



## PHARMACOLOGICAL REVIEW OF *AKASHVEL* (*CUSCUTA REFLEXA ROXB.*)

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### ABSTRACT

*Cuscuta reflexa Roxb.* is also known as 'Akashvel' in traditional system of medicine. It is parasitic plant. The tendrils and seeds are used as medicine in various disorders. This article describes various phytochemical constituents isolated from plant and its activity shown. The plant is depurative, purgative and is used in retention of gases. While externally it used against itches and skin diseases. For last few decades research work has to be done to prove its biological activities. The current review deals with the information described in ancient Ayurvedic text and scientific research conduct on different parts.

**Keywords:** *Akashvel*, *Cuscuta reflexa* Roxb, Phytochemical constituent, Medicinal activity.

### INTRODUCTION

#### Description of plant

'Akashvel' is perennial parasitic herb. Its belongs to *Convolvulaceae* family. Stem stout twining long 1-3 mm thick, leafless, slender, yellow, glabrous sometimes with red spot, pungent, slightly bitter. The twining stem develops haustoria which are root like and penetrate the host stem to draw water and nourishment. The flowers are small and white having a perfect bell shape & a fleshy calyx, attach directly to the stem nodes. It has very low level of chlorophyll. From mid-summer to early autumn the vines can produce small fruits that take the same color as the vine and approximately the size of common pea. The seeds are minute and produced in large quantities. They have hard coatings and can survive in the soil for 5-10 yrs [1]. *Cuscuta reflexa Roxb.* is medicinal plant it's been used since the time of Bhavprakash [2] (16th cent. Literature author based on Indian medicinal plant). It is known to be digestant, shows antihelminthic activity. It is also used in abdominal discomfort, fever, diuretics, galactagogue and as a tonic in generalize weakness.

Botanical Name – *Cuscuta reflexa Roxb.* [3]

Family – *Convolvulaceae*.

Sanskrit Name – Akashvalli, Amarvalli.

#### Classical Characterization [2]

Bhavprakash – Guduchyadi Varga  
Rasa – Madhura, Tikta, Kashaya  
Veepak – Katu  
Virya – Sheeta  
Guna – Laghu, Ruksha, Picchil  
Effect on Dosha – Balances kapha and pitta

#### Raw drug standardization [3]

| S. No | Parameters                 | Quantitative value |
|-------|----------------------------|--------------------|
| 1.    | Moisture content           | > 17.12% w/w       |
| 2.    | Total ash                  | >5.2% w/w          |
| 3.    | Acid insoluble ash         | >0.2% w/w          |
| 4.    | Water soluble ash          | >3.75% w/w         |
| 5.    | Alcohol soluble extractive | < 0.5% w/w         |
| 6.    | Water soluble extractive   | <18.5% w/w         |

Sansthanik Karma [4]

Yakrit doshaghna - It cures liver disorder.

Shothaghna - Shows anti-inflammatory activity.

Balya - Health tonic

Rasayana - Health tonic.  
Vrushya - Aphrodisiac.  
Shulaghna - Relives Pain.  
Ayurvedic Preparation [4]

*Akashvel* has been describe as single drug preparation in various Ayurvedic text. A few preparations are discussed here

### 1. Akashvalli swarasa

It indicated in treatment of Indigestion, loss of appetite, spruratic condition.

### 2. Akashvalli decoction

In Gastric trouble, Irritable bowel syndrome, constipation or hepatic disorder it is useful to have in decoction form.

### 3. Amarvallyadi Panak –

*Amarvel* seed – 15 gm. *Neelkamal* petals – 10gm. *Gojivha* leaf – 1 gm, *Kasni* beej – 1gm. *Rose* petals – 20 gm. Root of *Kasni* – 40gm. water, 420 ml.

By mixing all herb prepare Decoction add sugar and prepare syrup of *Amarvel*. It is a good cardiac tonic, useful in fever. Jaundice, Liver disease burning sensation advised dosage in 10-20 ml.

### Chemical Constituents

Plant contains Flavanoids, glycosides, alkaloids, cuscutin, cuscotalin and amarvel [5]. cuscutin, a marbelin,  $\beta$ -sitosterol, Stigmasterol, Kaempferol, dulcitol, myricetin, quercetin.[6] plant indicates the presence of kaempferol-3-0-glucoside. astragallin[7] myrecetin, benzopyrones[8] gluco pyranosides[9] propanamide, flavanols, quercetin quercetin-3-0-glucoside.  $\beta$ - sitostorol, bergenin[10], Coumarine,  $\alpha$ -amyrine,  $\alpha$ -amyrine  $\beta$ -amyrine acetate, oleanolic acetate, oleanolic acid [11], stigma sterol and lepeol and reported. lupeol is a pharmacologically active tri-terpenoid has been extracted. it has complex pharmacology in human possess anti-protozoal, Antimicrobial, Anti-inflammatory chemo preventive properties[12]. A new compound reflexin [5- hyroxy – 7 methoxy – 6 (2,3 epoxy-3 methyl butyl)- Flavanone] is isolated [12]. Isorhamnetin 3-0-Neohes pheridoside – violaxanthin, lutein. lycopene, carotene,  $\alpha$  - cryptoxanthin are reported [13]. swarnalin and cis-swarnalin are two tetrahydrofuran derivatives with free radical scavenging activity from the aerial parts of *cuscuta reflexa* has been reported.[14]

### Pharamcological activity

#### Antipyretic actively -

The antipyretic activity of aqueous and ethanol extract from *Cuscuta reflexa Roxb.* was evaluated. using brewer's yeast induce pyrexia in rats both the extract. it significantly reduced the increased rectal temperature. The

extract started reducing the elevated rectal temperature after 3 hours of treatment in dose related manner. it was concluded that the extract of *Cuscuta reflexa* demonstrated antipyretic activity. The ethanol extract was found to be slightly potent than the aqueous extract.[17]

#### Hepatoprotective activity -

Extract of *Cuscuta reflexa Roxb.* was most active in inhibiting in vitro cell proliferation due to their hepato protective activity. GCS analysis identify pyrogallol as the common compound present both in unfractioned and n-butanol fraction of plant extract. Anti proliferative effect of pyrogallol were determined on human tumor cell line thus identifying pyrogallol as an active component of *Cuscuta reflexa* extract.[18]

#### Anticonvulsant activity –

The methanolic extract of *Cuscuta reflexa Roxb.* stem showed marked protection against convulsion induced by chemo convulsive agent in mice. The catecholamine contained were significantly increased in the processed extracted treated mice. The amount of GABA which is most likely to be involved in seizure activity was increased significantly in mice brain after 6 wks of treatment. The presence of steroids in the PECD might be responsible for psychopharmacological activities showed a significant anticonvulsive property by altering the level of catecholamine's and brain amino acids in mice.[19]

#### Anti inflammatory activity –

Anti inflammatory activity of *Cuscuta reflexa Roxb.* water extract was analyzed in – vitro using lip polysaccharide (LPS) induced inflammatory reactions in cox-2 and TNF-  $\alpha$ - gene involved in inflammation was analysed by SQ RT – PCR. The study shows that *Cuscuta reflexa Roxb.* inhibits LPS induced inflammatory responses in RAW 264.7 cells through interplay of TNF- $\alpha$ , Cox-2 and NF- $\kappa$   $\beta$  signalling [20]

#### Hair growth promoting activity

The study conducted on androgen induced alopecia *Cuscuta reflexa Roxb.* and its other species are traditionally acclaimed herbs for their hair growth promoting potential in the study. it was envisage to prepare herbal formulation contains petroleum ether extract of the three herb in varying ratio and evaluating the formulation for the hair growth promoting activity. Hair growth initiation time was markedly reduce to one third on treatment with prepared formulation the time required for complete hair growth was also reduce by 32% qualitative analysis of hair growth cycle after treatment with formulation and minoxidil (2%) exhibited greater number of hair follicle in anagenic phase compared with growth promoting capabilities of the plant. The prepared formulation also holds potential for treatment of alopecia [21].

### Dosage

Whole plant juice – 10 -20 ml.

Decoction 20- 40 ml.

Whole plant powder 3-6 gm.

Its traditionally used in many diseases still it making new claims or new reports on various disorders but they don't have sufficient clinical evidences of effectiveness. It's a wonderful plant having various medicinal activity.

### CONCLUSION

This review present literary review on pharmacognostical, phytochemical, traditional and medicinal use of *Cuscuta reflexa* Roxb.

Therefore, isolation and characterization of the active principles and thus further clinical trials can prove beneficial in drug development from the plant through rational approached has wide scope in future.

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