



## REVIEW ARTICLE ON VARAHIKANDA

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## ABSTRACT

Traditional medicine forms an integral part of health care system in many countries. According to WHO statistics, about 25% of the medicines are derived from plants. 80% people still depend upon traditional system of medicine. The practice of traditional medicines is based on hundreds of years of belief and observation, which originated much before the development of the modern medicine. The knowledge of traditional medicine throws light on the discovery of new and potent medicine. Systematic documentation is lacking for many medicinal plants in India. *Varahikanda* (*Dioscorea bulbifera* L.) possesses profound therapeutical potency, belongs to the family *Dioscoreaceae* which includes 9 genera and 220 species which are distributed in tropical and warm temperate regions. It is attributed with *Vrushya* (Aphrodisiac), *Balya* (Strength promoting), *Rasayana* (Rejuvenative) karmas. This review highlights on all the classical references of *Varahikanda*.

**KEYWORDS:** *Dioscorea bulbifera*, Dioscoreaceae, *Vrushya*, *Balya*, *Rasayana* which possesses profound therapeutical potency attributed with *Vrushya* (Aphrodisiac), *Balya* (strength promoting), *Rasayana* (Rejuvenative) karmas. *Diosgenin* obtained from *Dioscorea* species is one of the major sources for the commercial production of corticosteroids and steroidal contraceptives. This plant is found in Western ghats, North-Eastern region and Indo – Burma region. It is cultivated in all the states in India and the major yam producing states are Kerala, West Bengal, Bihar, Orissa, Tamilnadu, Assam, Rajasthan, Gujarat and Maharashtra.

## INTRODUCTION

Plants are one of the main sources of medicine since time immemorial. Ayurveda the science of life emphasizes on use of plants and strongly envisages that each and every dravya in the universe possesses medicinal property. Utilization of nature's wealth for prevention and cure of diseases plays a big role in human civilization, with a dependency of large number of human population on herbs, particularly in developing countries. The amazing journey of Ayurveda from its divine origin to the present day has left us wondering about the enormous potential this science possesses. Its successful existence itself proves the value and the unique basic principles remain eternal.

Interest in Ayurveda, has increased substantially in both developed and developing countries over the past two decades.

Plants have been used as medicine extensively. Its diverse healing modalities for millennia for anything from external to internal infections, mental and emotional imbalances have increased the demand of plant based products.

With onset of scientific research in herbals, it is becoming clearer that the medicinal herbs have a potential in today's synthetic era, as number of medicines are becoming resistant. 60% of synthetic medicines owe their origin to plants. Ancient knowledge coupled with scientific principles can come to the forefront and provide us with powerful remedies to eradicate the diseases. One such less explored drug is *Varahikanda* (*Dioscorea bulbifera* Linn.)

## CLASSICAL REVIEW OF VARAHIKANDA

The word "vara" means *sasya* (plant) and "aahanti" is that which destroys whatever comes in its way. Varaha is an animal which destroys the plants in its way *kanda* means tuber. *Varahikanda* is the tuber which is liked by the pigs.

## SAMHITA KALA

Acharya *Charaka* in the context of *Unmada* (psychological disorder) Chikitsa, mentions *Shukari* as one of the ingredients of Mahapaishacha Ghrita and *Chakrapani* commenting on this says *Shukari* is *Varahikanda*. Acharya *Sushruta* has included

*Varahakanda* in kanda varga and explains the qualities of *Varahakanda*. *Dalhana* commenting on this says *Varahakanda* is famous by the name *Bakaluka*. It is also called as *Vaarahi* and *Gristika*. Acharya *Sushruta* in *Nivratasantapiya rasayana adhyaya*, includes *Varahi* among the ashtadasha somasamaveerya aushadha and described it as a tuber having the capacity to regenerate and looks like a black snake. Acharya *Vagbhata* has mentioned *Pindaaluka* in *Annaswarupavijnaniya adhyaya* where *Arunadatta* in his commentary mentions *Pindaalu* as *Varahikanda*. *Vaktraalu*, *Shabarakanda*, *Mulakamulabha*, *Twakchadha* are the synonyms.

## NIGHANTU KALA

Nighantus like *Dhanvatari*, *Shodala*, *Hridayadeepika*, *Madanapala*, *Rajanighantu* and *Kaiyadeva* have mentioned *Varahikanda*. Author of *Siddhamantra* placed *Varahi* in *kaphavatagna pittala varga*. *Kaiyadeva* describes the tuber of *Varahikanda* as that which is similar to the testes of the pig in shape and possesses leaves like *taambula patra*. *Bhavaprakasha Nighantu* has mentioned *Varahikanda* as *prathinidhidravya* of *Ruddhi* and *Vruddhi*. The shape of the kanda resembles the head of the pig. It is also called by the name *Charmakaruluka* and *Gristika*. *Varahikandadi varga* has been mentioned in *Nighantu Adarsha*.

## GANAVARGA

**Table 1: Showing the classification of Varahikanda according to various authors.**

**Samhitas Gana /Varga**  
**Sushruta samhita** Kanda varga  
**Nighantu Varga**  
**Dhanwantari Nighantu** Karaveeradi  
**Shabdachandrika** Vrakshadhi  
**Shodala Nighantu** Karaveeradi, Aamradi  
**Madhava dravyaguna** Shakha  
**Siddhamantra** Kaphavataghna-Pittala  
**Hridayadeepika Nighantu** Dvipaadi  
**Madanapala Nighantu** Abhayadi  
**Raja Nighantu** Moolakadi  
**Kaiyadeva Nighantu** Oushadhi  
**Bhavaprakasha Nighantu** Guduchyadi  
**Saraswati Nighantu** Ulapa  
**Rajavallabha Nighantu** Madhyanika paricheda  
**Saligrama nighantu** Shakha  
**Nighantu adarsha** Vaarahikandadi  
**Priya Nighantu** Pippalyadi  
**Dravyaguna Samgraha** Shakha varga.

## PARYAYA PADAANI

- **Gristi:** It cures various diseases. It possesses madhura, sheeta properties.
- **Potri:** The shape of the tuber resembles the face of the pig.
- **Shukarakanda:** The tuber is liked and eaten by the pig.
- **Shukari:** Hairy tuber resembles that of hairy pig.

- **Badara:** That which gives strength.
- **Vruddhida:** That which helps in development of the tissues.
- **Sukandaka:** Tubers are beautiful
- **Vishvakshenakanta:** It is liked by Lord Vishnu.

## VERNACULAR NAMES

**Table 2: Showing Vernacular names of Varahikanda.**

**Assam Katalu**  
**Bengali** Chupri alu  
**Bombay** Chaina, Chopri alu, Khaumphal, Myoukphal, Safed kauphal  
**English** Common yam, Humped yam, Water yam, Winged yam  
**Hindi** Chupri alu, Khamalu  
**Kannada** Tung-genasu  
**Konkani** Kongadde  
**Malayalam** Kachil-kilangu, Kaavathu  
**Sanskrit** Vaarahikanda, Pindalu  
**Tamil** Kayavalli, Perumvalli kizangu  
**Telugu** Gunapendalamu, Pendalamu  
**Uriya** Jhonka alu

## RASAPANCHAKA

**Table 3: Showing Rasa panchaka of Varahikanda according to different authors.**

**B.N D.N. K.N. R.N P.N Mp.N So.N Sa.N**  
**Tikta(bitter)** + + + + + \_ +  
**Katu(pungent)** \_ + + + \_ + + +  
**Madhura(sweet)** + \_ + \_ + + \_ \_  
**Veerya(Potency)**  
**D.N M.D**  
**Sheeta(cold)** + -  
**Ushna(hot)** - +  
**Vipaka(Taste at the end of digestion)**  
**B.N D.N. K.N. R.N Mp.N M.D D.S So.N**  
**Katu(pungent)** + + + \_ \_ + + +  
**DOSHAKARMA.** [4,5,6,8,9,11,13,16,18]

**Table 4: Showing Doshakarma of Varahikanda according to different authors.**

**B.N D.N K.N R.N R.V Mp.N S.M M.D Sa.N**  
**Vatahara** + \_ + \_ \_ + + \_ \_  
**Pittakara** + \_ + \_ + \_ + + +  
**Pittahara** \_ \_ \_ + \_ \_ \_ \_ \_  
**Kaphahara** + + + + + + + +

## VARIETIES OF VARAHIKANDA<sup>[5]</sup>

According to *Kaiyadeva nighantu* types of *varahikanda* are

1. *Shabarakanda*
2. *Kharakanda*
3. *Snukchadopama*
4. *Kiri*
5. *Mulakamulabha*
6. *Shoukara*
7. *Vadavaanala*

**SUBSTITUTES AND ADULTERATION<sup>[7]</sup>**

Vrinda madhava mentions *Charmakaraluka* as substitute for *Varahikanda*.

**CONTROVERSY**

The controversy of *Varahi* might have started with the word *Aaluka*. The word *Aaluka* has been mentioned in *Charaka Samhita* as well as *Sushruta Samhita*. Acharya *Charaka* has told *Aluka* as *ahitatama* among the *kanda* and Acharya *Sushruta* has mentioned *aluka* in *kanda varga* and has given 6 varieties of *Aluka*. Both the commentators of *Charaka* and *Sushruta Samhitas* have given limited information regarding the morphological descriptions about these varieties. Acharya P.V. Sharma has correlated the varieties mentioned in *Sushruta* and *Rajanighantu* with different species of *Dioscorea*.

**Table 5: Showing Different types of Aluka according to Sushruta.**

**Types-Sushruta Description****Botanical Source**

**Madhvaluka** Romasha, Madhura *Dioscorea esculenta*

**Pindaluka** Familiar by the name *aluka* -

**Kastaluka** Different shaped tubers Locally called as *Katalu Dioscorea alata*

**Hastyaluka** Similar to *Kastaluka* but the tubers are bigger in size *Dioscorea hispida*.

**Shankaluka** Tubers are white in colour. *Dioscorea glabra*.

**Raktaluka** Tubers are red in colour. *Dioscorea bulbifera*.

**Table 6: Showing Different types of Aluka according to Rajanighantu.<sup>[24,25]</sup>**

**Type Srajanighantu Description Acc. To Acharya P.v. Sharma botanical source**

**Mukhalu** Mahakanda *Hastyaluka* of *Sushruta Dioscorea hispida*.

**Shubhralu** Shuklakanda *Shankhaluka* of *Sushruta Dioscorea glabra*.

**Kaasalu** - *Dioscorea puber*

**Neelalu** *Neelavarna Dioscorea prazeri*

**Paniyalu** *Jaleeya pradesha* - -

**Phondalu** *Jaleeya pradesha* - -

But *Varahi* is clearly described by the commentator of *Chakradatta* in the context of *Narasimha Choorna*. The description is as follows, The creeper of *Varahi* has leaves similar to betel-leaves (*taambula patra sadrashah*). Many bulbils are present on its stem. It has flowers like *Sarja* and *Arjuna*. Shape of the tubers resemble the head of *Varaha* and the tubers are covered with hairs. Tubers have bitter and pungent tastes. They are aromatic like *Lotus*. The vines are found in the forests and mountains. As per Dr. *Bapalal Vaidya* there should not be any controversy in identifying *Dioscorea* species. *Dioscorea bulbifera*, *Dioscorea pentaphylla*

either of the two should be fixed as *Varahikanda*. Dr. V.G Desai has given *Tacca aspera* Roxb as *Varahikanda*.

**IDENTITY OF DIFFERENT SPECIES OF DIOSCOREA<sup>[15]</sup>**

The confusion regarding the identity and nomenclature of the Indian species particularly the cultivated species of *Dioscorea* has been largely resolved by the work of *Prain and Burkill*. These authors have classified the genus into 2 broad divisions.

## 1. Stem twining to the right

- *Dioscorea alata*
  - *Dioscorea glabra*
  - *Dioscorea oppositifolia*
2. Stem twining to the left
- *Dioscorea esculenta*
  - *Dioscorea bulbifera*
  - *Dioscorea pentaphylla*
  - *Dioscorea hispida*

**Fig 1: Dioscorea bulbifera.**

**Fig 2: Dioscorea alata.**

**Fig 3: Dioscorea glabra.**

**Fig 4: Dioscorea hispida.**

**Fig 5: Dioscorea esculenta.**

**Fig 6: Dioscorea pentaphylla karmas<sup>[5,6,8,9,11,12,18,19]</sup>**

**Table 7: Showing Karmas of Varahikanda according to different authors.**

**Karmas (Action) B.N D.N K.N R.N P.N Mp.N So.N Sa.N**

**Ayushya** \_ \_ \_ \_ \_ +  
**Ayu vivardhana** + \_ + \_ \_ \_ \_  
**Agni vivardhini** + \_ + \_ \_ \_ +  
**Balya** + + + + \_ + + +  
**Balavardhini** + \_ \_ + \_ \_ \_  
**Deepani** \_ \_ \_ + \_ \_ \_  
**Hrudhya** \_ + \_ \_ \_ \_ \_  
**Jeevaniya** \_ \_ \_ + \_ \_ \_  
**Rasayana** + + + + \_ + \_  
**Shukrala** + \_ + \_ \_ + \_ +  
**Svarya** + \_ + \_ \_ \_ \_  
**Varnya** \_ \_ + \_ \_ \_ \_  
**Vrushya** \_ \_ \_ + + \_ + \_

**RASAPANCHAKA, KARMA, ROGHAGHNATA<sup>[9]</sup>**

**Table 8: Showing Rasapanchaka, Karma, Roghaghgnata of Different Varieties of Aluka Types of Aluka Rasapanchaka Karma.**

**Rogaghgnata**

**Mukhaalul** Madhura

Sheeta

Pittanashaka

Vatakara

Ruchivardhaka

Daha

Shosha

Trishna  
**Pindaalu** Madhura  
 Sheeta  
 Guru  
 Santarpana  
 Vrushya  
 Mutrakrichra  
 Daha  
 Shosha  
 Prameha  
**Kasaalu** Swadu Deepana Vatashleshma Amaya

### CHEMICAL CONSTITUENTS AND FOLKLORE USES<sup>[14,15,26,27]</sup>

**Table 9: Showing Chemical constituents and Folklore uses of Different Sources of Varahikanda.**

**Varahikanda,**  
**Botanical source Chemical constituents Folklore Uses**

***Dioscorea bulbifera*** Furanoid norditerpenes

Diosbulbins A,G

Volatile acids

Cal. Oxalate

Phenolics

- The dried and powdered tubers are used as application to sores and given internally with little cumin and sugar in milk as a remedy for syphilis, piles and dysentery.
- Powder made into bolus with butter is given to check diarrhea.
- Roasted tubers made into balls *Ashalatha et al: Mreview Article On Varahikanda www.iamj.in IAMJ: Volume 3; Issue 9; September- 2015* with ghee and sugar candy are a reputed remedy for piles.
- Bulbils cure typhoid in children.
- Root powder is used as a component of local medicine for tuberculosis.

***Dioscorea alata*** Tubers contain  
 Phenolics cyanidin- 3 glucoside, 3 anthocyanins,

Cyanidin-3-gentiobioside ferulate

Peonidin 3- gentiobioside

Alkaloid- dioscorine,

Saponin- diosgenin

- Tubers are antihelmenthic.
- Paste of tubers is applied on wounds, leprosy, gonorrhoea, piles.

***Dioscorea esculenta*** Albuminoids

Free from Dioscorine

- Mature tubers are boiled and eaten to increase body weight.

***Dioscorea hispida*** Alkaloids Steroidal Sapogenins

- Paste of the tuber is applied on affected parts to treat peeling of skin.

***Dioscorea pentaphylla*** Steroidal sapogenins

- Used in stomach ache, constipation, indigestion, abdominal pain, dysentery, cough, cold, skin wounds, boils.
- Decoction of tuber is given to animals for early recovery of fractured bones.

### AMAYIKA PRAYOGA

- Varahi choorna mixed with taila is applied externally in naadi vrana (S.Chi)
- Varahikanda choorna along with madhu is consumed internally every day for one month followed with ksheera and shaali bhojana, acts as *rasayana*.(S.U).
- Varahikanda siddha ghrita with-Draksha, Masha, Ashwagandha, Kadaliphala and Vamsalochana is indicated in stree roga and Asthi roga. (S.Y.)
- Varahyadi Ghrita along with sugar and honey given internally relieves yoni roga. (S.Y).
- Varahyadi ghrita used for bastikarma in yoni rogas (S.Y).

### IMPORTANT YOGAS

**Table 10: Showing Yogas of Varahikanda Yoga Adhikara/Prakarana.**

#### References Indications

**Mahapaishacha Ghrita** Unmada C.S Buddhi smritikaram, Unmada

**Varahi choornam** Rasayana S.S Rasayana

**Kushadhya Ghritam** Ashmari C.D Pittaja ashmari

**Narasimha Choorna** Vrushya C.D Vali, Palita, Khalitya, Meha, Pandu, Udara, Arshas, Grudrasi, Bhagandara, Mutrakrichra, Kusta, Shvasa, Kasa,

**Panchanimba Choorna** Kusta C.D Shataru, Visphota, Paama, Kilasa Bhagandara, Naadivrana, Shlipada, Prameha, Pradara, Damstra visha, Udara

**Varahyadi Choornam** Choorna S.Y Kamala

**Varahyadi Ghrita** Ghrita S.Y Stree roga, Asthi roga

**Varahyadi Ghrita (2)** Ghrita S.Y Yoni roga

**Vastyamayantaka ghrita** Ghrita S.Y Mutrakrichra, Ashmari, Vastiroga, Prameha.

#### Part Used

Kanda (Tuber)

#### Posology

Churna (Powder) 3- 6 gm

### TRADE AND COMMERCE<sup>[5]</sup>

- Industrial uses of *Dioscorea* species includes starch, poultry, livestock feed and production of yam flour.
- It contains steroidal sapogenins, diosgenin which is the precursor for the synthesis of the steroidal hormones used in contraceptive drugs.

## DISCUSSION

- References regarding *Varahikanda* are found in Brihatrayee and authors of various Nighantus have described it in different Vargas.
- Balya*, *Vrushya*, *Shukrala* karmas which are attributed to *Ruddhi* and *Vruddhi* are also ascribed to *Varahikanda* thus signifying the efficacy of *Varahikanda* as a substitute for *Ruddhi* and *Vruddhi*.
- Varahikanda* has been indicated in *Kusta* (skin diseases), *Krimi* (worms), *Prameha* (diabetes) rogas and is known for its *Balya*, *Shukrala* and *Rasayana* properties. Hence finds its utility in important formulations like *Narasimha choorna*, *Vastiamayantaka ghrta*, *Panchanimba choorna Mahapaischacha ghrta* etc.
- Morphologically the *Dioscorea* species are differentiated on the basis of the stem twining towards right or left. They are also differentiated depending on the morphology of leaf, structure and colour of the bulbils. Even in the classical references the varieties of *Aluka* are differentiated on the basis of the colour and shape of the tubers. Thus the correlation of *Dioscorea* species to different *Aluka* bheda is substantiated.
- The controversy regarding *Varahi* and different *Alukas* mentioned in *Sushruta Samhita* has been resolved. *Aluka* bhedas can be correlated with the *Dioscorea* species.
- Dioscorea bulbifera* is the accepted source for *Varahikanda*.
- All the *Aluka* bhedas have madhura rasa and sheeta guna except *Phondalu* which is katu and ushna in nature. Due to its madhura rasa and sheeta veerya it is used in disorders like *daha*, *trishna mutrakrichra* etc. The karmas like *vrushya* (aphrodisiac), *santarpana* (nourishing), *deepana* (appetizer) attributed to *Aluka* resembles to that of *Varahikanda*. *Phondalu* which has katu rasa and ushna veerya has vatashelshmahara (pacifies vata and kapha) and *deepana* properties. *Varahikanda* is indicated by most of the authors in *Prameha* and it is one of the indications where *Pindaluka* can be used thus suggesting the substitution of *Aluka* bhedas for *Varahikanda*.
- Diosgenin* is a pharmacological active component obtained from root and rhizomes of all *Dioscorea* species and is present in varying concentrations.
- Dioscorea* species, the source of *Varahikanda* is of economic importance as tuberous crops and known for its high carbohydrate reserve. The tuber not only stores food but has many of the plant secondary metabolites. It is one of the medicinally potent plants used in varied pharmacological activities like antihypertensive, androgenic, estrogenic, bone protective, immune stimulatory, free radical scavenging etc. The medicinal value of the plant lies in the bioactive phytochemical constituents responsible for the pharmacological activities.

- Based on morphology, chemical constituents and actions the other species of *Dioscorea* like *D. alata*, *D. esculenta*, *D.hispida*, *D. pentaphylla*, can be substituted to *Dioscorea bulbifera* which is the accepted source for *Varahikanda*.

## CONCLUSION

- Varahikanda* is a promising plant which has a wide range of chemical constituents.
- Further study to explore the traditionally claimed unexplored activities has to be carried out.
- Steps for identification and isolation of active constituents should be developed to confirm exact mechanism of action.
- Researches to involve the other species of *Dioscorea* as food and medicine should be carried out.

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