

A Review on Pharmacological Aspects of *Achyranthes Aspera*

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Review Article

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Abstract

Plant resources constitute an important natural wealth of Country. They play a significant role in providing primary health care service to rural people in addition large number of economic products. In contain secondary metabolites like alkaloids, glycosides, tannins, terpenoid, flavonoid, phenol, volatiles oils and many more compounds with serve as important therapeutic agents. *Achyranthes aspera* L(*Amaranthaceae*) is an important medicinal herb found as a weed throughout India. *Achyranthes aspera* is preinal herb belonging to family *Amaranthaceae*. Wide numbers of phytochemical constituents have been isolated from the plant which possesses activities like antiperiodic, diuretic, purgative, laxative antiasthmatic, hepatoprotective, anti-allergic and various other important medicinal properties. Traditionally, the plant is used in pneumonia, diarrhea, dysentery, asthma, cough, dropsy, ulcers, piles, rheumatism, scabies snake bite and other skin diseases. It contains the phytochemicals like oleanolic acid, Saponin A and saponin B.

Keywords: *Achyranthes Aspera*; Oleanolic Acid; Antifertility; Hypoglycemic Activity; Marketed Preparations

Introduction

Plant resources constitute an important natural wealth of Country. Plants have an extraordinary ability to synthesize aromatic substances which are useful phenols or their oxygen substituted derivatives. In the recent past there has been a tremendous increase in the use of plant-based health products in developing as well as developed countries resulting in an exponential growth of herbal products globally. In fact, secondary metabolites like alkaloids, glycosides, tannins, terpenoid, flavonoid, phenol, volatiles oils and many more compounds with serve as important therapeutic agents [1]. *Achyranthes aspera* is an important medicinal herb found as a weed throughout India. *Achyranthes aspera* is preinal plant belonging to family *Amaranthaceae*. In traditional system of medicines

seeds, roots and shoots are most important parts which are used for their medicinal properties [2].

Wide numbers of phytochemical constituents have been isolated from the plant which possesses activities like antiperiodic, diuretic, purgative, laxative, antiasthmatic, hepatoprotective, anti-allergic properties. Traditionally, the plant is used in pneumonia, diarrhea, dysentery, asthma, cough, dropsy, ulcers, piles, rheumatism, scabies snake bite and other skin diseases [3]. The major chemical constituents are Alkaloids, flavonoids, saponins, carbohydrates, proteins are present. Seeds contain Saponin A and B. Saponin A was identified as D-Glucuronic Acid and saponin B was identified as β -D-galactopyranosyl ester of D Glucuronic Acid [4].

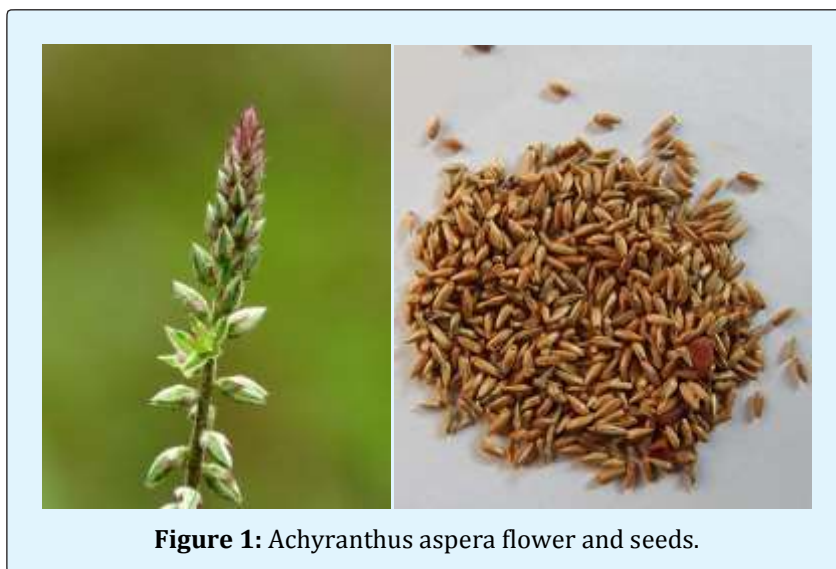


Figure 1: Achyranthus aspera flower and seeds.

Scientific Classification [2]

- Kingdom: Plantae
- Subkingdom: Tracheobionta
- Super Division: Spermatophyta
- Division: Mangoliophyta
- Class : Mangoliopsida
- Subclass: Caryophyllidae
- Order: Caryophyllales
- Family: Amaranthaceae
- Genus: Achyranthes
- Species: Aspera

Vernacular Names [5]

- Latin: Achyranthes aspera
- English: Prickly Chaff flower, Rough chaff tree, Red chaff tree
- Sanskrit: Aghata
- Hindi: Latjira, Chirchira
- Gujarati: Safad Aghedo
- Tamil: Shiru-kadaladi
- Telugu: Uttaraene
- Malayalam: Kadalad
- Punjabi: Kutri
- Unani: Chirchitaa
- Ayurvedic: Apaamaarga, Chirchitaa, Shikhari, Shaikharika

Geographical Distribution

It is found on road sides, field boundaries and waste places as a weed throughout India up to an altitude of 2100 m and in South Andaman Islands [6]. The plant is

also widespread in Baluchistan, Ceylon, Tropical Asia, Africa, Australia and America. It was reported as an invasive alien species in northern Bangladesh [7]. It was found to be the most prevalent herb in Shivbari sacred grove of Himachal Pradesh, India and an exotic medicinal plant of district Lalitpur, Uttar Pradesh, India [8,9].

Botanical Description [10]

Aspera as a Stiff Erect Herb

Height: 0.2-2.0 m high. The base is woody, angular or ribbed, simple or branched, nodes are bulged, often tinged with pink color.

Root: Cylindrical root, 0.1-1.0 cm in thickness, slightly ribbed, gradually tapering, yellowish-brown in color, secondary and tertiary roots present.

Stem: Square, yellowish-brown, branched, hairy, erect, cylindrical, solid, and hollow when dry.

Leaf: Simple, sessile, slightly acuminate stipulate, wavy margin obovate, petiolate or elliptic, ovate or broadly rhombate, opposite, decussate, and pubescent due to the presence of thick coat of long simple hairs. 5-22 cm long with 2-5 cm broad. Occur in various sizes. Type of stomata are present on the lower epidermis is anomocytic.

Flower: Arranged in long spikes form in inflorescences, 8-30 cm long, 3-7 mm wide, bisexual greenish-white, numerous, sessile, bracteate with two bracteoles, one spine lipped, actinomorphic, hypogynous, 5 perianth segments, membranous, 5 stamens, short filament, anther, two celled, 7 gynoecium bicarpellary, syncarpous, ovary superior, single ovule; style, single stigma, white or red flower. Flowers appear during summer.

Fruit: An indehiscent dry utricle enclosed within bracteoles, persistent, and perianth.

Seed: These are round at the base, sub-cylindric, truncate at the apex, endospermic, brown coloured.

Phytochemistry

Achyranthes aspera plant is very rich in phytochemicals. Seeds contain Saponin A and B. Saponin A was identified as D-Glucuronic Acid and saponins B was identified as β -D-galactopyranosyl ester of D Glucuronic Acid⁴. *Achyranthes* seeds contain Oleanolic acid glycosides present in three forms α -L-rhamnopyranosyl-(1-4)-(β -D-glucopyranosyluronicacid)-(1-3)-oleanolicacid, α -L-rhamnopyranosyl-(1-4)-(β -D-glucopyranosyluronicacid)-(1-3)-oleanolicacid-28-O- β -D-glucopyranoside and α -L-rhamnopyranosyl-(1-4)-(β -D-glucopyranosyluronicacid)-(1-3)-oleanolicacid-28-O- β -D-glucopyranosyl-(1-4)- β glucopyranoside [11]. Saponin was identified from the fruits and from stem Pentatriacontane, 6-pentatriacontanone, Hexatriacontane and Tritriacontane were isolated [12]. Ecdysterone isolated from the methanolic extract of roots of *Achyranthes aspera* [13]. Achyranthine a water-soluble alkaloid isolated from *Achyranthes aspera* which possess pharmacological actions like dilation of the blood vessels, lowering of the blood pressure, depression of the heart and increase the rate [14].

Pharmacological Activities

Antimicrobial & Antifungal Activity

Several works have been carried out to evaluate the plant's antimicrobial and antifungal potential. The plant has been reported as a potent antibacterial agent [15]. Antibacterial activity of seeds, ethyl acetate extract of the stem leaf extract ethanol and methanol extracts of the leaf and stem, ethanolic extract of the leaves and stem, aqueous flower extract. Antifungal essential oil has been found [16].

Both antibacterial and antifungal activity of petroleum ether, chloroform and methanol extracts of dried leaves have been reported [17]. The plant was found to have antibacterial property against hospital origin gram positive bacteria. It is used as herbal antimicrobial finish for cotton fabric in healthcare textiles. The plant was evaluated against dental pathogens. Antibacterial activity of the plant could be due to tannins, saponins, flavonoids and alkaloids [18].

The extracts of *Achyranthes aspera* for antibacterial activity against various pathogenic strains such as *Escherichia coli*, *Pseudomonas aeruginosa*, *Citrobacter species*, *Bacillus subtilis* and *Micrococcus species* using disk

diffusion and well plate method. Phytochemical characterization of *Achyranthes aspera* extracts was done by thin layer chromatography (TLC) techniques and other phytochemical analysis. It was found that extracts of *Achyranthes aspera* shows the maximum inhibition of *E. coli* (17 mm) followed by *Pseudomonas species* (14 mm), *Citrobacter species* (12 mm), *Bacillus species* (12 mm) and *Micrococcus species* (12 mm) [19].

Larvicidal Activity

Root extract was found to have pronounced insect molting hormonal activity. Ethanol crude extract showed high larvicidal activity on the tick larvae against *Boophilis microplus*. Larvicidal saponins from leaf extracts have been tested against *Aedes aegypti* and *Culex quinquefasciatus*. Ethyl acetate leaf extract was found to be active against *Aedes subpictus* mosquito larvae. The plant was mentioned to have activity in controlling mosquito larvae. Bioactivity of essential oils of leaf and stem extracted by steam distillation were found to be active larvicidal against *Aedes aegypti* and *Culex quinquefasciatus*. Leaf extracts of the plant have been reported to be active against *Aedes aegypti* [20].

Antifertility Activity

The plant has been reported extensively as an antifertility agent whole plant extracts have shown abortifacient effect in mice with maximal activity was in the benzene extract [21]. The aerial parts of the plant were reported to prevent pregnancy in adult female rats. The extracts of leaves, roots, and seeds of the plant have been used for control of fertility, in placental retention, and in postpartum bleeding. The benzene extract of the stem bark shows abortifacient activity in the rat. The ethanol extract of the root was found to be reproductively toxic and had spermicidal action *in vitro* and *in vivo* studies [22].

The ethanolic extract of the root of *Achyranthes aspera* shows post coital anti-fertility activity in female albino rats. The said extract exhibited 83.3% anti-implantation activity when given orally at 200 mg/kg body weight [23].

Anti- Cancerous Activity

The plant has been reported to have cancer activity and antitumor property [24]. Non-alkaloid fractions of the plant were found to be valuable antitumor promoters. Leaves extracted in methanol were found to have inhibitory activity against human pancreatic cancer cells indicating its anti-proliferative and anti-cancer properties [25]. Swiss albino mice induced by intraperitoneal injection of mineral oil was used to screen anti-cancerous efficacy of *A. aspera* [26]. In vitro assay the non-alkaloid fraction containing only non-polar compounds showed the

most significant inhibitory activity but *in vivo* stage mouse skin carcinogenesis tests the total methanolic extract possessed a pronounced anticarcinogenic effect.

Immunostimulant Property

Immunomodulatory activity of the plant on elicitation of antigen-specific murine antibody response has been reported [27]. Same activity of the roots and potentiating antibody production in the fish, *Labeo rohita*. Enhanced anti proteases in *Labeo rohita* was found when aqueous root extract of *A. aspera* was incorporated. The seed of the plant was reported to enhance immunity of *Cyprinus carpio*. The plant has been an Immunostimulant and enhancer of the antigen clearance in *Catla*. Immunostimulatory compounds in seed were found to increase immunity and survival of *Labeo rohita* infected with *Aeromonas hydrophilia* [28]. The hydroalcoholic extract of *A. aspera* was reported to stimulate cell mediated immune system by increasing phagocytic function [29].

Achyranthes has significantly ($P < 0.05$) enhanced the BSA specific antibody titers than the untreated control group throughout the study period. The efficiency of antigen clearance was also enhanced studied [30].

The Superoxide anion production, serum bactericidal activity, lysozyme, ALP, serum protein. Albumin, globulin ratio was enhanced in *Achyranthes* treated groups. Higher cumulative mortalities were observed in the control group this gradually decreased with increasing dose of *Achyranthes* indicating that *Achyranthes aspera* stimulates immunity and increases resistance to infection in *Labeo rohita* [28].

Hypoglycaemic Activity

Powdered whole plant and certain aqueous and methanolic extracts, when orally administered showed hypoglycemic in normal and alloxan-diabetic rabbits. The plant could act by providing some necessary elements like calcium, zinc, magnesium, manganese and copper to the beta-cells Redox and oxidative status in plasma and other tissues of rats fed with high doses of fructose were studied after applying seeds of the plant [31].

Diabetes mellitus was induced in a batch of normoglycemic albino rats, starved for 12h. 150 mg/kg body weight of alloxan monohydrate was dissolved in physiological saline and injected intra-peritoneal (IP). This dose of alloxan produced persistent hyperglycemia after four days as revealed by the determination of glucose levels by the analysis of blood and urine sample [32]. Aqueous extract of *A. aspera* (500 mg/kg) showed the

significant reduction in blood glucose and HbA1C level as compare to control group.

Six adult Wistar rats weighting 250-300 grams (75-90 days old) were used for inducing diabetes. The animals were injected by streptozotocin at the dose of 60 mg/kg of the bodyweight intravenously. Streptozotocin induces diabetes within 3 days by destroying the β cell [33]. Ethanolic extract of *A. aspera* (600mg/kg) showed significant reduction of blood glucose level.

Hypolipidemic Activity

The alcoholic extract of *A. aspera* was found to lower 100 mg/kg serum cholesterol (TC), phospholipid (PL), triglyceride (TG) and total lipids (TL) in triton induced hyperlipidemic rats. In sesame oil feed rats, hypolipidemic efficacy of the plant was tested. The plant's activity on sesame oil induced lipid peroxidation has been reported [34].

The chronic administration of this drug at the same doses to normal rats for 30 days, lowered serum TC, PL, TG and TL by 56, 62, 68 and 67% respectively followed by significant reduction in the levels of hepatic lipids. The faecal excretion of cholic acid and deoxycholic acid increased by 24 and 40% respectively under the action of this drug. The possible mechanism of action of cholesterol lowering activity of *A. aspera* may be due to rapid excretion of bile acids causing low absorption of cholesterol [35].

Analgesic and Antipyretic Activity

The methanol extract of leaves for analgesic and antipyretic activities by using hot plate and brewer's yeast induced methods using aspirin as a standard drug studied [36]. The leaves and seeds of *Achyranthes aspera* which shows analgesic activity studied [37]. Both leaves and seeds show analgesic activity in mice using acetic acid induced writhing response and hot plate method. The hydro alcoholic extract of the roots and leaves of *Achyranthes aspera* shows centrally acting analgesic activity in adult male albino rats using tail flick, hot plate and acetic acid induced writhing method for peripherally acting analgesic activity using aspirin as standard drug [38].

The doses administered were 200 mg/kg and 400 mg/kg. The animal that administered a dose of 400 mg/kg leaf extract has shown the maximum analgesic activity reported that achyranthine water -soluble alkaloid had a slight antipyretic activity in rats [14].

Anti-Inflammatory Activity

Anti-inflammatory activity of *A. aspera* has been reported [39]. Alcoholic plant extract was found to be the most active in most of the Wistar rats using carrageenan-induced paw edema method and cotton pellet granuloma test reported [40]. The alcoholic extracts of leaves and seeds show anti-inflammatory activity in rats using-induced paw edema method and formalin model [41].

The alcohol extract of *Achyranthes aspera* was tested on carrageenin-induced hind paw oedema and cotton pellet granuloma models in albino male rats. The paw volume was measured plethysmometrically at 0, 1, 2, 3, 4 and 5 h and diclofenac sodium was used as a standard drug. The alcohol extract (375 and 500 mg/kg) showed the maximum inhibition of oedema of 65.38% and 72.37% respectively, at the end of 3h with carrageenan-induced rat paw oedema. Using a chronic test, the extract exhibited a 40.03% and 45.32% reduction in granuloma weight [42].

Antioxidant Activity

The plant has shown antioxidant activity in different investigations [43]. Antioxidant potential of the methanol extract of the leaves and roots of the plant was evaluated by using *in vitro* 1, 1-diphenyl-2-picrylhydrazyl (DPPH) scavenging assay [44].

Both extracts were assessed using two methods, DPPH radical scavenging activity, and superoxide scavenging activity. The plant exhibited good antioxidant effect by preventing the formation of free radicals in the two models studied.

The DPPH radical scavenging activity was performed according to the method of with few modifications [45]. The plant extracts were diluted in distilled water to make 10, 20, 40, 60,80 and 100µg/ml dilutions. Two milliliters of each dilution were mixed with 1ml of DPPH solution (0.2Mm/ml in menthol) and mixed thoroughly. The mixture was incubated in dark at 20°C for 40min. Absorbance was measured at 517nm using UV-Vis.spectrophotometer with menthol as blank. Gallic acid was used as positive control. The percentage scavenging of DPPH by the extracts was calculated according to the following formula:

$$\% \text{ DPPH Radical scavenging} = [(Ac-At) \div Ac] \times 100$$

Here

Ac is the absorbance of the control (DPPH)

At is the absorbance of test sample.

Phytochemical screening of the *A. aspera* presence of major phytochemicals in the methanol extract;

carbohydrates, phenolic compounds, oil and fats, saponins, flavonoids, alkaloids and tannins, whereas, aqueous extract contained phenolic compounds, saponins, flavonoids and tannins as major phytochemicals. The presence of polysaccharides, ecdysterone, achyranthine, betaine (Alkaloids), vanillic acid, syringic acid, *p* coumaric acid (phenolic acids), saponin A, saponin B (saponins), protein and carbohydrates in *A. aspera*. Presence of phenolic compounds in the plant suggests the potential use of *A. aspera* as a source of antioxidant compounds [46].

Wound Healing Activity

The plant has shown wound healing activity [47]. There has been a report on comparative protein profile of granulation tissues of burn, diabetic and immunocompromised wounds treated with 5.0% (w/w) ointment of methanol extract of the plant. Ethanol and aqueous extracts of leaves of *Achyranthes aspera* for wound healing activity. The wound healing activity was studied using two wound models, excision wound model and incision wound model [48].

Cardiac Activity

Cardiac stimulant activity of the saponin of *A. aspera* seed has been observed when it was found to cause increase in force of contraction of isolated and intact hypodynamic heart [49]. Leaf decoction was reported for cardiovascular toxicity. Achyranthine, the water-soluble alkaloid showed lowering of blood pressure, depression of heart and increase in rate and amplitude of respiration in anaesthetized dogs. Effect of saponin of *A. aspera* on phosphorylase activity of rat heart. In tropical West Africa, the plant was found to have activation cardiovascular system [50].

Achyranthine, a water-soluble alkaloid isolated from *Achyranthes aspera*, decreased blood pressure and heart rate, dilated blood vessels, and increased the rate and amplitude of respiration in dogs and frogs. The contractile effect of the alkaloid at (0.5 mg/ml) on frog rectus abdominal muscle was less than that of acetylcholine (0.1 mg/ml), and its spasmogenic effect was not blocked by tubocurarine reported [14].

Renal Disorders

Mineralization of urinary stone (calculi) like calcium oxalate, calcium carbonate and calcium phosphate were found to be inhibited by *A. aspera*. Methanolic extracts were found to prevent lead induced nephrotoxicity in albumin rats [51]. Efficacy of the roots of the plant was tested on calcium oxalate crystal nucleation and growth *in vitro* and on oxalate induced injury in NRK-52E (rat renal tubular epithelial) cells. As approach to anti-lithiasis,

inhibitory effect of hydroalcoholic extract of the plant on crystallization of calcium oxalate in synthetic urine was studied [52].

Diuretic Activity

A saponin isolated from the seeds of *Achyranthes aspera* which shows significant diuretic effect in adult male albino rats. The optimum oral dose of saponin was 10mg/kg in rat increase in urine output which was comparable to 10mg/kg oral dose of acetazolamide [53].

Anti-Helminthic Activity

The ant-helminthic activity was evaluated on adult Indian earthworms. For preliminary evaluation of anthelmintic activity test samples of the aqueous extract of stem was prepared at the concentration of 2.5, 5, 10, 20 mg/ml in Tween 20 (1%) solution diluted with normal saline and 6 worms *Pheretima posthuma* of 8-10cm were placed in petri dish containing 30 ml of above test solutions of extracts. Albendazole (2.5, 5, 10, 20 mg/ml) was used as reference standard and normal saline with Tween 20 (1%) is used as negative control. All the test solutions and standard solutions were prepared freshly before starting the experiment.

Observations are made for the time taken for paralysis when movement was lost or no movement. Worms should not relieve even in normal saline. Time for death of worms were recorded after ascertaining that worms neither moved when shaken vigorously nor when dipped in warm water and fading of color of worms [53].

Spermicidal Activity

Extracts from the roots of *Achyranthes aspera* and reported spermicidal activity in human and rat sperm. The hydroethanolic, n-hexane and chloroform extracts were found to be most effective for sperm immobilization, sperm viability, acrosome status, 5'-nucleotidase activity and nuclear chromatin decondensation Studied [54].

The ethanolic extract of the root of *Achyranthes aspera* shows post coital anti-fertility activity in female albino rats. The ethanolic extract exhibited 83.3% anti-implantation activity when given orally at 200 mg/kg body weight. The methanolic extract of the leaves and reported for antifertility activities such as abortifacient, estrogenicity, pituitary weight, and ovarian hormone level and lipids profile in female rats. The abortifacient effect of the methanolic extract of the leaves of *Achyranthes aspera* was determined by counting the dead fetuses in vivo. Effect on estrogen was assessed by taking the ratio of the uterine weight to body weight. The ratio of the pituitary weight to body weight was also calculated. The effect of the extract on the level of ovarian hormones and lipid profile were evaluated using electrochemi-luminescence immunoassay [55].

The benzene extract of the whole plant shows abortifacient activity in mice. The 50% ethanolic extract of the root of *Achyranthes aspera* shows effect on sperm motility and function in a ratio of 1:3 by weight at different concentrations. The n-butanol fraction of aerial parts also shows contraceptive and hormonal properties [56].

Anti-Dandruff Activity

The methanolic leaf extract of *A. aspera* as a constituent of a polyherbal hair oil (PHO) showed anti-dandruff activity. The crude extracts of *Achyranthes aspera* contain coumarin which is responsible for the inhibition of the growth of *Pityrosporum ovale* and reduces the dandruff scales in clinical trials [57].

Anti-Depressant Activity

The methanolic extract of *A. aspera* (200, 400 & 600 mg/kg) was administered to the rats and immobility time was determined. The methanolic extract (600 mg/kg) of *Achyranthes aspera* when administered orally was effective in reducing the immobility time revealing its significant antidepressant-like effects.

| Sr.no. | Product Name | Composition | Uses | References |
|--------|-----------------|---|---|---|
| 1 | Apamarga Powder | Apamarga -3g | Promotes Healthy Urination Supports Healthy Digestion & Appetite Promotes Healthy Urination | https://bixabotanical.com/achyranthes-powder.html |
| 2 | Apamarga Churna | Apamarga powder (250g) | Relieve dysuria, ascites, liver and spleen disorders, ear diseases and leukoderma, cold, cough other respiratory diseases treatment of abscess and fistula | https://m.indiamart.com . |
| 3 | Apamarga Powder | Apamarga\ Latjira\ Chirchita herbal powder(200g) | No side effects are known of apamarga powder's regular | https://www.amazon.in/Apamarga- |

| | | | | |
|----|------------------------|---|---|---|
| | | | use.Natural and effective herbal product. No harmful preservatives added hence no side effects | Latjira-Chirchita-Herbal-Powder/dp/B07D5D BCRF |
| 4 | Neeri | Pashanbhed, Punernava, Palash, Varun, Sahdevi, Apamarga, Gorkhru, Shilajeet, Mooli, Kultha. | Normalize the urine Ph.Relieves pain & inflammation by inhibiting release of their mediators, soothes irritated bladder | http://www.aimilpharmaceuticals.com/product/neeri/ |
| 5 | Fifatrol | Guduchi, Daruharidra, Apamarga, Chirayata, Karanja, Kutaki, Tulsi, Motha, Godanti | Body ache & Headache, Rhinitis, Running nose, PUO (pyrexia of unknown origin), Chronic fever, Viral fever, Typhoid fever, Malaria, Dengue, Upper respiratory tract infections, Cold. | https://www.aimilpharmaceuticals.com/product/fifatrol/ |
| 6 | Jufex Forte | Amla, Draksh, Tulsi, Vasa, Apamarg, Haritaki, Baheda, Sheetal Chini, Pippali, Sunthi, Alsi, Dalchini, Tejpatra, Guduchi, kalimirch, kalaunji, kaddi patta, saunf, Amlatas, Naushadar. | Respiratory tract infections of viral origin, Recurrent sore throat, Smoker's cough, Allergic cough, Cough associated with chronic bronchitis, pharyngitis, laryngitis, Childhood bronchitis. | https://www.aimilpharmaceuticals.com/product/jufex-forte/ |
| 7 | Mutrakrichantak Churna | Varun, Punarnava, Gokshur, Kaasni, Bhumi Amla, Shirish, Shigru, Apamarg | Used For treatment of heart diseases, Urticaria, haemmroids, prostate enlargement. | https://www.planetaryurveda.com/library/apamarg-achyranthes-aspera |
| 8 | Reeni | Pashanbheda, Punarnava, Apamarg, Gokhru, Varun, Makoya, Yavkshar, Shilajit | Litholytic and Lithotriptic | https://store.planetaryurveda.com/products/reeni-syrup-200ml |
| 9 | Livol | Rohish, Apamarg, Saunfmool, Kasnimool, Mulethi, Punarnava, Karfasmool, Sanaya, Amlika, Draksha, Anjir | Corrects digestion by promoting normal secretions of liver, Loss of appetite, Hepatitis, Cirrhosis of liver | https://store.planetaryurveda.com/products/livol-syrup-200ml?variant=20105253781568 |
| 10 | Apamarga | Apamarga -500mg | Benefits in skin diseases. Good source of potassium Works well in heart problems It alleviates nausea and vomiting Useful in digestive system disorders | https://www.indiamart.com/proddetail/apamarga-capsules-14791351491.html |
| 11 | Stonhills | Pashanbhed, Punarnava, Palash Pushpa, Shwet Parpati, Varun Ghana, Sahadev, Apamarg, Gokshur | Shows Diuretic and antibacterial property | https://www.herbalhills.in/ayurvedic/products/herbal-ayurvedic-formulation/kidney-care/#prettyPhoto |

Table 1: Marketed Preparations of *Achyranthes aspera*.

Conclusion

Herbal plants are the natural drugs used to regain the alterations made in normal physiological system by foreign organisms or by any malfunctioning of the body. *Achyranthes aspera* L. is very important folk herbal medicinal plant as it is widely used by the ethnic communities for the remedy of numbers of diseases. The whole plant and its parts has been widely studied for its pharmacological activities and finds its position as a versatile plant having a wide spectrum of medicinal activities. The plant possesses many therapeutic and pharmacological activities, such as spermicidal, anti-allergic, cardiovascular, nephroprotective, abortifacient, cancer antiparasitic, hypoglycemic, analgesic, antipyretic. It is used in treatment of many diseases like, boils, bronchitis, cold, cough, boils, colic, debility, dropsy, dysentery, ear complications, and headache. The pharmacological experiments performed on the plant must be extended to the next level of clinical trial to generate novel drugs. This might prove helpful to use its immense therapeutic efficacy as a potent phytomedicine.

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