga Tandula*, due to the importance of *Apamarga*, Caraka denoted a chapter as *Apamarga Tandulya* (Ca. Su. 2<sup>nd</sup> chapter).

*Gouradanda Apamarga* (a variety with white stem) by *Vagbhata* mentioned in *pumsavana*<sup>[24,25]</sup> indicates towards another variety of *Apamarga* in the *Samhita*.

In *Nighantu* (Ayurvedic Lexicons) *Apamargas* described in two types 1. *Sveta* (white variety) 2. *Rakta* (red variety), But in *kaiyadeva nighantu* mentioned 3 variety *Apamarga*<sup>[26]</sup>

1. *Apamarga* (white)
2. *Vashira* (red)
3. *Ramatha* (blue)

*Rajanighantu* mentioned 3 varieties *Apamarga*<sup>[27]</sup>

1. *Apamarga*
2. *Raktapamarga*
3. *Kshudrapamarga*

### SCIENTIFIC CLASSIFICATION

Kingdom	-	Plantae
Subkingdom	-	Tracheobionta
Unranked	-	Angiosperms
Super Division	-	Spermatophyta
Order	-	Caryophyllales
Division	-	Mangoliophyta
Class	-	Mangoliopsida
Subclass	-	Caryophyllidae
Order	-	Caryophyllales
Family	-	Amaranthaceae
Genus	-	<i>Achyranthes</i>
Species	-	<i>Aspera</i>
Binomial name	-	<i>Achyranthus aspera</i>
Family	-	Amaranthaceae

### Vernacular names<sup>[28-31]</sup>

*Achyranthes aspera* has different names in various Indian languages

Sanskrit	-	Adhoghanta, Adhvashalya, Aghamargava, Aghata, Apamarga, Apangaka, Chamatkara, Dhamargava
Hindi	-	Apang, Chirchra, Chirehitta, Latjira, Onga
Assam	-	Apang
Bengali	-	Apang
English	-	Chaff tree, Prickly Chaff flower
Gujarati	-	Safed aghedo, Anghadi, Anhdedi, Agheda
Kannada	-	Uttarane
Malayam	-	Kadaladi, Katalati
Marathi	-	Aghada, Aghara, Pandhara-aghada
Persian	-	kharevazhun

### Ayurvedic Properties<sup>[56-60]</sup>

<i>Rasa</i>	:	<i>Katu, Tikta</i>
<i>Guna</i>	:	<i>Laghu, Ruksha, Tikshna</i>
<i>Virya</i>	:	<i>Usna</i>
<i>Vipaka</i>	:	<i>Katu</i>
<i>Karma</i>	:	<i>Pacify Kapha and Vata, evacuates Kapha and Pitta, Sirovirecana, Sodhahara, Vedana sthapana, Lekhan, Visaghna, Tvak Dosahara Vrana Sodhana, Dipana-Pacana, Medohar.</i>
Indications	:	<i>Kandu</i> (itching), <i>Kusta</i> (skin disorders), <i>Visa</i> (scorpion & snake bites), <i>Kapha</i> &

Punjabi	-	Kutri
Tamil	-	Nayurivi, Shiru-kadaladi
Telugu	-	Antisha, Apamargamu, Uttareni
Singhala	-	Gaskaralheba, Karal seba
Indonesia	-	Jarong

### Synonyms<sup>[32-36]</sup>

*Adhahshalya, Aghata, Ashvashalya, Durabhigraha, Durgraha, Kandakanta, Kanti, Kharamanjari, Kinihi, Ksharamadhya, Kshavaka, Kubja, Malakantaka, Manjarika, Marga, Markatapippali, Markati, Mayuraka, Nandi, Panktikantaka, Pratyakpushpi, Shaikharika, Shikhari, Vashira.* These are the synonyms found in *Ayurveda Nighantus*.

In *Ayurveda samhitas* also mentioned some synonyms like *Pratyakpushpi*<sup>[37-40]</sup>, *Mayuraka*<sup>[41]</sup>, *Kinihi*<sup>[42]</sup>, *Avakpushpi*<sup>[43,44]</sup>, *Kharamanjari*<sup>[45,46]</sup>, *Pratyakpushpi*<sup>[47]</sup>, *Mayuraka*<sup>[48-50]</sup> and *Vasir*<sup>[51]</sup>, *Kinihi*<sup>[52]</sup>, *Sikhari*<sup>[53]</sup>.

### Botanical Description

A stiff erect herb, 30-90 cm high, branches spreading, leaves are opposite, velvety, tomentose, 3.8-12.7 cm × 5.1-7.6 cm. flowers are bisexual, greenish white, arranged in long spikes, inverted<sup>[54]</sup>.

Plant herbaceous, erect; root angular and longitudinally furrowed, colour greenish or reddish; leaves opposite and obovate, margins wavy; surface covered with whitish hairs, spikes terminal, long and generally curved about the middle; flowers small and of a reddish color; bracts green, old bracts tough, rigid, prickly and adhering to the clothes; fruits conical, covered with sharp pointed bracts and containing numerous seeds; seeds oblong and of a shining pale brown color, taste like that of bajari grams. The drugs sold in the market under the name of Aghada bija is the whole fruit<sup>[55]</sup>.

Distribution- common as weed throughout India.

	<i>Vata</i> diseases, <i>Vrana</i> (Wound), <i>Karna Roga</i> (ear diseases), <i>Netra Roga</i> (eye diseases), <i>Aruci</i> (loss of taste in food), <i>Cardi</i> (vomiting), <i>Agnimandya</i> (anorexia), <i>Sula</i> (pain), <i>Udararoga</i> (abdominal diseases), <i>Arsa</i> (piles), <i>Krmi</i> (worm infestation), <i>Hrdroga</i> (heart disease), <i>Pandu</i> (anaemia), <i>Gandamala</i> (lymphadenitis), <i>Amavata</i> (rheumatoid arthritis), <i>Kasa</i> (cough), <i>Svasa</i> (asthma) <i>Mutraghata</i> (urinary obstruction).
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Note- The fruits of *Apamarga* are *Madhura* in rasa and *Vipaka* in nature but leads to constipation means fruits are *vistambhi*<sup>[61]</sup>.

Internal administration: *Sthula*, *Udararoga*, *Krimi*, *Hrudroga*, *Rakta vikara*, *Shvasa*, *Kasa*, *Vrukka shota*, *Ashmari*, *Kushta*, *Visucika*, *Sarpa dosha*.

**Useful part:** *Tandula*, *Patra*, *Mula*, *Panchanga*.

**Dose:**

Svarasa	: 10-20 ml
Decoction	: 50-100 ml.
Root powder	: 2-4 gr.
Seed powder	: 500-700 gr.
Kshara	: 0.5-2 gr.

**Important preparations and indications**

S.No	Important preparations	indications
1.	<i>Apamarga ksara taila</i> <sup>[62,63]</sup>	<i>Karnanada</i> (tinnitus), <i>Badirya</i> (deafness) (Ear diseases)
2.	<i>Apamarga ksaradi lepa</i> <sup>[64]</sup>	Warts of penis
3.	<i>Apamarga navanita</i> <sup>[65]</sup>	<i>Suryavarta</i> (Severe migraine)
4.	<i>Apamarga svarasa</i> <sup>[66]</sup>	<i>Raktasrava</i> in <i>Vrana</i> (Haemorrhage from accidental wounds)
5.	<i>Apamargadi taila</i> <sup>[67,68]</sup>	<i>snuff</i> (Worm infestation)
6.	<i>Agasthya Rasayana</i> <sup>[69]</sup>	<i>Rasayana</i> (Rejuvenation), <i>Jvara</i> , <i>Kasa</i> (cough), <i>Hrdroga</i> , <i>Pratisyaya</i>
7.	<i>Haritaki rasayana</i> <sup>[70]</sup>	<i>Rasayana</i> (Rejuvenation),
8.	<i>Kalyanaka lavana</i> <sup>[71]</sup>	<i>Vataroga</i> , <i>Gulma Pliha</i> , weak digestion, <i>Ajirna</i> , <i>Arsha</i> , <i>Aruci</i> , <i>Kasa</i> , <i>Worms</i> .
9.	<i>Apamarga Varti</i> <sup>[72]</sup>	Excessive menstrual flow
10.	<i>Samshodana taila</i> <sup>[73]</sup>	For cleansing in wounds
11.	<i>Apamarga ksara</i> <sup>[74]</sup>	For <i>Pratisaraniya kshara</i> (caustics for external use) in various diseases.
12.	<i>Agasthya rasayana</i> <sup>[75,76]</sup>	<i>Rajyakshma</i> , <i>Grahani</i> , <i>Shopha</i> , <i>Agimandya</i> , <i>Svarabheda</i> , <i>Kasa</i> , <i>Pandu</i> , <i>Svasa</i> , <i>Shiroroga</i> , <i>Hrudroga</i> , <i>Hikka</i> , <i>Vishamajvara</i>

*Apamarga* is one of the herb in management of *Kaphaja Timira* as a fumigation<sup>[77]</sup>, *Vataja nadi* (sinuses)<sup>[78]</sup>, in the management of Splenomegaly<sup>[79]</sup>, Specific treatment in *Paripotaka* (ear lobule diseases)<sup>[80]</sup>, *Utpataka* (ear lobule complications)<sup>[81]</sup>, seeds powder as a *avapida* snuff in *Apaci* (cervical Lymphadenopathy)<sup>[82]</sup>, collyrium prepared with Flower of *Apamarga* can useful in *Praklinnavartman* (eye lid disease)<sup>[83]</sup>, *Apamarga* is one of the drugs to encourage Granulation Tissue formation (*Utsadana*)<sup>[84]</sup> and medicinal recipes in the treatment of *Ashmari*

(urinary calculi) and *Sharkara* (gravel)<sup>[85]</sup>, *Arshas* (piles)<sup>[86]</sup>.

**Phytochemical studies**

**Chemical constituents**

Betaine, achyranthine, hentriacontane, ecdysterone, achyranthes saponins A,B,C,D are the major chemical constituents found in *Apamarg*<sup>[87]</sup>. The seeds of *Apamarg* contains  $\alpha$ -L-rhamnopyranosyl-(1→4)-( $\beta$ -Dglucopyranosuluronic acid)-(1→3)- Oleanolic acid,  $\alpha$  -L rhamnopyranosyl-(1→4)-( $\beta$ -

Dglucopyranosyluronic acid)-(1→3)- Oleanolic acid, 28-O-β-D-glucopyranoside and α-Lrhamnopyranosyl-(1→4)-(β-D-glucopyranosyluronic acid)-(1→3)-oleanolic acid-28-O-β-D-glucopyranosyl-(1→4)-β-D-glucopyranoside<sup>[88]</sup>.

Ethanollic extracts of the roots of *Achyranthes aspera* linn. isolated a new aliphatic acid and it has been identified as n-hexacos-14-enoic acid<sup>[89]</sup>. This compounds reported for the first time from any natural and synthetic source, certain other compound were also isolated and identified as strigmasta-5, 2-dien-3-β-ol, trans-13-docasenoic acid, n-hexacosanyl n-decaniate, n-hexacos-17-enoic acid. Rameswar isolated chemical compounds of the volatile oil from *Achyranthes aspera* leaves<sup>[90]</sup>.

### PHARMACOLOGICAL STUDIES

The root *Apamarga* shows Spermicidal<sup>[91]</sup>, Post coital antifertility<sup>[92]</sup>, Anti-inflammatory and anti-arthritic effects<sup>[93]</sup>. Methanolic extracts of leaves of *Achyranthes aspera* have shown different activities against 22 microorganism (bacterial and fungal)<sup>[94]</sup>, Crude leaf extract shown antiviral activity against Papaya viruses<sup>[95]</sup>.

Leaf shows the Analgesic and antipyretic<sup>[96]</sup>, Antipyretic<sup>[97]</sup>, Antibacterial and antifungal<sup>[98]</sup>, Antifertility<sup>[99]</sup>, Mosquito larvicidal<sup>[100]</sup>, Cancer chemo preventive<sup>[101]</sup>, Anti-oxidant<sup>[102]</sup>, Anti-depressant<sup>[103]</sup>, Wound healing<sup>[104]</sup>, Antiparasitic<sup>[105]</sup>.

Whole plant shows Abortifacient<sup>[106]</sup>, Antibacterial activity against various pathogenic strains such as *Escherichia coli*, *Pseudomonas aeruginosa*, *Citrobacter* species, *Bacillus subtilis* and *Micrococcus* species<sup>[107]</sup>, Free radical scavenging<sup>[108]</sup>, Nephroprotective<sup>[109]</sup>, Bronchoprotective<sup>[110]</sup>, Anti-allergic<sup>[111]</sup>, Immunomodulatory<sup>[112]</sup>, Hypolipidemic<sup>[113]</sup>.

Powder of whole plant shows Hypoglyceamic effect<sup>[114]</sup>, Flower and seed extract shows the Antiparasitic<sup>[115]</sup>, Aerial parts shows Hepatoprotective<sup>[116]</sup>, Seeds shows the Antipyretic<sup>[117]</sup>, Antimicrobial<sup>[118]</sup>, Anti-oxidant<sup>[119]</sup>, Diuretic, Cardiovascular<sup>[120]</sup>, Leaves from extracts in various solvents shows the antimicrobial effect in *E. coli* *E. aerogenes* *S. aureus* *P. aeruginosa* in the isolates organisms from patients of diabetes<sup>[121]</sup>.

### Uses

The whole plant and especially the roots, characterized by their anti-inflammatory and uterine stimulant activity, are prescribed in the rheumatism, lumbago, osteodynia, dysuria, post-partum haematometra and dysmenorrheal. The seeds are nutritious when cooked with milk and are a potential source of food; the roots are astringent; their paste is applied to clear opacity of cornea and to wounds as an haemostatic; it is reported to be useful in cancer. A decoction of the roots is used for stomach troubles, and an aqueous extract for stones in the bladder.<sup>[122]</sup>

### THERAPEUTIC USES

1. The root of *Apamarg* is taken with water in *Visuchika*.<sup>[123]</sup>
2. In *Sidhma* seed of *Mulaka* and fresh juice of *Apamarg* is made to paste and applied externally.
3. Decoction of *Kakjangha*, *Apamarg*, *Kokilaksa* and *Suparnika* is useful in *Nidranasa* (insomnia).
4. The root of *Apamarg* and piper nigrum is used in snake poison.
5. The decoction of *Apamarg*, *Yastimadhu*, *Gokshur* and *Patha* is used for urinary tract infection.
6. *Apamarg kshar* is used in chronic cough disease with *Pippali*, *Ativisha*, *Kupilu*, *Grith* and *Madhu*.
7. *Apamarg* root is made paste with *Tanduloodak* and used with honey in *Arsha*. The paste of seed of *Apamarg* is used for *Raktrash* as externally.
8. In *Ashmari*, *Apamarg kshar* is used with sheep milk.
9. The juice of *Apamarg* is painted on gums in toothache.

### CONCLUSION

The plant *Apamarg* (*Achyranthes Aspera* Linn.) is found and commonly distributed throughout the tropical world, growing as a common weed. Traditionally, this plant using since Vedic period to present days using in the treatment of many diseases. Now a day's many experimental studies proves many medicinal values and using in various diseases. It can be

concluded that the drug *Apamarg* proved to have extensive medicinal value in the treatment of diseases.

## REFERENCES

1. Prasad, P.V.V. & Subhaktha, P.K.J.P. Apamarga (*Achyranthes aspera* Linn) Medico-Historical review., 2001, 31(1), pp.11
2. J.L.N.shastri. Illustrated Dravyaguna Vijnana Vol-2. Chaukhambha Orientalia, Varanasi. Edition: 2010. pp.443
3. Prasad, P.V.V. & Subhaktha, P.K.J.P. Apamarga (*Achyranthes aspera* Linn) Medico-Historical review., 2001, 31(1), pp.12
4. Ibid.
5. Charaka Samhita, Ram Karan Sharma & Vaidya Bhagwan Dash, Chowkhambha Sanskrit Series office, Varanasi. Reprint: 2008; Vol- 1; pp.95
6. Ibid; pp.91-92
7. Ibid;; pp.93-94
8. G.D. Singhal & Colleagues, *Susruta-Samhita Ancient Indian Surgery*, Chaukhamba Sanskrit Pratishthan, Delhi. Reprint: 2007: Vol: 1; pp.311;
9. Vagbhata's *Astanga Hrdayam*, Translation: Prof. K. R. Srikantha Murthy, Chowkhamba Krishnadas Academy, Varanasi. Reprint: 2009; Vol-1; pp.204
10. G.D. Singhal & Colleagues, *Susruta-Samhita Ancient Indian Surgery*, Chaukhamba Sanskrit Pratishthan, Delhi. Reprint: 2007: Vol: 1; pp.321-322);
11. Ibid; pp.307
12. Ibid; pp.310
13. Vagbhata's *Astanga Hrdayam*, Translation: Prof. K. R. Srikantha Murthy, Chowkhamba Krishnadas Academy, Varanasi. Reprint: 2009; Vol-1; pp.207
14. G.D. Singhal & Colleagues, *Susruta-Samhita Ancient Indian Surgery*, Chaukhamba Sanskrit Pratishthan, Delhi. Reprint: 2007: Vol: 1; pp.346-347
15. Vagbhata's *Astanga Hrdayam*, Translation: Prof. K. R. Srikantha Murthy, Chowkhamba Krishnadas Academy, Varanasi. Reprint: 2009; Vol-1; pp.148
16. P.V. Sharma and guru prasada Sharma. *Kayyadevanighantu*. Chaukhamba orientalia, Varanasi 1979; pp. 564-565
17. Ibid
18. Bhavaprakasa of Bhavamisra, Translation: Prof. K.R.Srikantha Murthy, publisher Krishandas Academy, Varanasi. Vol-1, Edition: 1998; pp. 203
19. Rajanighantu of Pandit Narahari by Dr.Indradev Tripathi, Chowkhambha Krishnadas Academy, Varanasi. 2006; pp.667
20. Danvantari Noghantu with Hindi Translation and Commentary Edited and Commentrated by Jharkhandey Ojha, Dept of Dravyaguna Instutute of Medical Sciences, BHU, Varanasi. Year: 1985 pp. 378
21. p.v. Sharma and guru prasada Sharma. *Kayyadevanighantu*. Chaukhamba orientalia, Varanasi 1979; pp. 564-565
22. *Abhidana Manjari* by Shankara Sharma 2<sup>nd</sup> edition edition: 1952; pp. 201
23. Rajanighantu of Pandit Narahari by Dr.Indradev Tripathi, Chowkhambha Krishnadas Academy, Varanasi. 2006; pp.667
24. Vagbhata's *Astanga Hrdayam*, Translation: Prof. K. R. Srikantha Murthy, Chowkhamba Krishnadas Academy, Varanasi. Reprint: 2009; Vol-1; pp.367),
25. Thakur Balwant Singh. *Glossary of Vegetable Drugs in Brhatrayi*. Chaukhamba Amarabharathi Prakashan, Varanasi. Edition 1999: pp. 14
26. P.V. Sharma and guru prasada Sharma. *Kayyadevanighantu*. Chaukhamba orientalia, Varanasi 1979; pp. 191-192
27. Rajanighantu of Pandit Narahari by Dr.Indradev Tripathi, Chowkhambha Krishnadas Academy, Varanasi. 2006; pp. 79
28. RAJI R. *International journal of pharma and bio sciences* 2013 Jan.; 4(1): (B) 719-724
29. *Nighantu Aadarsh*, Bapalal G.Vaidya Published by Chaukhamba Bharati Academy, Varanasi, Volume 2<sup>nd</sup> page 301,302
30. Sharma P.V. *Dravya Guna Vijnana Vol.2<sup>nd</sup>* published by Chaukhambha Bharati Academy, Varanasi. page no.542
31. Kirtikar KR, Basu BS. *Indian Medicinal Plants*. 2nd Edition. Revised by Blatter E., Caius J.F. and Mahaskar K.S. Published by Mohan Basu Lalit, Allhabhad. 1984. Vol. -3. P. 2068.
32. Bhavaprakasa of Bhavamisra, Translation: Prof. K.R.Srikantha Murthy, publisher Krishandas Academy, Varanasi. Vol-1, Edition: 1998; pp.263
33. Rajanighantu of Pandit Narahari by Dr.Indradev Tripathi, Chowkhambha

- Krishnadas Academy, Varanasi. 2006; pp. 78-79
34. Illustrated Madanapala Nighantu by J.L.N. Shastri., Chaukhamba Orientalia, Varanasi. 2010, p. 76
35. P.V. Sharma and guru prasada Sharma. Kayyadevanighantu. Chaukhamba orientalia, Varanasi 1979; pp. 191
36. Danvantari Noghantu with Hindi Translation and Commentary Edited and Commentrated by Jharkhandey Ojha, Dept of Dravyaguna Instutute of Medical Sciences, BHU, Varanasi. Year: 1985 pp. 91-92
37. Charaka Samhita, Ram Karan Sharma & Vaidya Bhagwan Dash, Chowkambha Sanskrit Series office, Varanasi. Reprint: 2008; Vol- 1; pp.51-52; 95.
38. Charaka Samhita, Ram Karan Sharma & Vaidya Bhagwan Dash, Chowkambha Sanskrit Series office, Varanasi. Reprint: 2008; Vol- 6; Page no:14
39. Vagbhata's Astanga Hrdayam, Translation: Prof. K. R. Srikantha Murthy, Chowkhamba Krishnadas Academy, Varanasi. Reprint: 2009; Vol-1; pp.204
40. Vagbhata's Astanga Hrdayam, Translation: Prof. K. R. Srikantha Murthy, Chowkhamba Krishnadas Academy, Varanasi. Reprint: 2009; Vol-2; pp.530
41. Charaka Samhita, Ram Karan Sharma & Vaidya Bhagwan Dash, Chowkambha Sanskrit Series office, Varanasi. Reprint: 2008; Vol- 4; pp.341
42. e-Book on Carakasamhita with Ayurvedadipika commentary of Cakrapanidatta, by National Institute of Indian Medical Heritage, Hyderabad, Andhra Pradesh, India.
43. Charaka Samhita, Ram Karan Sharma & Vaidya Bhagwan Dash, Chowkambha Sanskrit Series office, Varanasi. Reprint: 2008; Vol- 3; pp.348-349.
44. e-Book on Carakasamhita with Ayurvedadipika commentary of Cakrapanidatta, by National Institute of Indian Medical Heritage, Hyderabad, Andhra Pradesh, India.
45. G.D. Singhal & Colleagues, Susruta-Samhita Ancient Indian Surgery, Chaukhamba Sanskrit Pratishthan, Delhi. Reprint: 2007: Vol: 2; pp.327
46. G.D. Singhal & Colleagues, Susruta-Samhita Ancient Indian Surgery, Chaukhamba Sanskrit Pratishthan, Delhi. Reprint: 2007: Vol: 3; pp.64-65, 119
47. G.D. Singhal & Colleagues, Susruta-Samhita Ancient Indian Surgery, Chaukhamba Sanskrit Pratishthan, Delhi. Reprint: 2007: Vol: 1; pp.348-349
48. Ibid; pp.305, 311
49. G.D. Singhal & Colleagues, Susruta-Samhita Ancient Indian Surgery, Chaukhamba Sanskrit Pratishthan, Delhi. Reprint: 2007: Vol: 2; pp.205; 373
50. e-Book on Sushrutasamhita with Nibandhasangraha commentary of Dalhana and Nyayacandrika commentary of Gayadasa, by National Institute of Indian Medical Heritage, Hyderabad, Andhra Pradesh, India.
51. e-Book on Sushrutasamhita with Nibandhasangraha commentary of Dalhana and Nyayacandrika commentary of Gayadasa, by National Institute of Indian Medical Heritage, Hyderabad, Andhra Pradesh, India.
52. G.D. Singhal & Colleagues, Susruta-Samhita Ancient Indian Surgery, Chaukhamba Sanskrit Pratishthan, Delhi. Reprint: 2007: Vol: 3; pp.89
53. Vagbhata's Astanga Hrdayam, Translation: K. R. Srikantha Murthy, Chowkhamba Krishnadas Academy, Varanasi. Reprint: 2009; Vol-1; pp.207
54. Sastry J.L.N. Dravyaguna Vijnana Vol.-II Published by Chaukhamba Orientalia, Varanasi, Page 414,415,416.
55. Rustomjee Naserwanjee Khory and Nanabhai Navroshji Katrak Materia medica of india and their therapeutics reprinted 1999 by Komal prakashan, Delhi, page-504-505.
56. P.V.Sharma. Dravyaguna vijnana Vol-2, Chaukhamba Bharathi Academy, Varanasi. Reprint: 2009, p. 543-544.
57. Rajanighantu of Pandit Narahari by Dr.Indradev Tripathi, Chowkhamba Krishnadas Academy, Varanasi. 2006; pp. 78-79
58. P.V. Sharma and guru prasada Sharma. Kayyadevanighantu. Chaukhamba orientalia, Varanasi 1979; pp. 191
59. Danvantari Noghantu with Hindi Translation and Commentary Edited and Commentrated by Jharkhandey Ojha, Dept of Dravyaguna Instutute of Medical Sciences, BHU, Varanasi. Year: 1985 pp. 91-92
60. Prasad, P.V.V. & Subhaktha, P.K.J.P. Apamarga (*Achyranthes aspera* Linn) Medico-Historical review., 2001, 31(1), pp.15

61. Bhavmisra Commented by Chunekar K.C. Edited by Pandey G.S. Edition 2006-366 page - 416.
62. P.V. Sharma. Cakradatta. Chaukhambha Publishers, Varanasi. edition: 2007. pp. 471
63. Bhashajya Ratnavali of Govinda Dasji Bhishagratna translated by Kanjiv Lochan, Published by Chaukhambha Sanskrit Bhavan, Varanasi, edition: 2006 Vol: 3 pp.235
64. P.V. Sharma. Cakradatta. Chaukhambha Publishers, Varanasi. edition: 2007. pp. 74
65. Ibid; pp. 520
66. Ibid;. pp. 364
67. Ibid;. pp. 519
68. Bhashajya Ratnavali of Govinda Dasji Bhishagratna translated by Kanjiv Lochan, Published by Chaukhambha Sanskrit Bhavan, Varanasi, edition: 2006 Vol: 3 pp.329
69. Vagbhata's Astanga Hrdayam, Translation: Prof. K. R. Srikantha Murthy, Chowkhamba Krishnadas Academy, Varanasi. Reprint: 2009; Vol-2; pp.236
70. Vagbhata's Astanga Hrdayam, Translation: Prof. K. R. Srikantha Murthy, Chowkhamba Krishnadas Academy, Varanasi. Reprint: 2009; Vol-2; pp.237
71. G.D. Singhal & Colleagues, Susruta-Samhita Ancient Indian Surgery, Chaukhamba Sanskrit Pratishthan, Delhi. Reprint: 2007: Vol: 2; pp.200-201
72. Bhashajya Ratnavali of Govinda Dasji Bhishagratna translated by Kanjiv Lochan, Published by Chaukhambha Sanskrit Bhavan, Varanasi, edition: 2006 Vol: pp. 370
73. G.D. Singhal & Colleagues, Susruta-Samhita Ancient Indian Surgery, Chaukhamba Sanskrit Pratishthan, Delhi. Reprint: 2007: Vol: 1; pp.305
74. Ibid; pp.89
75. Vagbhata's Astanga Hrdayam, Translation: K. R. Srikantha Murthy, Chowkhamba Krishnadas Academy, Varanasi. Reprint: 2009; Vol-2; pp.236 ;
76. G.D. Singhal & Colleagues, Susruta-Samhita Ancient Indian Surgery, Chaukhamba Sanskrit Pratishthan, Delhi. Reprint: 2007: Vol: 3; pp.405
77. Ibid; pp.89
78. G.D. Singhal & Colleagues, Susruta-Samhita Ancient Indian Surgery, Chaukhamba Sanskrit Pratishthan, Delhi. Reprint: 2007: Vol: 2; pp.317-318
79. Ibid;; pp.295
80. Ibid;; pp.398-399
81. G.D. Singhal & Colleagues, Susruta-Samhita Ancient Indian Surgery, Chaukhamba Sanskrit Pratishthan, Delhi. Reprint: 2007: Vol: 1; pp. 152
82. G.D. Singhal & Colleagues, Susruta-Samhita Ancient Indian Surgery, Chaukhamba Sanskrit Pratishthan, Delhi. Reprint: 2007: Vol: 2; pp. 327
83. G.D. Singhal & Colleagues, Susruta-Samhita Ancient Indian Surgery, Chaukhamba Sanskrit Pratishthan, Delhi. Reprint: 2007: Vol: 3; pp. 64-65
84. G.D. Singhal & Colleagues, Susruta-Samhita Ancient Indian Surgery, Chaukhamba Sanskrit Pratishthan, Delhi. Reprint: 2007: Vol: 1; pp. 307
85. G.D. Singhal & Colleagues, Susruta-Samhita Ancient Indian Surgery, Chaukhamba Sanskrit Pratishthan, Delhi. Reprint: 2007: Vol: 2; pp. 233
86. Ibid; pp. 224-226
87. Sastry J.L.N. Dravyaguna Vijnana Vol.-II Published by Chaukhambha Orientalia, Varanasi, Edition:2010; Page 445.
88. Rashmi and Dayal R. Fatty acid composition of *Achyranthes aspera* seed oil. Journal of Oil Technologist's Association of India. 53-54 (2003).
89. Sharma S K Vasudeva N M. Ali. Indian Journal of Chemistry - Section B Organic and Medicinal Chemistry. 48(8), 1164-1169 (2009).
90. Rameswar RD. Essential oil constituents of *Achyranthes aspera* leaves. Indian Perfumer. 51(1): 33-34 (2007).
91. Paul, D. D., De, K. M., Ali, K., Chatterjee, D. K. and Nandi, D. G. 2010. Effects of various extracts from the roots of *Achyranthus aspera*. Contraception.81(4): 355-361.
92. Vasudeva, N and Sharma S K.. Postcoital antifertility activity of *Achyranthes aspera* L. Root. J. Ethnopharmacol: 107(2): 179-181 (2006).
93. Vijayakumar S, Sankar P and Varatharajan . Anti inflammatory activity of roots of *Achyranthes aspera*. Pharma Biol. 47(10): 973-975 (2009).
94. Ramesh Londonkar, Chinnappa Reddy V and Abhay Kumar K. potential antibacterial and antifungal activity of *achyranthes aspera* l.

- Recent Research in Science and Technology 3(4): 53-57 (2011).
95. Khurana SMP, Bhargava KS. Effect of plant extracts on the activity of three papaya viruses. J Gen Appl Microbiol. 16: 225-230 (1970).
  96. Sutar NG, Sutar U N, Sharma YP, Shaikh I K and Kshirsagar S S. Phytochemical investigation and pharmacological screening of leaves of *Achyranthes aspera* L. as analgesic and antipyretic. Biosci Biotechnol. Res. Asia. 5(2): 841 -844 (2008).
  97. Mehta A, Patel B G, Pandya S S, Ahir K B and Patel S B 2. Antinociceptive and analgesic activity of *Achyranthes aspera* L. extracts. Pharmacol. online. 3: 978 -985 (2009).
  98. Saravanan, P, Ramasamy V and Shivakumar T. Antimicrobial activity of leaf extracts of *Achyranthes aspera* L. Asian J. Chemi. 20(1): 823-825 (2008).
  99. Shibeshi W, Makonnen E, Zerihun L and Debella A. Effect of *Achyranthes aspera* L. on fetal abortion, uterine and pituitary weights, serum lipids and hormones. African. Health. Sci. 6(2): 108-112 (2006).
  100. Bagavan A, Rahuman A A, Kamaraj C and Geetha K. Larvicidal activity of saponin from *Achyranthes aspera* against *Aedes aegypti* and *Culex quinquefasciatus* (Diptera: Culicidae). Parasitol. Res. 103: 223-229 (2008).
  101. Chakrabarti R and Vasudeva R. Y. *Achyranthes aspera* stimulates the immunity and enhances the antigen clearance in *Catla catla*. Inter. Immuno.Pharmacol. 6(5): 782-790 (2006).
  102. Tahiliani P and Kar A. *Achyranthes aspera* elevates thyroid hormone levels and decreases hepatic lipid peroxidation in male rats. J. Ethnopharmacol. 71(3): 527-532 (2000).
  103. Barua C C, Talukdar A, Begum S A, Buragohain B, Roy JD, Borah R S and Lahkar M. Antidepressant like effects of *Achyranthes aspera* L. animals models of depression. Pharmacol. 2: 587-594 (2009).
  104. Edwin S, Jarald, E, Edwin D L., Jain A, Kingler H, Dutt K R. and Raj A A. Wound healing and antioxidant activity of *Achyranthes aspera*. Pharma. Biol.46(12): 824-828 (2008).
  105. Zahir A A, Rahuman A A, Kamaraj C, Bagavan A, Elango G, Sangaran A and Kumar B S. Laboratory determination of efficacy of indigenous plant extracts for parasites control. Parasitol Res. 105(2): 453-461 (2009).
  106. Pakrashi A and Bhattacharya N. Abortifacient principle of *Achyranthes aspera* L., Ind. J. Exp. Biol. 15: 856-858 (1977).
  107. Manjula M, Indira V and Dhasarathan P. Phytochemical characterization and antibacterial activity screening of *Achyranthes aspera*. Asian J. Microbiol. Biotech. Environ. Sci. 11(2): 365-368 (2009).
  108. Edwin S, Jarald E, Edwin D L, Jain A, Kingler H, Dutt K R. and Raj A A. Wound healing and antioxidant activity of *Achyranthes aspera*. Pharma. Biol.46(12): 824-828 (2008).
  109. Jayakumar T, Sridhar M P, Bharathprasad T R, Ilayaraja M, Govindasamy S and Balasubramanian M P. Experimental studies of *Achyranthes aspera* (L) preventing nephrotoxicity induced by lead in albino rats. J. Health. Sci. 55 (5): 701-708 (2009).
  110. Goyal B R., Mahajan SG, Mali RG, Goyal R K and Mehta A A. Beneficial effect of *Achyranthes aspera* L. in toluene-diisocyanate induced occupational asthma in rats. Global. J. Pharmacol. 1(1): 6-12 (2007).
  111. Datir S B, Ganjare A B, Nirmal S A, Bhawar SB, Bharati D K and Patil M J. Antiallergic activity of the various extracts of the aerial part of *Achyranthes aspera*. Pharmacol. online. 921-925 (2009).
  112. Chakraborty A, Brantner A, Mukainaka T, Nobukuni Y, Kuchide M and Konoshima T. Cancer chemo preventive activity of *Achyranthes aspera* leaves on Epstein-Barr virus activation and two-stage mouse skin carcinogenesis. Cancer letter: 177(1): 1-5 (2002).
  113. Khanna A K, Chander R., Singh C, Srivastava A K and Kapoor N K. Hypolipidemic activity of *Achyranthes aspera* L. in normal and triton induced hyperlipemic rats. Ind. J. Exp. Biol. 30(2): 128-130 (1992).
  114. Akhtar M S. and Iqbal J. Evaluation of the hypoglycaemic effect of *Achyranthes aspera* in normal and alloxan-diabetic rabbits. J. Ethnopharmacol. 31(1): 49-57 (1991).
  115. Zahir A A, Rahuman A A, Kamaraj C, Bagavan A, Elango G, Sangaran A and Kumar B S. Laboratory determination of efficacy of indigenous plant extracts for parasites control. Parasitol Res. 105(2): 453-461 (2009).
  116. Bafna A R and Mishra S H. Effect of methanol extract of *Achyranthes aspera* L. on rifampicin



- induced hepatotoxicity in rats. *Ars. Pharmaceutica*. 45(4): 343 -351 (2004).
117. Mehta A, Patel B G, Pandya S S, Ahir K B and Patel S B 2. Antinociceptive and analgesic activity of *Achyranthes aspera* L. extracts. *Pharmacology*. 3: 978-985 (2009).
118. Khan, M. T. J., Ahmad, K., Alvi, M. N., Noor-Ul-Amin., Mansoor, B., Asif Saeed, M., Khan, F. Z. and Jamshaid, M. Antibacterial and irritant activities of organic solvent extracts of *Agave americana* L., *Albizia lebbek* Benth. *Achyranthes aspera* L. and *Abutilon indicum* L. - a preliminary investigation. *Pak. J. Zoo.* 42(1): 93-97 (2010).
119. Malarvili T and Gomathi N. Effect of *Achyranthes aspera* (L.) seeds on redox and oxidative status in plasma and selected tissues of rats fed with high doses of fructose. *Biosci. Biotech. Res. Asia*. 6(2): 659-664 (2009).
120. Gupta SS, Bhagwat AW and Ram A K. Cardiac stimulant activity of the saponin of *Achyranthes aspera*. *Ind. J. Med. Res.* 60(3): 462-471(1972).
121. Kavishankar GB, Lakshmidevi N and Mahadeva Murthy S. Phytochemical analysis and antimicrobial properties of selected medicinal plants against bacteria associated with diabetic patients. *International Journal of Pharma and Bio Sciences*. 2(4): 509-518.
122. Prajapati Narayan Das, Kumar U., *Agro's Dictionary of Medicinal plants-2005* publish by Dr. Updesh Purohit for Agrobios (India), Jodhpur, pp. 5,6.
123. Bhav Misra Commented by Chunekar K.C. Edited by Pandey G.S. Edition 2006-366 page - 416.

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**\*Address for correspondence**

Dr. Ashwini Kumar Sharma  
Lecturer, P.G. Dept. of Dravya Guna  
Rishikul Govt. P.G. Ayurvedic College &  
Hospital  
Haridwar, Uttarakhand, India.  
Cell No: +918449910094  
Email: [drashwinisharma1972@gmail.com](mailto:drashwinisharma1972@gmail.com)