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# An Overview on Divine Herb *Apamarga* (Achyranthes aspera Linn.)

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#### **ABSTRACT**

In the present era *Ayurvedic* herbal drugs are getting popular all over the world. The demand of herbal drugs is increasing progressively due to their admirable efficacy, lesser side effect and good belief by communities. One of the important herb used in Ayurvedais *Apamarga* (*Achyranthes aspera* Linn.) which is also known as a Prickly chaff flower. This plant was extensively used since *Vedic kala*. It has lots of references in the *Vedas* and *Ayurvedic* literature not only for medicinal usage, but also for its astrological relevance. Due to high medicinal values of this plant it has got the honour of "**Lord of all plants on earth**" in *Vedas*. According to *Ayurveda*it is best for *Shirovirechana* and also useful in *Karnaroga*, *Krimi*, *Pandu*, *Arsha*, *Kushtha*, *Unmada*, *Apasmara*, *Ashmari*, *Hikka-Swaas*, *VishChikitsa*, *etc*. Modern researches have also highlighted its different pharmacological actions like Antimicrobial, Antifertility, Anti-arthritic, Anti cancerous, Anti asthmatic, Anti asthmatic, Renal disorders, Wound healing activity, Hepatoprotective, Anti depressant activity, Analgesic, antipyretic etc.

## **KEYWORDS**

Prickly Chaff Flower; Achyranthes aspera Linn; Pharmacological Activities; Hepatoprotective; Apamarga



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## **INTRODUCTION**

In Ayurvedic literature it is mentioned that there are no any plants which cannot be used as medicine. Some plants were much popular in communities during Vedic Kaal for medication. But nowadays, they are overlooked by people. One of such overlooked plant is Achyranthes aspera linn. which grows abundantly around us, but is least used by the community. It is reflected as a divine herb which has many references in the Vedas. It is not only popular for its medicinal uses, but also for its Astrological relevance. Nine different plants have been specified for nine different Grah (planets). Among which it pacifies Budha Grah (mercury planet) and is used in diseases caused due to disturbance in Budha Grah (mercury planet)<sup>1</sup>.

Apamarga is botanically known as Achyranthes aspera Linn. (Family-Amaranthaceae) and Latjira in Hindi. It is called Prickly Chaff Flower in English. Its fruiting bears spikes and prickles which stick to clothes of human beings and body of the animals passing its way due to which name Apamarga has been given to the plant. It is an erect stiff plant available as weed in whole India, Asia and several parts of the world. Achyranthes aspera Linn. (Latjeera) is an erect or procumbent, annual or perennial, much branched, suffruticose

or diffuse herb, 0.5-1 m high. Stem: Herbaceous, erect, quadrangular, branched, solid. hairv and green. Leaf: Opposite, entire acute, rough, coriaceous, 3.8-12.5 by 5.7cm. Flower: Greenish white,4-5 mm long, inflorescence spike long. Fruit: Utricle, 50cm oblongcylindrical, enclosed in the hardened perianth, smooth, brown, 2.5 mm long, easily disarticulating. Seed: Shape like rice, single, inverse, sub cylindrical, with a truncate and brown apex, 4-6mm, clear groove on side  $^{2,3}$ .

According to Mr. V.W. Karambelker- the son of Narsaad was the first soul to find out the medicinal attributes of *Apamarga* <sup>4</sup>. The entire plant is used as a curative as well as preventive medicine. It is used as single drug and in compound formulations. Achyranthes aspera Linn. is used by conventional healers for the dealing of dysentery, fever and diabetes <sup>5</sup>, bronchitis, piles, heart maladies, itching, abdominal problems, ascites, rheumatism, abdominal enlargement, rabies and for enlarged cervical gland <sup>6</sup>. According to *Charka*it is best for Shirovirechana and also indicated in Karnaroga, Krimi, Pandu, Arsha, Kushtha, Unmada, Apasmara, Ashmari, Hikka-Swaas, Vish Chikitsa and a huge number of diseases<sup>5</sup>.

The aim of this review is to collect and elaborate all the references of *Apamarga* 



stated in different texts of *Ayurveda* and published information on ethno medicinal and folklore usages along with pharmacological reports of this plant.

Material and Methods- The information regarding *Apamarga* is compiled from *Brihatrayees*, various *Nighantu*, and research articles for its details like synonyms, categorization (as *Gana/Varga*), vernacular names, pharmacological actions, parts used, dose, indications, folklore uses etc.

In *Vedic* description, about *Apamarga* is stated in different Samhitas of Yajurveda, Brahman granth i.e., Apamarga powder is indicate in *Hawan* for the purpose of Rakshoghnakarma. This symbolize that it should be used after drying or no other plant has got such property of removing water substance from our body. Its Papanashan, Mritunashana and Duhswapnanasana properties are stated to be major ones. Kushtha is known to be paaproga. This indicates Kushthaghna action Apamarga. Duhswapnanashana indicates its *Medhya* property<sup>7</sup>.

Koshikagraha sutra:-Apamarga is explained as a still tree and its divine wood (Samidha) is known for Fortune Progress. It's fruits are also known as the "Pratichini" fruit. It was a general practice to keep Apamarga Manjiri in house if someone fears of snake bit, Scorpion etc 8.

Apamarga is indicated in Brihatrayee (Charaka Samhita, Sushruta Samhita, and Ashtanga Hridaya) and Laghutrayee (Bhavaprakash samhita, Sharangdhar samhita, Kashyap samhita) for many diseases as a solo drug or various formulations. Nighantu has described Apamarga in form of its Paryaya Varga (categorization), (Synonyms), Vernacular names, Rasapanchaka (pharmacodynamics), Karma (therapeutic actions) and Rogaghnata (indications) etc.

## Various Classical uses of *Apamarga* are as follows <sup>9</sup> -

## Tuberculosis(Rajayakshma)

Apamarga and some other plants are used for local application in *rajayakshma* for *pusti*, *varna* and *bala*. (C.chi.8//175-177)

#### Unmada

Seed of *Apamarga* are used as *Anjana* in combination of other drugs (C.Chi.9/66-69)

#### To enlarge ear pinna -

Apamarga and other drugs, oils are used to it (S.su.16/21)

#### Memory (medhya)—

Medicated *Ghee* of *Apamarga* and other drugs are given to *Ksheerad* (infant up to the age of one year) to increase the memory (S.Sa.10/50)

Apamarga is mentioned as Shlokasahastradharina in Chakardutta for regular use of six months (Ch.D.6/24)

Jawar (fever)-



Apamarga root is tied with a red thread on Sunday and rolled seven times around the waist of the patient suffering from *jwara* (*Sankshipta Garud Puran*, Gita press Gorakhpur, 2015, pp315)

Bath by decoction of *Apamarga* in *vataja jwara* (Ka. Khi.11/107)

Tying of *Apamarga* root cures Malaria (*triyataka jwara*) (Vr. Ma.1/402)

## Abdominal Pain (Ajirna Shoola)

The Apamarga root along with rock saltcures Ajirna Shoola (garudpuranpp340)

Ghee cooked with decoction of Apamarga and paste of pippali cures abdominal pain. (SY.ghrta5)

#### Sinus-

Preparean oilwith the fruits of *Apamarga* and mix with cow urine and applied to nasal sinus(S.chi.17/25)

#### Ear Disease (Karnaroga)

Ash of the entire plant is prepared with sesame oil use as ear drop is a valuable remedy for ear complaints.(Ch.D.57/25)

## Severe migraine (Suryavarta)-

Apamarga navaneeta (butter) is good medication for severe migraine (Ch. D.43) Massage with Apamarga fruits cooked oil cure all types of pain in the head (GN3/1/125)

#### Eye disease

The root of *Apamarga*, Rock salt, sesame oil, milk and *kanji* (fermented sour

preparation) is crushed in copper vessel and its *Anjana* is applied in the eye, which keeps the eyes clean. (*garudpuran*pp332)

## Bleeding wound (Rakta-Strava in Varna)

Apamarga leaf juice or paste applied locally checks haemorrhage. (Ch.D.44/52)

## **Excessive Appetite (***Bhasmaka***)**

The seeds are boiled in milk and given in case of over or excessive appetite.(vr Ni. Ra.)

Apamarga seeds with milk and iguana meat juice in excessive hunger (c.Su.2/33)

#### Dog bite-

Leaf juice of *Apamarga* is usefulon the wound (AS.U.46/64)

#### Difficult labour-

Apamarga root should be kept into Vagina. It induces labour easily.(BS.striroga233)

The *Apamarga* root paste applied on navel, vulva and pelvis acts similarly (GN6/4/23)

## Pain in vagina-

A pair of leaves of *Apamarga* put into the vagina relieves pain instantaneously (GN6/6/15)

Apamarga root paste and punarnava removes vaginal pain during puerperium (VM13/40)

#### For Conception-

Apamarga root paste with milk give to woman drink during menstruation, then she leads to conception. (Sho.Ni.613)



**Synonyms-**Various synonyms of *Apamarga* are compiled from *Nighantu* are  $^{10}$ : -

Aaghat: (Grows in abundance), Apamarga(Cleanses channels particularly head), Adhahshalya (deflexed spinous bracteoles), Durgraha(Difficult to handle), Kharmanjari(spinous bracteoles and pointed periapt), Kinihi(Cures the eruptive conditions like vranaetc.or its touch may produce eruptions), Ksharmadhya(Plant is predominantly alkaline), Marga(Cleanses

channels), *Markati:* (Leave shave close apprisedhairs beneath), *Mayurak*( Tip of its spike is curved and is compare to head of peacock), *Pratyakpuspi*(Deflexed spinousbracteoles), *Shikhari*(Has flowers at the top)

Classification-Apamarga is classified in Tikta Skandha in all three Samhitas of Brihattrayee and also classified in different Gana or varga in Brihattrayee and various Nighantu in Table 1.

Table 1 Categorization of Apamarga under various Gana or Varga in Brihattrayee and Nighantu

Samhita/ Nighantu	Gana / Varga	Reference	
Charaka Samhita <sup>11</sup>	Phalinidravya,	C.Su.1/81,2/3,4/23,4/27	
	Shirovirechandravya, Vamnopaga,		
	ShirovirechanopagaMahakashaya		
Sushruta Samhita <sup>12</sup>	Varunadigana, Virtaruvadigana , Arkadigan	S.Su.38/8,38/10,38/16,39/4,39/6,42	
	a,Virechanadravya ,Shirovirechanadravya,	/22,43/3	
	Tikatavarga, Vamnadravya	,	
AshtangaHridaya <sup>13</sup>	Tiktaskandha,	A.h.Su. 10/29,	
•	Shirovirechandravya,Madhyamakshara,	A.h.Su.15/4,30/10	
Dhanvantari	GuduchyadiVarga	D.N.1-8, Guduchyadi Varga290-	
Nighantu <sup>14</sup>		295	
Sodhala Nighantu <sup>15</sup>	GuduchyadiVarga	So.N.part-1,	
_		GuduchyadiVarga261-262	
Madanpal Nighantu <sup>16</sup>	AbhayadiVarga	M.N.Abhayadivarga106-107	
Kaiyadeva Nighantu <sup>17</sup>	Oshadhivarga	K.N.Oshadhi varga1032-1037	
Bhavaprakasha	GuduchyadiVarga	B.N. Guduchyadivarga 187-191	
Nighantu <sup>18</sup>			
Raja Nighantu <sup>19</sup>	ShatahwaadiVarga	R.N. Shatahwaadi Varga4,88-91	
Nighantu Aadarsha <sup>20</sup>	Apamargadivarga	Ni.A .Vol 1	
Pirya Nighantu <sup>21</sup>	Shatpuspadivarga	Pri. Ni.177-179	

Vernacular names-English:- Prickly
Chaff Flower, Chaff Tree,Rough Chaff
Tree; Hindi: -Chirchira,Latjira; Bengali:Apang; Gujrati:-Aghedo; Kannada:Uttarane,Uttaren; Malyalam:-Kadaledee;
Marathi:-Anghada; Punjabi:Puthakanda,Lattajeera; Tamil:-Nayuruvi;

Assam:- Chirchita, Apang; Urdu: – Chirchita; Rajasthan:- Andhijalo, Andijaro **Part used** (*Prayojyang*)- Whole plant, Root, Leaves, Spikes, Seeds and *Kshara* <sup>5</sup> are usable parts of *Apamarga*.

Pharmacodynamics (Rasapanchaka)<sup>5</sup>

Rasa-Katu, Tikta

Guna-Laghu, Ruksha, Sara, Tiksana



Veerya-Ushna

Vipaka-Katu

**Dose-**As per *Ayurvedic* pharmacopoeia of India, Dose of *Apamarga Root Churna*is 5-10gm,20-50 gm of the drug for decoction<sup>22</sup>.Acc.to *Bhavprakash Nighantu* dose of *Apamarga* Root and seed *Churna* is 5-10gm, *Kwatha*-15-50ml, *Kshara*-0.5to1gms<sup>23</sup>.

*Anupana*– To be taken with betel leaf<sup>24</sup>.

Ethno medicinal, Folk&Tribal use-

Achyranthes aspera Linn.catches a special mention for its use in folk medicine in different part of the country. Ethnomedicinal, Folk and Tribal uses of Achyranthes aspera Linn.is listed in Table-2.

**Table 2** Different Ethno medicinal and Pharmacological Uses of Achyranthes aspera Linn.

S.no.	Plant part used as medicine	no medicinal and Pharmacological Uses of Achyranthes aspera Linn.  Ethno medicinal &Pharmacological use	
1 L	Leaf	Juice along with opium taken with water two times in syphilitic sores,	
		gonorrhoea, bowel complaint, pile and boil.	25
		Jaggery, black pepper and garlic mixed with fresh leaves and made	26
		pills and take twice a day.	27
		Seven leaves crushed and take a twice a week and crushed leaves are	
		used for curing strained back.	
2	Stem	• Fresh stem used as a tooth brush.	28
3 Roo	Root	Root paste is taken internally with buttermilk as anti –fertility drug.	
		The fresh root decoction is put into the vagina to terminate the	29
		pregnancy.	30
		Powder take daily in leprosy.	31
		Paste taken daily for anti- fertility action.	32
		Root ash mixed with water taken in cough, ascites, anasarca.	33
		Powder take twice a day in Bleeding in delivery.	
		Decoction of root given in Pneumonia, stomach problem.	34
		The root paste is applied to external genitalia to induce labour pains.	
		Root of Apamarga is pounded with black pepper and given orally with	
		water in cases of Snake bite for checking venomous poison.	
4	Seed	Raw seeds take with water as expectorants, Brain tonic, bleeding piles	35
		Cold infusion of rice mixed with <i>Apamarga</i> seeds orally used in	
		bleeding piles or haemorrhoids. (Pandey)	
5	Flower	Flower paste taken in menorrhagia	36
		Flower paste externally applied in Snake and reptile bite	37
6	Fruit	Unripe fruits given three times daily in respiratory problems	36
7	Whole plant	<ul> <li>The dried herb is treat to children for colic pain</li> </ul>	37
		<ul> <li>Plant ash and a pinch of salt mixed with mustard oil use</li> </ul>	37
		asTooth powder	24
		Plant ash with honey used to cure cough	
		Decoction is taken in renal problem, general	34
		anasarca,berybery, pneumonia	
		Root powder with milk in Rheumatism and blindness	
8	Kshara (Ash)	The kshara either alone or mixed with <i>Hartala</i> is a caustic	30
	` '	agent and cures warts on the penis or other part of the body	
		• Kshara is given with honey in colic, cough, asthama etc.	38



#### Pharmacological activities

AchyranthesasperaLinn.Is popular as most extensively used plantsfor a long period in traditional medicine. This plant possesses many useful properties like Antifertility, Antimicrobial, Anti-inflamatory, Antiarthritic etc. The major biological actions of AchyranthesasperaLinn. including the following.

#### **Antimicrobial**

Achyranthesaspera Linn. herb parts have been examined for invitro antimicrobial action against different types of bacteria like Bacillus subtilis, Staphylococcus aureusetc. by disc diffusion method with Different solvents such as ethanol. acetonitrile etc<sup>39</sup>. The plant leaf extract was evaluated for having antibacterial property against hospital origin gram positive bacteria<sup>40</sup>. In other study *Apamarga* was evaluated as herbal antimicrobial activity for cotton fabric in healthcare textiles<sup>41</sup>. The plant was evaluated against dental pathogens<sup>42</sup>.

#### Larvicidal

Essential oil of leaf and stem extracted by steam distillation was found as a bioactive larvicidal against Aedesegypti and Culexquinquefasciatus<sup>43</sup>.

## **Antifertility**

The plant is popular as antifertility agent in *Ayurvedic* literature also in modern text. Whole plant extracts has shown

abortifacient outcome in mice but maximal activity was shownin the benzene extract<sup>44</sup>. Theplant shoot were reported to prevent conceptionin adult female rats<sup>45</sup>. The extracts of leaves, roots, and seed of the plant check fertilityand also used to retraction of placenta, and check the postpartum bleeding<sup>46</sup>.

#### Anti cancerous

The plant was studied for having anticancer activity and antitumor activity<sup>47</sup>. Methanolic extract of Leaves were found to have inhibitory activity against human pancreatic carcinoma cells refer to its its anti-proliferative and anti-carcinoma activity<sup>48</sup>.

## **Immunostimulant**

The extract of *Achyranthes aspera* Linn. (Amaranthaceae) was found to raise the trigger of ovalbumin (OVA)- specific humoral antibody action in mice<sup>49</sup>. The plant seeds were studied to enhance immunity of Cyprinuscarpio<sup>50</sup>.

#### Hypoglycaemic

Powdered form of whole plantparts and aqueous and methanolic extracts, administeredoraly shown hypoglycaemic activity in normal and alloxan-diabetic rabbits<sup>51</sup>.

## **Anti-inflamatory**

Anti-inflamatory action of *Achyranthes* aspera Linn. has been reported 52. Alcoholic



plant extract was establish to be largelyactive in most of the reports<sup>53</sup>.

#### **Anti-oxidant activity**

The plant has proven antioxidant action of *Achyranthes aspera* Linn. roothas been reported<sup>54</sup>.

#### **Anti asthmatic**

Antardhooma Bhasma of *Achyranthes* aspera Linn.in TamakaShwasa (bronchial asthma) was proved to be effective <sup>55</sup> The ethanolic extract of the plant protected by Toluene diisocyanate (TDI) induced occupational asthma in Wister rats<sup>56</sup>.

## Anti spasmodic

The whole plant was shown tohave anti spasmodic property<sup>57</sup>.

## **Anti-allergic activity**

The anti allergic activity of petroleum ether extract of the entire plant shows significant in both milk inducedeosinophilia and milk induced leukocytosis in mice<sup>58</sup>.

#### Diuretic

Active compounds of plant likeSaponins and Achyranthineare responsible for the plant's diuretic property<sup>59</sup>.

## **Renal disorders**

Methanolic extracts of Achyranthes aspera Linn. was shown to prevent lead induced nephrotoxicity in albino rats and inhibit mineralization of urinary stones<sup>60</sup>.

## **Antileprotic**

Achyranthes aspera Linn. is effective treatment for leprosy has been studied <sup>61</sup>.

The plant was also reported for its effectivity against lepromatousleprosy<sup>62</sup>.

## Anti fistula-in-ano and piles

Achyranthes aspera Linn.is mainingredient of Ksharsutra it is used inhandling of fistula-in-ano<sup>63</sup>. The plant ash and juice were mentioned to treat bleeding piles<sup>64</sup>.

#### Anti-arthritic

Anti-arthritic activity of Achyranthine seprated from *Achyranthes aspera* Linn.has been reported<sup>65</sup>. The plants efficacy in rheumatoid arthritis was also reported. The anti-inflammatory action of achyranthine was studied in adult albino rats weighing 100-150 g utilizing a "umber of techniques viz. carrageenin induced oedema of rat hind paw<sup>66</sup>.

## Anti cataract activity

The study suggested that the *Achyranthes* aspera Linn. leaves have anticataract and antioxidant activities, which might be useful in preventing or slowing the progress of cataract. Aqueous extract of leaf report anti cataract activity in fresh goat eye balls<sup>67</sup>.

## Wound healing activity

The plant has reported wound healing action comparative protein profile of granulation tissues of burn and the methanol extract of the plant have treated diabetic wound with 5.0% ointment<sup>68</sup>.

#### **Anti-dandruff activity**



Methanolic leaf extract of *Achyranthes* aspera Linn.as a polyherbal hair oil (PHO) possesses anti-dandruff activity<sup>69</sup>.

## **Neuropharmacological activity**

Achyranthes aspera Linn. Methanol extract was shown to have neuropharmacological action<sup>70</sup>.

## Anti snake venom activity

Anti snake venom action of *Achyranthes* aspera Linn.has been shown experimentally supporting its widespread ethnic use against venomous bite<sup>71</sup>.

#### **Cardiac activity**

The saponin separated from seedof *Achyranthes aspera* Linn.has been noticed when it was reported to cause increase in force of contraction of intact and isolatedhypo dynamicheart<sup>72</sup>.

## **Anti hepatitis**

A clinical trial held on patients of acute viral hepatitis the efficacy of *Achyranthes aspera* Linn.was tested as an ingredient of a formulation<sup>73</sup>.

#### Hepatoprotective

Methanol extract from shoot of *Achyranthes aspera* Linn.exhibited significant hepatoprotective effect caused paracetamol induced toxicity in rats<sup>74</sup>.

#### Anti anasacra

Oral administration of *Achyranthes aspera* Linn. in cases ofgeneral anasarca was reported<sup>75</sup>.

# Analgesic, antipyretic and antinociceptive

Methanolic extract of root and leaf <sup>76</sup> showed analgesic action and Leaves were reported to be analgesic, antipyretic <sup>77</sup> and antinociceptive action <sup>78</sup>.

## **Prothyrodic**

Achyranthes aspera Linn. extract changes thyroid hormone concentration and decrease hepatic lipid peroxidation in rats and leaf extract was shown to have prothyroidic and antiperoxidative property<sup>79</sup>.

## **Anthelmintic activity**

The leaf extract was preliminary screened for anthelmintic action when tested against earthworms (Pheretimaposthuma)<sup>80</sup>.

## **Anti obesity**

The plant was clinically investigated against obesity and showed positive results<sup>81</sup>.

#### Anti depressant activity

Leaf Methanol extract shows depress relies activity in Mice and rats<sup>82</sup>.

## Anti ovulatory and Anti implantation

Root methanol extract determine anti ovulatory and anti implantation activity in virgin female rats<sup>52</sup>.

#### **Blood pressure**

Aqueous and alcoholic extracts of the roots cause fall in blood pressure <sup>83</sup> but the chloroform extract raised the blood pressure in dogs <sup>84</sup>.



## **Anti –tumor activity**

Leaves methanolic extract of *Achyranthes* aspera Linn. has anti tumor activity<sup>85</sup>.

## **Anti asthmatic activity**

Whole plant alcoholic extract shows anti asthmatic propertyinwistarrats<sup>86</sup>.

## Veterinary

Diarrhoea preventive activity in piglets<sup>87</sup>. the plant herbal preparation has shown therapeutic efficacy in induced hepatopathy in sheep<sup>88</sup>.

## Anti plant pathogen activity

Aqueous extract of leaf of Achyranthes aspera Linn.was tested in infested banana fruits its showeddelay in first disease symptom with minimum weight loss in fruit 89 Aqueous extracts of leaves of the plantinhibitSeed-borne fungi of wheat with anincrease in seed germination<sup>90</sup>. Antifeedant action of Achyranthes aspera Linn.on cauliflower bit(Hellulaundalis), fruit and leaf bit of cauliflower (Spodopteralitura) and Brinjal fruit bit(Leucinodesarbonalis) also was reported<sup>91</sup>.

## Safety evaluations-

According to OECD guidelines the acute and sub acute toxicity study was carried out in albino mice in different doses. The result was the whole plant powder methanol extract of Achyranthes Aspera Linn. Was shown to be nontoxic<sup>92</sup>. Leaf decoction was reported for cardiovascular toxicity<sup>93</sup>.

## Discussion -

Ayurvedic literature mentioned that all plants have some pharmacological activities and there is no any plant which cannot be used as medicine. Some plants are so much popular in communities for the Vedic Kala for medication. Apamarga is well described in the Vedas and Purana text. Yajurved texts quote Apamarga Saktu for antimicrobial property. Atharvaveda broadly cited Apamarga and as per the etymology provided by *shayana* this plant driveway the vitiated doshas from the body. Hence the name Sahasravirya given to the plant best proves itself. Krimighna, Rakshoghna, Rasayana, Arshoghna, Vishaghna etc. Karmas are described in Paippalyadashakha. Acharya Charak described about it in Agraya dravya as "Pratyakpuspa Sirovirechananam" 11 and gave its name to the second adhyaya of Sutrasthan as Apamarga tanduliya<sup>11</sup>.

Rasa panchaka of Apamarga, Tikta, Katu rasa, Ushnaveerya, Laghu, ruksha and tikshana guna and improves digestion and also useful in Chardi (vomiting), diseases of Kapha, Medas(fat) andVata. It is also useful in Kandu (itching), Hardya roga (heart disease), Udarasula (pain in abdomen), Adhmana (flatulence), Arsa (piles), Udara (enlargement of abdomen) and Apaci (scrofula)<sup>18</sup>. Apamarga is held to be Agnikrit and have Tikshana property.



ApamargahaveDeepana property and showed in Kapha-Vata diseases. It is shown inDadru, Apashmara, Sidhma ,Arsha ,Kandu, Shoola, Udarroga, Aruchietc.

Regarding karma of it, Acharyasdetailed its action as Shothahara, Vedanasthapana, Lekhana, Vishaghna, Shirovirechana, Rochan, Deepan, Pachana, Pittasaraka, Krimighnaetc<sup>94</sup>.

## **CONCLUSION**

Achyranthes aspera Linnis a very useful herb having a wide description in various Vedic garantha and in Ayurvedic texts. Different research activities carried out in modern time also depict its various pharmacological activities which have become a prime concern to modern scientists. Despite this, local community seems to be least aware of the valuable uses of this plant. Plant is seen to grow carelessly as a weed in waste areas. Proper awareness about the values and uses of the plant must be given to the community so that we can preserve the valuable ancient knowledge of Ayurveda for our future generation.



## REFERENCES

- 1. Bhavisya puran, brahma parva, Gita press Gorakhpur, 2015, pp. 91,92
- 2. Anonymous. The Wealth of India Raw Materials, Council of Scientific & Industrial Research, New Delhi, 2005, 55-57.
- 3. R. Zafar. Medicinal Plants of India. CBS publishers & distributors, 2009, 1-15
- 4. Karambelkar , V.m. The Atharveda and the ayurveda Kum. Usha Karambelkar, Nagpur- 2, 1961
- 5. Sharma PV. Dravyaguna Vijnana, Vol-
- 2. .Chaukhamba Bharati Academy Varanasi; reprint 2015.p.542
- 6. Dwivedi S, Dubey R, Mehta K. Achyranthes aspera Linn. (Chirchira): a magic herb in folk medicine. Ethno Botanical Leaves lets 2008; 12:670-6.
- 7. Sharma P.V. Dravyaguna Vigyana, vol
- 4, Chaukhambha Bharti Academy, Varanasi, reprint:2014.P.no.8
- 8. Koshika sutra 50/22
- 9. Sharma Priyavrat Classical uses of Medicinal plants Chaukhambha Visvabharati Varanasi,reprint year 2004.P.no.11
- 10. Sharma P.V. ,
  Namaruagunam(characterization of
  Medicinal plants),Chaukhambha
  Visvabharati, Varansi, reprint 2011,
  P.no.12

- 11. Vaidya Yadavji Trikamji Acharya ,Caraka Samhita of Agnivesa elaborated by Caraka and Drudhabala with Ayurveda-Dipika Commentary by Cakrapanidatta, Varanasi , Chaukambha Surbharati Prakashan, reprint edition ,2016Sutrasthana 1/81,2/3,4/23,4/27
- 12. Vridhha Sushruta, Acharya Sushruta, Nagarjuna, Chandrat, Sushruta Samhita, With commentary Nibandhsangraha of Dalhanacharya, edited by Acharya yadavaji trikamji, Reprint, Chaukhambha surbharti Prakashan, Varanasi, 2008 Sutrasthana 38/8,38/10,38/16,39/4,39/6,42/22,43/3
- 13. Hari Sadasiva Sastri Paradkara, Astangahrdaya of Vagbhata,with Sarvanga sundara commentary by Arunadatta and Ayurveda rasayana of Hemadri, Varanasi, Chaukambha Surbharati Prakashan, reprint edition ,2016,Sutrasthana 10/29,15/4,30/10 14. Sharma PV, Guruprasad Sharma, editors. Dhanvantari Nighantu, Reprint., Varanasi: Chaukhambha Orientalia; 2008 . 15. "Shodhal Nighantu", Editor. Baroda: University Publications Sales Unit; 1978. Anonymous.
- 16. Pandit RP. "Madanpal Nighantu".Mumbai: Khemraj SrikrishnadasPrakashan; 1998.
- 17. Sharma PV, Guruprasad Sharma, editors. Kaiyyadeva Nighantu. Reprint ed. Varanasi: Chaukhambha Orientalia; 2009



- 18. Bhavamishra. Bhavaprakasha Nighantu, Chunekar KC, Late Pandey GS editor. Reprint ed. Varanasi: Chaukhamba Bharati Academy; 2015, pp210-220.
- 19. Tripathi ID, editor. Raja Nighantu with Dravyagunaprakashika commentary, 8th ed. Varanasi: Chaukhambha Krishnadasa Academy; 2005.
- 20. Bapalal Vaidya. Nighantu Adarsha, Vol-2. Reprint ed. Varanasi: Chaukhambha Bharati Academy; 2016.
- 21. Sharma PV. Priya Nighantu (Hindi). Varanasi: Chaukhamba Surbharati Prakashan; 2004.
- 22. Anonymous. The Ayurvedic Pharmacopoeia of India, Vol- 2&3. 1st ed. New Delhi: Dept. of I.S.M. and H. Ministry of Health and Family Welfare, Govt. of India; 1999. Appendix 2.
- 23. Shri Bhavamishra Bhavaprakasa Nighantu commentary by Padamshri Prof.K.C. Chunekar edited by Late Dr. G.S.pandey Chaukhambha Bharati Academy edition 2010
- 24. Khory R.N.,Brux M.D.,Bombay Materia Medica and their Therapeutics,periodical expert book agency, Delhi 1986, P.no.461
- 25. Dwivedi SN. Herbal remedies among tribals of sidhi district of Madhya Pradesh. J Econ Tax 2004; 28(3):675-86
- 26. Dwivedi SN, Shrivastava S, Dwivedi
- S. Dwivedi A. Dwivedi S. Kaul S.

- Relivance of medicinal herbs used in traditional system of medicine, Farmavita Net; 2007.
- 27. Singh VK, Ali ZA,Zaidi STH.Ethanomedicinal uses of plants from gonad district forests of utter Pradesh, india fitoterapia,1996;67(2):129-139
- 28. Gopalanchari R, Dhar ML. Studies in the constitution of the saponin from the seeds of Achyranthes aspera: Part 1-identification of the sapogenins. J Sci Indust Res 1985; 17(B):276-8.
- 29. Rao RR. Ethnobotany of Meghalaya: medicinal plants used by khasi and garo tribes. Econ Bot 1981; 35(1):4-9.
- 30. Malhi BS, Trivedi VP. Vegetable antifertility drug of India. Quert crude Drug Res 1972; 12(3):1922-8.
- 31. Nadkarni KM. Indian Materia medica, Vol-I, 3<sup>rd</sup> ed. Bombay popular prakashan; 2005. p. 21-22.
- 32. Bhattacharjee SK, DeLC, Medicinal herbs and flowers, Awishkar publishers and ditributres, jaipur 1991
- 33. Jain SK, Tarafdar CR. Medicinal plant lore of the sandals. A review of P.O. Bodding's work. Econ Bot 1970;
- O. Bodding's work. Econ Bot 1970; 24(3):241-75.
- 34. Quisumbing E. Medicinal Plants of the Philippines Tech Bull, Phillips Dep. Agri Natur Res, 16, Manila, Philippine Islands: Manila Bureau of Printing; 1951.



- 35. Rangari VD. Pharmacognocy and phytochemistry Part II, Ist edition, Carrer publication; 2006. p. 179-80.
- 36. Dwivedi SN. Ethnobotanical studies and conservational strategies of wild and natural resources of rewa district of madhya pradesh. J Econ Tax Bot 2003; 27(1):233-4.
- 37. Chopra RN. Indigenous drug of India, Calcutta; 1933.
- 38. Deepak SA, Oros G, Sathyanarayana SG. Shetty HS, Sashikanth Antisporulant activity of watery extracts of plants against Sclerospora graminicola causing downy mildew disease of pearl millet, American Journal of Agricultural and Biological Sciences, 2 (1), 2007, 36-42 39. P.V. Lakshami naidu,K. Kishire kumar, C. Mohan kumar, G. Ganesh and M. Narasima rao, ANTIMICROBIAL ACTIVITY OF Achyranthes Biosciences, Biotechnology Research Asia, Vol. 3(1a), 171-174 (2006)
- 40. Thangavel M, Raveendran M, Kathirvel M, A comparative study on the effect of plant extracts with antibiotics on organisms of hospital origin, Ancient Science of Life, 26(1/2), 2006, 65-72.
- 41. Thilagavathi G, Kannaian T, Application of Prickly Chaff (*Achyranthes aspera* Linn) leaves as herbal antimicrobial finish for cotton

- fabric used in healthcare textiles, Natural Product Radiance, 7(4), 2008, 330-334.
- 42. Prabhat, Ajaybhan, Navneet, Chauhan A, Evaluation of antimicrobial activity of six medicinal plants against dental pathogens, Report and Opinion, 2(6), 2010.
- 43. Khandagle AJ, Tare VS, Raut KD, Morey RA, Bioactivity of essential oils of *Zingiber officinalis* and *Achyranthes aspera* against mosquitoes, Parasitol Res., 2011.
- 44. Pakrashi A, Bhattacharya N, Abortifacient principle of *Achyranthes aspera* Linn., Indian J. Exp. Biol., 15, 1977, 856-858.
- 45. Wadhwa V, Singh MM, Gupta DN, Singh C, Kamboj VP, Contraceptive and hormonal properties of *Achyranthes aspera* in rats and hamsters, Planta Medica, 5, 1986, 231-233.
- 46. Mathew KM, Dictionary of Indian folk medicine and Ethnobotany,1991.
- 47. Chakraborty A, Brantner A, Mukuinaka T, Nobukuni Y, Kuchido M, Konoshima T, Cancer chemo preventive activity of *Achyranthes aspera* leaves on Epstein-Barr virus activation and two stage mouse skin carcinogenesis. Cancer Letters, 2002, 177, 1–5.
- 48. Subbarayan PR, Sarkar M, Impellizzeri S, Raymo F, Lokeshwar BL, Kumar P, Agarwal RP, Ardalan B,



Anti-proliferative and anti-cancer properties Achyranthes of aspera: Specific inhibitory activity against pancreatic cancer cells, J. Ethnopharmacology, 131(1), 2010, 78-82. 49. Vasudeva Rao Y, Duddukuri GR, Babu G, Rao R, Immunomodulatory activity of Achyranthes aspera on the elicitation of antigen-specific murine antibody response, Pharmaceutical Biology, 40, 2002, 175-178.

- 50. Vasudeva Rao Y, Chakrabarti, R, Stimulation of immunity in Indian major carp *Catla catla* with herbal feed ingredients, 18(4), 2005, 327-334.
- 51. Malarvili T, Gomathi N, Effect of *Achyranthes aspera* (Linn) seeds on redox and oxidative status in plasma and selected tissues of rats fed with high doses of fructose, Biosciences Biotechnology Research Asia, 6(2), 2009, 659-664.
- 52. Iwalewa EO, McGaw LJ, Naidoo, V, Eloff JN, Inflammation: the foundation of diseases and disorders. A review of phytomedicines of South African origin used to treat pain and inflammatory conditions. African Journal of Biotechnology, 6(25), 2007, 2868-2885.
- 53. Gokhale AB, Damre AS, Kulkami KR, Saraf MN, Preliminary evaluation of anti-inflammatory and anti-arthritic activity of *S. lappa*, *A. speciosa* and *A*.

*aspera*. SPhytomedicine, 9(5), 2002, 433-437.

- 54. Datir SB, Nirmal SA, Ganjare AB, Bhawar SB, Patil MJ, Antioxidant activity ofthe of aerial parts the **Achyranthes** aspera var. **Porphyristachya** (Wall. Ex Moq.) F., Hook. Research Journal of Pharmacognosy and Phytochemistry, 1(3), 2009, 220-223.
- 55. Charyulu GP, Effect of Apamarga Achyranthes aspera Antardhooma Bhasma on cases of Tamaka Shwasa Bronchial Asthma, Indian Journal of Pharmaceutical Sciences, 1982, 44.
- 56. Goyal BR, Mahajan SG, Beneficial effect of Achyranthes apsera Linn. in Toluene-di-isocyanate induced occupational asthma in rats, Global Journal of Pharmacology, 1(1), 2007, 06-12
- 57. Aswal BS, Goel AK, Kulshrestha DK, Mehrotra BN, Patnaik GK. Screening of Indian plants for biological activity. Part XV., Ind. J. Exp. Biol., 34, 1996, 444-467.
- 58. Datir SB, Nirmal SA, Ganjare AB, Bhawar SB, Patil MJ, Antioxidant activity of parts of the aerial the **Achyranthes** aspera var. *Porphyristachya* (Wall. Ex Moq.) Hook. F.. Research Journal of Pharmacognosy and Phytochemistry, 1(3), 2009, 220-223.



- 59. Ram AK, Gupta SS, Diuretic activity of *Achyranthes aspera* saponin, Indian Journal of Physiology and Pharmacology, 14, 1970, 47.
- 60. Farook NAM, Rajesh S, Jamuna M, Inhibition of mineralization of urinary stone forming minerals by medicinal plants, E-Journal of Chemistry, 6(3), 2009, 938-942.
- 61. Tripathi SN, Chaturvedi GN, Dube GP. Effect of *Achyranthes aspera* in the treatment of leprosy, J. Med. Sci. (BHU), 4, 1963, 103-112.
- 62. Ojha D, Singh G, Apamarga (*Achyranthes aspera*) in the treatment of lepromatous leprosy, Lepr. Rev. 39, 1968, 23-30.
- 63. Deshpande PJ, Pathak SN, The treatment of fistula in ano with Kshara Sutra, Nagarjun, 1965, 361-367.
- 64. Khare CP (Ed.), Indian Medicinal Plants An Illustrated Dictionary Springer-Verlag Berlin/Heidelberg, 2007, 11-12.
- 65. Aggarwal D, Singh H, Kshara basti in amavata (rheumatoid arthritis), Sachitra Ayurved, 59(3), 2006, 223-224.
- 66. Neogi NC, Rathor RS, Shrestha AD, Banerjee DK, Studies on the anti-inflammatory and anti-arthritic activity of achyranthine, Indian Journal of Pharmacology, 1(3), 1969, 37-48.
- 67. Umamaheswari M, Sundaram D, Thirumalaiswamy S, Varadharajan S,

- Jagannath P, Arumugam M. Anticataract and antioxidant activities of *Achyranthes aspera* Linn. against glucose-induced cataractogenesis using goat lenses. J Nat Prod Plant Resour 2012; 2(1):153-61
- 68. Barua CC, Talukdar A, Begum SA, Handique AK, Handique GK, Roy JD, Buragohain B, Impact of *Achyranthes aspera* L. on protein profile in impaired wound models. Indo Global Journal of Pharmaceutical Sciences, 1(1), 2011, 13-24.
- 69. Suresh Kumar P, Sucheta S, Umamaheswari A, Sudarshana Deepa V, In vitro and in vivo evaluation of anti-dandruff activity of formulated polyherbal hair oil, Journal of Pharmacy Research, 3(12), 2010, 2956-2958.
- 70. Alam MA, Slahin N, Riaz Uddin, Hasan SMR, Akter R, Kamaluddin MF Abdullah, Ghani A, Analgesic and neuropharmacological investigations of the aerial part of *Achyranthes aspera* Linn., Stamford Journal of Pharmaceutical Sciences, 1(1&2), 2008, 44-50.
- 71. Samy RP, Thwin MM, Gopalakrishnakone P, Ignacimuthu S, Ethnobotanical survey of folk plants for the treatment of snakebites in southern part of Tamilnadu, India. J Ethnopharmacol., 115(2), 2008,302-312.
- 72. Gupta SS, Bhagwat AW, Ram AK, Cardiac stimulant activity of the saponin



of *Achyranthes aspera* (Linn.), Indian Journal of Medical Research, 60(3), 1972, 462-471.

73. Dange, SV, SA Phadke, Comparative efficacy of five indigenous compound formulations in patients of acute viral hepatitis, Maharashtra Medical Journal, 36(5), 1989, 75.

74. S.V. Suresh Kumar, G Chandrika, K Mahesh, PVS Meghanath, Hepatoprotective activity of Achyranthes aspera linn against paracetamol induced toxicity, International Journal of Pharmacy and Pharmaceutical Sciences, vol 4, suppl 5, 2012

75. Ajaishankar, Parsai MR, Naqvi SMA, Jain JP, A clinical trial of apamarga (*Achyranthes aspera*) in cases of shoth (general anasarca),1980. Journal of Research in Ayurveda and Siddha, 1(4), 1980, 514-528.

76. Kumar H, Singh D, Kushwaha SKS, Gupta AK, Comparison of leaf and root extract of *Achyranthes aspera* for its analgesic activity, Der Pharmacia Lettre, 1(2), 2009, 193-198.

77. Sutar NG, Sutar UN, Sharma YP, Shaikh IK, Kshirsagar SS, Phytochemical investigation and pharmacological screening of leaves of *Achyranthes aspera* Linn. as analgesic and antipyretic. Biosciences

Biotechnology Research Asia, 5(2), 2008, 841-844.

78. Barua CC, Talukdar A, Begum SA, Lahon LC, Sarma DK, Pathak DC, Borah P, Antinociceptive activity of methanolic extract of leaves of *Achyranthes aspera* Linn. (Amaranthaceae) in animal models of nociception, Indian J. Exp. Biol., 2010, 48, 817-821.

79. Tahiliani P, Kar A, *Achyranthes* aspera elevates thyroid hormone level and decrease hepatic lipid peroxidation in male rats, J. Ethanopharmacol., 71, 2000, 527-532.

80. Sujitha K, Phani Sri A, Mohan Rao PM, Lal Mahammed, Srinivasarao K, Karuna Sree V, Preliminary screening of Syzygium cumini and *Achyranthes aspera* for their anthelmintic activity, Research Journal Of Pharmacognosy and Phytochemistry, 2(6), 2010, 441-445.

81. Mangal A, Sharma MC, Evaluation of certain medicinal plants for antiobesity properties, Indian Journal of Traditional Knowledge, 8(4),2009, 602-605.

82. Barua CC, Talukdar A, Begum SA, Buragohain B, Roy JD, Borah RS, *et al*. Antidepressant-like effects of the methanolic extract of *Achyranthes aspera* Linn. in animal models of depression.

83. Bodare RD, Birje KN, Bansode DL, Deshmukh AJ, Inamdar II, Mane AB, *et al.* Antiovulatory and antiimplantation



effect of ethanolic extract of root of *Achyranthes aspera* Linn. in the female rat. J Cell Tissue Res 2013; 13(2):3775-8.

- 84. Paul D, Bera S, Jana D et al. Contraception, 73,2006,284
- 85. Chakraborty A,Brantner A et al. Cancer chemopreventive activity Achyranthes aspera Leaves on Epstein-Barr Virus activation and two stage mouse skin carcinogenesis, Cancer Lett, 177, 202,1-5
  86. Bhom,K.H. et al Hagers Handbehder
- 86. Bhom, K.H. et al Hagers Handbehder pharmazeutischen praxis, V.Spring Verlag, Berlin, 1992, 54-59
- 87. Son PH, Trung PQ, Vui TQ, Lan DTB, Preliminary research results on application of a local medicinal herb (*Achyranthes aspera*) as dietary supplement to sows to prevent diarrhea in piglets, Livestock Research for Rural Development, 15(7), 2003.
- 88. Bhaumik A, Sharma MC, Therapeutic efficacy of two herbal preparations in induced hepatopathy in sheep, The Journal of Research and Education in Indian Medicine, 12(1), 1993, 33-42.
- 89. Singh HNP, Prasad MM, Sinha KK, Efficacy of leaf extracts of some medicinal plants against disease development in banana, Letters in Applied Microbiology, 17, 1993, 269–271.
- 90. Hasan MM, Chowdhury SP, Alam S, Hossain B, Alam MS, Antifungal effects of

plant extracts on seed-borne fungi of wheat seed regarding seed germination, Seedling health and vigour index, Pak. J. Biol. Sci., 8, 2005, 1284-1289.

- 91. Girija S, Valarmathy N, Antifeedant effect of *Achyranthes aspera* Linn on cauliflower borer (*Hellula undalis*), fruit and leaf borer of cauliflower (*Spodoptera litura*) and Brinjal fruit borer (*Leucinodes arbonalis*). Biosciences Biotechnology Research Asia, 5(2), 2008, 663-672
- 92. Uma A. Bhosale, Radha Yegnanarayan, Prachi Pophale and Rahul Somani, Effect of aqueous extracts of *Achyranthes aspera* Linn. on experimental animal model for inflammation. Ancient science of life 2012 Apr-Jun; 31(4): 202–206.
- 93. Han, ST, Un, CC, Cardiac toxicity caused by *Achyranthes aspera*. Vet. Hum. Toxicol., 45(4), 2003, 212-213.
- 94. K. Nishteswar,Life style disease and ayurvedic herbal drugs,Chaukhamba oriantaliya, Varansi 2015 p.p.66.