**Kakanasa (Martynia diandra, Glox.) – An Ayurvedic Review**

**Netra Jere**\(^1\), **Amit Avalaskar**\(^2\)

1. P. G. Scholar,
2. Professor

Dravyaguna Vigyana Department,
Sumatibhai Shah Ayurved Mahavidyalaya, Hadapsar, Pune, Maharashtra, India.

* Corresponding Author: E-mail: drnetrajere7@gmail.com; Phone:+91 9975855524

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**Abstract**

Ayurveda is the most ancient health care System. The textual legacy started with Bruhat Samhita was completed in 4\(^{th}\) 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 Mooral 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. Chunekar 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 (Cacaxyc 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 Pharmacopia)
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 spils 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**

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<th>Market preparation / Indications</th>
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<td>Cha.Vi.8/151</td>
<td><em>ShiroVirechana</em> Drugs (By nasal route)</td>
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<td>Cha.Chi.7/123</td>
<td><em>Kushta</em> (Skin diseases) — <em>Mandala Kushtha Nashaka</em> (Reduces Tinea like skin infections)</td>
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<td>Cha.Chi.10/37</td>
<td><em>Apasmara</em> (Epilepsy) — <em>Dhoopanartha</em> (Fumigation)</td>
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<td>Cha.Chi.10/45</td>
<td><em>Apasmara</em> (Epilepsy) — <em>Pradhaman Nasya</em> (Drug powder through nasal route)</td>
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<td>Cha.Chi.16/120</td>
<td><em>Vyoshyadi Ghrita</em> = <em>Mrudbhakshana</em> (Pica) janya (Born from) <em>Pandu</em> (Anaemia)</td>
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**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*
Cha.Chi.30/51  |  **Baladi Yamaka Sneha** = Gouty arthritis

Cha.Chi.30/53  |  **Kashmmaryadi Ghrita** = Vaginal diseases, wishing for pregnancy

Cha.St.4/5   |  **Dashamooladi tailam** = Oil enema

Cha.St.4/9   |  **Jivantyadi yamaka sneha** = Oil enema
  Weight gain, to increase weight- sperms-digestion, used in urinesperms-menstrual abnormalities

Cha.St.10/37 |  **Kshir Basti** = in complications of Virechana (Pitta detoxification) atiyoga (Excess)

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<th>Table no.2: References in <em>Sushrutha Samhita</em></th>
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| Su.Chi.19/63 | Eliphantitis, *Apachi* (Cervical Lymphadenitis), *Galaganda* (Thyroid problems), *Grahani* (Over all digestion), Indigestion, Poison – *Paneeya Kshar* (Local irritant) In Wound healing – local oil massage |

| Su.Chi.37/20 | **Bhootikadi tailam** = in Oil enema |


| Su.U.51/23 | **Suvahadi Ghritam** |

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<th>Table no.3: References in <em>Ashtang Hridaya</em></th>
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| A.Hri.U. 39/34 | **Chyavanaprashavaleha Rasayana** = 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 practitioners. 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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Cite article

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