

***Kakanasa (Martynia diandra, Glox.) – An Ayurvedic Review***Netra Jere\* <sup>1</sup>, Amit Avalaskar <sup>2</sup>

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\* Corresponding Author: E- mail : [drnetrajere7@gmail.com](mailto:drnetrajere7@gmail.com); Phone:+91 9975855524**Abstract –**

Ayurveda is the most ancient health care System. The textual legacy started with *Bruhat Samhita* was completed in 4<sup>th</sup> century. After that, texts were written in the form of *Nighantus* which explained the *dravyas*, base of any treatment, in detail. Ancient *Acharyas* never limited the number of *Dravyas* as *Acharya Charaka* says- ‘Nothing in this world is devoid of medicinal properties’. More than 3000 plants had discussed in the Ayurveda in Sanskrit texts. Out of them some plants are widely used by clinicians today in their day to day practice. Eg. *Gokshur* (*Tribulus terrestris*) in urinary tract diseases. *Amalaki* (*Phyllanthus emblica*) in Acidity. *Mushali* (*Chlorophytum borivilianum*) in Azoospermia *Shunthi* (*Zingiber officinale*) in Digestive problems etc. On the other hand there are still some plants which are not yet more focused; but used by very few people in some conditions. *Kakanasa* (*Martynia diandra, Glox.*) is one of them. It is an annual herb, can be seen throughout the country, generally occupying rubbish heaps and waste places.

**Keywords:** Ayurveda, *Kakanasa*, *Martynia diandra, Glox.*, Epilepsy, Diuresis, Immune booster, Increase body weight

**Introduction:**

The word *Kakanasa* means ‘a beak of crow’ This is the best identification mark of plant *Kakanasa* given in *Bhavaprakasha Nighantu*.

In Ayurvedic texts *Kakanasa* described as *Madhura Rasa* (Sweet in taste), *Madhura Vipaka* (Taste conversion after digestion) and *Sheeta Veerya* (Cold in potency). It is used in many clinical conditions like *Shotha* (Inflammation), *Raktaja Vyadhi* (Blood diseases), *Shwitra* (Vitiligo), *Kushtha* (Skin diseases) and as *Vamaka* (induce vomiting) Drug.

*Kakanasa* also called as *Vichudo* in Gujarat. *Martynia diandra, Glox.* i.e. *Kakanasa* used for *Mootral karma* (Diuresis) in Gujarat, India. It is described under *Kakanasa* (beak of crow) in Ayurvedic Pharmacopia. The fruit is not exactly like a beak and should not be considered as *Kakanasa* – Vd. Chuneekar Shastri, Bapalal Vaidya. The plant fruit is available in market and sold under the name –*Kakanasa. Rasa* (Taste), *Vipak*

(Taste conversion after digestion) and *Veerya* (Potency) are identical with *Gokshur*. It is considered as exotic but found throughout the country since ancient days.

The *Kakanasa* is also used in Scorpion bite as local application of its Lepa (Local Application of Drug). Its leaves used in *Apasmara* (Epileptic conditions). Oil extracted from its fruit is used in *Pama* (Scabies) and other various skin diseases. Nephro-protective action is the most important property of drug *Kakanasa*. In the Decreased body weight (Cachexic patient) condition along with renal tissue damaged drug *Kakanasa* would be the drug of choice. The Drug causes diuresis by increasing the production of urine, causing easy flow of urine and stimulating the organs of the urinary system.

### Taxonomical Classification of *Kakanasa*

Kingdom – Plantae

Division – Magnoliophyta

Class – Angiosperms

Order – Lamiales

Family – Martyniaceae

Genus – *Martynia*

Species – *Martynia annua* / *Martynia diandra* ( Synonyms as per Ayurvedic Pharmacopoeia )



***Kakanasa***



**Flowers of  
*Kakanasa***



**Fruits of  
*Kakanasa***



**Fruits of *Kakanasa***



## Aim and Objectives:

### Aim:

To study ayurvedic approach of drug *Kakanasa* (*Martynia diandra*, *Glox.*) according to *Bruhatrayee* and *Laghutrayee* and its various aspects of treatment.

### Objectives:

1. To study ayurvedic review of the drug *Kakanasa* (*Martynia diandra*, *Glox.*)
2. To study modern medicinal review of the drug *Kakanasa* (*Martynia diandra*, *Glox.*)
3. To study various ayurvedic aspects of treatment of the drug *Kakanasa* (*Martynia diandra*, *Glox.*)
4. To study various modern medicinal aspects of the drug *Kakanasa* (*Martynia diandra*, *Glox.*)

## Materials and Methodos -

### Materials:

Literature Review – All the ayurvedic literature like *Bruhatrayee*, *Laghutrayee* and text books related to ayurvedic plants and its uses are taken for the study.

All the pharmacology and modern medicinal books with used of medicinal plants are taken for the study.

### Methods:

All the references are compiled from Ayurveda and from modern medicines and the conditions in which the drug *Kakanasa* can be given are drawn.

## Botanical Description of *Kakanasa*

**Stem** – Branched, branches hollow, covered with long-soft-sticky tomentum (covering of downy hair)

**Leaves** – Large, Opposite, Broadly Ovate to deltoid, lobed, dentate, both the surfaces covered with Viscid glandular hairs, excreting Glutinous, dew like liquid

**Flowers** – Complete, Regular, Zygomorphic (symmetrical in one plane only, usually along, anterior-posterior line, petals are unequal in size and shape), Hypogynous, Bracteates, with 2 pink-purple orbicular Bracts (a leaf, subtending a flower), Flowers attractive and Showy (having a striking appearance)

**Inflorescence** – Short, Axillary racemes (an elongated, indeterminate inflorescence with pedicelled flowers), from the forks of the branches

**Calyx** – Sepals 5, United forming a Short tube that opens out into 5 Pinkish purple lobes

**Corolla** – Petals 5, United, Campanulate (bell shaped), like that of Foxglove (a tall Eurasian plant with erect spikes of pinkish-purple flowers shaped like fingers or gloves) flowers, lobes 5, unequal, anterior orbicular, Oblong, lateral semi orbicular, smaller, Posterior upper lip reflexed, 2 lobbed, Anterior lip within Yellow speckled, with deep purple blotch

**Androecium** – Stamens 5, Epipetalous (stamens attached to the petals), Included; two functional with long filaments and confluent another cells, two short staminode (stamen without anther or pollen grains), fifth one highly rudimentary

**Gynaecium** – Carpels 2, Ovary superior, Syncarpous (with united carpels), Unilocular (one chambered) with two parietal placentae each with two ovules, style long, stigma 2 lipped.

**Fruit** – Soft, Outer pericarp glandular viscid, falling off and exposing inner hard, woody crustaceous, sculptured endocarp with eight ridges and two sharp curved



apical spines along the central channel between the spines.

(The apical spines represent persistent style that splits at maturity).

**Seeds** – Oblong, two, compressed. (In *Martynia* the somewhat warty seed coat consists of only outer epidermis, whose radial and inner tangential wall becomes lignified, and the cuticle of the inner epidermis, all the layers becomes crushed during maturation. The reserve material of seed contains Aleurone grains and Oil.)

**Parts used** – Fruits, Leaves

**Dose** – *Martynia diandra*, *Glox.* Fruit powder – 2 to 5 gms

**Macroscopic and Microscopic characteristics of Kakanasa**


#### a) Macroscopic

Oblong, hard, woody, 2-5 cm long and 1.5-1.7 cm wide; surface wrinkled, light brown to black, two sharp recurved (bend backward) hooks present at anterior end, four prominent grooves present each on convex and concave side and on lateral sides, 2-4 hairy spines present inside groove on concave side, no taste and odour.

#### b) Microscopic


Powder – Black and rough, shows groups of thick walled cells, numerous fibres, unicellular hairs and oil globules.

**References of Kakanasa in Bhrutrayee – Table no.1: References in Charaka Samhita**

References	Market preparation / Indications
<i>Cha.Vi.8/151</i>	<i>ShiroVirechana</i> Drugs (By nasal route)
<i>Cha.Chi.1/pa. 1/ 62</i>	<b><i>Chyavanaprasha Rasayana</i></b> =  <i>Rasayana</i> (Immune booster), <i>Shwasa</i> (Asthma), <i>Kasa</i> (Bronchitis), <i>DhatuVardhana</i> (Body Growth), <i>SwaraKshaya</i> (Feeble Voice), <i>UroRoga</i> (Diseases of Chest), <i>Hridroga</i> (Heart Diseases), <i>Vatarakta</i> (Gouty arthritis), <i>Pipasa</i> (Thirst), <i>MootraDosha</i> (Urine related diseases), <i>ShukraDosha</i> (Diseases related to sperm)
<i>Cha.Chi.7/123</i>	<i>Kushtha</i> (Skin diseases) – <i>Mandala Kushtha Nashaka</i> (Reduces Tinea like skin infections)
<i>Cha.Chi.10/37</i>	<i>Apasmara</i> (Epilepsy) – <i>Dhoopanartha</i> (Fumigation)
<i>Cha.Chi.10/45</i>	<i>Apasmara</i> (Epilepsy) – <i>Pradhaman Nasya</i> (Drug powder through nasal route)
<i>Cha.Chi.16/120</i>	<b><i>Vyoshyadi Ghrita</i></b> = <i>Mrudbhakshana</i> (Pica) <i>janya</i> (Born from) <i>Pandu</i> (Anaemia)
<i>Cha.Chi.18/40</i>	Specially Bronchitis, Fever, <i>Gulma</i> , Tastelessness, Spleen diseases, Headache, Angina, Backache, Hepatitis, Piles, Urinary stone, <i>Kshataj Kasa</i> (Old age Cough), <i>Shosha</i> (Inflammation), <i>Kshaya</i> (Atrophy)

<i>Cha.Chi.30/51</i>	<b>Baladi Yamaka Sneha</b> = Gouty arthritis
<i>Cha.Chi.30/53</i>	<b>Kashmaryadi Ghrita</b> = Vaginal diseases, wishing for pregnancy
<i>Cha.Si.4/5</i>	<b>Dashamooladi tailam</b> = Oil enema
<i>Cha.Si.4/9</i>	<b>Jivantyadi yamaka sneha</b> = Oil enema Weight gain, to increase weight- sperms-digestion, used in urine-sperms-menstrual abnormalities
<i>Cha.Si.10/37</i>	<b>Kshir Basti</b> = in complications of <i>Virechana</i> (Pitta detoxification) <i>atiyoga</i> (Excess)

**Table no.2: References in Sushruta Samhita**

References	Market preparation / Indications
<i>Su.Chi.18/13</i>	<i>Kaphaja Granthi – Lepa</i> (Local application)
<i>Su.Chi.19/63</i>	Eliphantitis, <i>Apachi</i> (Cervical Lymphadenitis), <i>Galaganda</i> (Thyroid problems), <i>Grahani</i> (Over all digestion), Indigestion, Poison – <i>Paneeya Kshar</i> (Local irritant) In Wound healing –  local oil massage
<i>Su.Chi.37/20</i>	<b>Bhootikadi tailam</b> = in Oil enema
<i>Su.Chi.37/23</i>	Oil enema – Sperms-Immunity-Digestion increases, Weight gain, <i>Gulma</i> By Nasal / Oral route – Diseases of head and neck
<i>Su.U.51/23</i>	<b>Suvahadi Ghritam</b>

**Table no.3: References in Ashtang Hridaya**

References	Market preparation / Indications
<i>A.Hri.U.34/42</i>	Vaginal / Cervical diseases, in women willing for pregnancy
<i>A.Hri.U. 39/34</i>	<b>Chyavanaprashavaleha Rasayana</b> =Increases immunity

#### Discussion:

*Kakanasa* can be used as ‘single drug treatment’ or with combinations with other drugs. It can be given in juice or decoction or cream / ointment form.

The Drug possesses following phytochemicals responsible for its activity.

#### Chemical Composition of *Kakanasa*:

- **Whole plant** – Glycosides, tannins, carbohydrates, phenols, flavonoids, anthocyanins
- **Fruits** – Gentisic acid
- **Flowers** – Cyaniding-3-Galactosides
- **Leaves** – Snapic acid, Clorogenic acid
- **Seeds** – Fatty acids



*Martynia diandra*, *Glox.* was previously studied for its ‘ Wound healing property, Anti-epileptic property/ Anti-convulsant property, Anti-fertility effect and its role in skin diseases. According to *Ayurveda* texts *Kakanasa* is immune-booster plant. It acts on various systems of body like Respiratory system, Reproductive system, digestive system. It is most effective as anti-epileptic drug hence acts on nervous system. It is also widely used for diuresis purpose in acute and chronic renal failure hence acts on excretory system also. Hence, *Kakanasa* is very important and useful drug but still it is very ignored on species.

#### Conclusion:

This plant is very easily available all over India especially in monsoon season but still people have not considered its usefulness.

Researches should be done on the Diuresis property, immunity enhancing property Weight gain property and the evidences should be considered.

In India, so many Vaidyas (Ayurvedic doctors) are using it in their practice. The application of its churned leaves, decoction of its fruits and extracts of the whole plant is being used by herbal practioners. There are so many formulations of this *Kakanasa* is available today in private clinics. Global research should be needed to know the efficacy of this plant in specific diseases or conditions for social well-being.

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